



**NEW HORIZON  
COLLEGE OF ENGINEERING**

Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade

**DEPARTMENT OF ELECTRICAL AND  
ELECTRONICS ENGINEERING**



**SELF ASSESSMENT REPORT (SAR)**

## PREFACE

*Education is a process of learning and acquiring knowledge. Our teachers are the key to this process, they believe in each student's capabilities and facilitate them to explore, understand and therefore learn.*

*In New Horizon College of Engineering, we take immense pride in providing highest quality of education by paying utmost importance to teaching quality and practical learning. Our excellence is not just confined to the classroom; we are active in organizing conferences, workshops, seminars, guest lectures, co-curricular and extra-curricular activities. These activities and educational methodology helps in an overall development in our students, making them competent for success. Due to such comprehensive practices New Horizon College of Engineering is a favoured engineering college in Bangalore.*

*We also take great pride in our excellent infrastructure and have ensured that the best of the technologies be incorporated in teaching learning process. We aspire to reach to a higher horizon, a horizon at which we are recognized at the national and the international levels and we are well set for this feat.*

*In the first phase five departments of NHCE have been already accredited by NBA. I firmly believe that NHCE is again ready for its accreditation for remaining three departments by NBA. It is in this context that we are submitting our Self-Assessment Report (SAR) to the NBA, New Delhi. A strenuous effort has been made to prepare the SAR and making the college ready for accreditation. I would like to express my cordial thanks to our beloved chairman **Dr. Mohan Manghnani** for guiding us through this journey.*

**Dr.Manjunatha**  
**PRINCIPAL**

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**PART A - INSTITUTIONAL INFORMATION****1. NAME AND ADDRESS OF THE INSTITUTION**

Name :	NEW HORIZON COLLEGE OF ENGINEERING	
Address :	RING ROAD, KADUBISANAHALLI BELLANDUR POST, NEAR MARATHALLI	
City : BANGALORE	Pin: 560 103	State : KARNATAKA

**2. NAME AND ADDRESS OF AFFILIATING UNIVERSITY**

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**  
Jnana Sangama , Shantibastvar Road , Machhe , Belagavi – 590018

**3. YEAR OF ESTABLISHMENT OF THE INSTITUTION**

2001

**4. TYPE OF THE INSTITUTION:**

University	<input type="checkbox"/>	Deemed University	<input type="checkbox"/>
Government Aided	<input type="checkbox"/>	Autonomous	<input type="checkbox"/>
Affiliated	<input checked="" type="checkbox"/>		

**5. OWNERSHIP STATUS:**

Central Government	<input type="checkbox"/>	State Government	<input type="checkbox"/>
Government Aided	<input type="checkbox"/>	Self financing	<input type="checkbox"/>
Trust	<input checked="" type="checkbox"/>	Society	<input type="checkbox"/>
Section 25 Company	<input type="checkbox"/>	Any other (Please specify)	<input type="checkbox"/>



**6. OTHER ACADEMIC INSTITUTIONS OF THE TRUST / SOCIETY / COMPANY Etc.,  
IF ANY**

Name of Institutions	Year of Establishment	Programs of Study	Location
<b>New Horizon College of Education</b>	1980	B.Ed	Indiranagar Bangalore
<b>New Horizon Public School</b>	1982	Schooling (Pre KG – X Std.)	Indiranagar Bangalore
<b>New Horizon Pre University College</b>	1982	PUC	Kasturinagar Bangalore
<b>New Horizon College Kasturinagar</b>	2004	Degree (BBM, BCA, B.Com)	Kasturinagar Bangalore

**7. DETAILS OF ALL THE PROGRAMS BEING OFFERED BY THE INSTITUTION  
UNDER CONSIDERATION-**

S.N	Program Name	Year of Start	Intake	Increase in Intake	Year of Increase	Year of Initial AICTE approval	Accreditation Status	Accreditation period
1	Information Science	2001	60	60	2008	2001	Granted Provisional Accreditation for two years for the period	2008-2011
2	Automobile Engineering	2012	60	0			Applying first time	
3	MBA	2004	60	0		2004	Eligible but not applied	
4	M.Tech Machine Design	2014	18	0		2014	Not Eligible for accreditation	
5	Bio Technology	2002	30	30	2004	2002	Granted Provisional Accreditation for three years for the period	2016-2019
6	Civil Engineering	2009	60	60	2013	2009	Granted Provisional Accreditation for	2016-2019

							three years for the period	
7	Computer Science Engineering	2001	60	30+30	2006	2001	Granted Provisional Accreditation for three years for the period	2016-2019
8	Electronics and Communication Engg.	2001	60	60	2006	2001	Granted Provisional Accreditation for three years for the period	2016-2019
9	Mechanical Engg.	2003	60	60	2012	2003	Granted Provisional Accreditation for three years for the period	2016-2019
10	Electrical & Electronics Engineering	2001	40	20	2002	2001	Granted Provisional Accreditation for two years for the period	2008-2011
SHIFT - II								
11	M.Tech Computer Science & Engg.	2011	18	6	2013	2011	Eligible but not applied	
12	Computer Science & Engg	2011	60	-	-	2011	Granted Provisional Accreditation for three years for the period	2016-2019
13	Electronics and Communication Engg.	2012	60	-	-	2012	Granted Provisional Accreditation for three years for the period	2016-2019
14	Mechanical Engg.	2010	60	-	-	2010	Granted Provisional Accreditation for three years for the period	2016-2019
15	Electrical & Electronics Engineering	2010	60	-	-	2010		

**8. PROGRAMS TO BE CONSIDERED FOR ACCREDITATION VIDE THIS APPLICATION**

S. No.	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Automobile Engineering
2	Under Graduate	Engineering & Technology	Electrical & Electronics Engineering
3	Under Graduate	Engineering & Technology	Information Science & Engineering

**9. TOTAL NO. OF EMPLOYEES IN THE INSTITUTION.  
A. REGULAR EMPLOYEES ( FACULTY & STAFF)**

Items	2017-18		2016-17		2015-16	
	MIN	MAX	MIN	MAX	MIN	MAX
<b>Faculty in Engg. (Male)</b>	138	140	138	152	144	153
<b>Faculty in Engg. (Female)</b>	130	132	142	145	148	151
<b>Faculty in Engg. in Maths, Science &amp; Humanities (Male)</b>	10	10	08	10	08	08
<b>Faculty in Engg. in Maths, Science &amp; Humanities (Female)</b>	21	21	19	22	23	23
<b>Non Teaching Staff (Male)</b>	47	50	48	50	46	51
<b>Non Teaching Staff (Female)</b>	12	13	11	12	09	10

**B. CONTRACTUAL EMPLOYEES ( FACULTY & STAFF)**

Items	2017-18		2016-17		2015-16	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engg. (Male)	0	0	0	0	0	0
Faculty in Engg. (Female)	0	0	0	0	0	0
Faculty in Engg. in Maths, Science & Humanities (Male)	0	0	0	0	0	0
Faculty in Engg. in Maths, Science & Humanities (Female)	0	0	0	0	0	0
Non Teaching Staff (Male)	0	0	0	0	0	0
Non Teaching Staff (Female)	0	0	0	0	0	0

**10. TOTAL NUMBER OF ENGINEERING STUDENTS :**

Engineering & Technology- UG	<input checked="" type="checkbox"/>	Shift 1	<input checked="" type="checkbox"/>	Shift 2
Engineering & Technology- PG	<input checked="" type="checkbox"/>	Shift 1	<input checked="" type="checkbox"/>	Shift 2
Engineering & Technology- Polytechnic	<input type="checkbox"/>	Shift 1	<input type="checkbox"/>	Shift 2
MBA	<input checked="" type="checkbox"/>	Shift 1	<input type="checkbox"/>	Shift 2
MCA	<input type="checkbox"/>	Shift 1	<input type="checkbox"/>	Shift 2

**ENGINEERING AND TECHNOLOGY - UG SHIFT 1**

Items	2017-18	2016-17	2015-16
Total No. of Boys	608	660	645
Total No. of Girls	222	211	254
Total	830	871	899

**ENGINEERING AND TECHNOLOGY - UG SHIFT 2**

Items	2017-18	2016-17	2015-16
Total No. of Boys	183	186	169
Total No. of Girls	55	53	71
Total	238	239	240

**ENGINEERING AND TECHNOLOGY - PG SHIFT 1**

Items	2017-18	2016-17	2015-16
Total No. of Boys	8	5	18
Total No. of Girls	1	2	5
Total	9	7	23

**ENGINEERING AND TECHNOLOGY - PG SHIFT 2**

Items	2017-18	2016-17	2015-16
Total No. of Boys	2	13	17
Total No. of Girls	10	5	39
Total	12	18	56

**ENGINEERING AND TECHNOLOGY - MBA SHIFT 1**

Items	2017-18	2016-17	2015-16
Total No. of Boys	38	41	43
Total No. of Girls	22	18	17
Total	60	59	60

**11. VISION OF THE INSTITUTION**

To achieve total quality in education and excellent knowledge management through specific, measurable, attainable, relevant time bound goals and continuous improvement methods.

**12. MISSION OF THE INSTITUTION**

To mould our students into a holistic personality accomplished in emotional, moral, intellectual, social and mental capabilities besides inculcating a capacity for critical and lateral thinking.

**13. CONTACT INFORMATION OF THE HEAD OF THE INSTITUTION AND NBA COORDINATOR, IF DESIGNATED.**

<b>HEAD OF THE INSTITUTION</b>	
NAME	Dr. Manjunatha
DESIGNATION	PRINCIPAL
MOBILE NO.	9901916000
E-MAIL ID	principal@newhorizonindia.edu
<b>NBA COORDINATOR</b>	
NAME	Dr. M.S. GANESHA PRASAD
DESIGNATION	DEAN , PROF. & HEAD - ME
MOBILE NO.	9886921136
E-MAIL ID	dean_stuaffair@newhorizonindia.edu

CRITERION - 1	VISION, MISSION & PROGRAM EDUCATIONAL OBJECTIVES	60
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### 1.1. State the Vision and Mission of the Department and Institute (5)

#### DEPARTMENT VISION AND MISSION

Electrical and Electronics Engineering is one of the prestigious branches of Engineering, originated decades ago from which various other branches like Electronics & Communication Engineering, Computer Science and Engineering, Information Science and Engineering etc, have emerged. A critical investigation into modern state-of-the-art technology leads to the fact that an Electrical graduate will fit in today's corporate sector.

The Department of Electrical and Electronics Engineering at New Horizon College of Engineering (NHCE) was established in the year 2001-2002 with an intake of 40 students. The Department progressed in its intake to 60 students in the year 2002-2003 and increased to 120 students in the year 2010-2011. The Department was accredited by NBA in the year 2008 for a period of 3 years (2008-2011). The Department of Electrical & Electronics Engineering got its Research Centre status in the year 2010-2011 from Visvesvaraya Technological University, Belagavi.

The Department is equipped with latest equipments and experimental setups in the laboratories to help in teaching learning Process. The Department also conducts number of workshops, seminars and conferences to enhance the knowledge and to get awareness among the students with the latest technologies.

The Electrical and Electronics Engineering graduates are groomed in subject knowledge like power systems, Electronics and Communication, Computer Science etc and technical knowledge through coursework that is relevant to current technology; they develop the ability to synthesize and envisage solution to real time problems through their immersion in the problem based activities.



**Career Scope:**

Electrical Engineers have better scope in industries such as Generation, Transmission and Distribution of electrical power and manufacture of essential household, gadgets and office appliances. In today's automated world the demand for Electrical Engineers is on rise. They are responsible for the process of designing, developing and implementing a product and also involved in research in order to give way to new ideas. They also face various challenges like selecting appropriate technical solutions, materials, test equipment and procedures to the manufacture and production of safe, economical, high-performance products and services. They should know how to implement their ideas in best possible manners.

**Skills Involved:**

An Electrical Engineer can acquire expertise into a number of diverse streams like, Automatic control, Power Electronics, Power systems, Lighting, High Voltage Engineering, Embedded Systems, Circuit Simulation and Power Generation. In addition to these fascinating fields, one can also compete with the contemporary Software Engineers. The various public sector organizations like ISRO, DRDO, NTPC, BHEL, IRCON, and BEL etc also provide a large number of career opportunities for the electrical graduates. There are ample opportunities for higher studies also in Electrical Engineering, both in India and abroad.

**VISION**

*To produce competent Engineers to excel in the field of Electrical and Electronics Engineering by providing necessary knowledge and skills through measurable and continuous improvement methods.*

**MISSION**

*To provide an environment in which both faculty and students can think critically and assimilate knowledge*

- *By imparting quality technical education for students to develop into globally competent technology professionals.*
- *By collaborating with industry, research organizations and academia to encourage creativity and innovation.*
- *By preparing graduates with positive attitude and ethical values.*

## INSTITUTE VISION AND MISSION

New Horizon College of Engineering was established in the year 2001 as a self-financing minority Institute founded and managed by “New Horizon Educational and Cultural Trust” which has more than 45 years of footing in the field of quality education. The motto of the Trust is “IN PURSUIT OF EXCELLENCE” for imparting quality technical education to the deserving and meritorious students through *New Horizon College of Engineering*. The trust has eight high performing Institutions covering the entire gamut of educational needs of the society from kindergarten to Doctoral Program in various disciplines of learning.

New Horizon College of Engineering is an Autonomous college (2015-2016) affiliated to Visvesvaraya Technological University (VTU), approved by All India Council for Technical Education (AICTE) and University Grants Commission (UGC). It is accredited by NAAC with 'A' grade for five years (2016-2021). The Departments of Computer Science and Engineering, Electronics and Communication Engineering, Mechanical Engineering, Civil Engineering and Biotechnology have been accredited by **National Board of Accreditation (NBA)** for three years (2017-2020). It is an ISO 9001:2008 certified Institution. The college campus is situated in the IT corridor of Bangalore surrounded by MNCs and IT giants such as Intel, Accenture, Cape Gemini, ARM, Symphony, Wipro, Nokia, JP Morgan and Cisco to name a few.

NHCE has a scenic and serene campus that provides an environment which is conducive for personal and intellectual growth. The infrastructure facilities act as a facilitator for the effective delivery of the curriculum. NHCE boasts of state-of-the-art facilities for its students. They are given utmost encouragement in their areas of interest by providing hi-tech facilities backed by faculty support. The institute places highest priority on innovative programs of instructions that include both traditional class room theory and professional skills training. There is a strong impetus on overall personality development of the students with emphasis on soft skills. Students are supported through mentoring and counselling systems. The management offers scholarships to meritorious students. At NHCE, we understand and respect our role as educators from the

moment the student walk into the campus, he/she is well guided to know his/her strengths and choose an area of functional specialization. This enables students to concentrate their efforts and energies to gain the competitive edge.

Some of the societal outreach activities carried by the New Horizon Educational Institution (NHEI) trust are listed below:

- **Dr. Mohan Manghnani**, Chairman of New Horizon Educational Institutions, was awarded and declared “**THE DOYEN – GUARDIAN OF KNOWLEDGE**” by The Hindu Group on 27th March, 2017.



**Figure 1.1.1:** Dr. Mohan Manghnani, Chairman of New Horizon Educational Institutions, was awarded and declared “**THE DOYEN – GUARDIAN OF KNOWLEDGE**” by The Hindu Group on 27th March, 2017.

- **VEER VANDANA** – A special program was held in September 2016 to felicitate the brave soldiers of our country and their families. Rs. 67.5 lakh was awarded to 27 ‘VEER NARIS’ where the wives of martyred soldiers of the Indian Army were awarded Rs. 2.5 Lakh each.



**Figure 1.1.2:** Dr. Mohan Manghnani, Chairman of New Horizon Educational Institutions felicitating the Brave Soliders and their Families.

- NHEI Trust has donated Rs. 50 lakhs towards Army Welfare Fund in 2016



**Figure 1.1.3:** NHEI Trust –Donated Rs. 50 Lakhs towards Army Welfare Fund

- NHEI Trust has donated Rs. 5 crores to Prime Minister Fund towards Swachh Bharath Abhiyan initiative started by Sri. Narendra Modiji. Honourable Prime Minister of India in the year 2015



**Figure 1.1.4:** NHEI Trust –Donated Rs. 5 Crore towards Swachh Bharath Abhiyan to Honourable Prime Minister of India

- New Horizon Educational and cultural Trust had received the prestigious state award from the Hon'ble chief Minister of Karnataka Shri. Jagadish Shettar and minister of Kannada and Culture Shri.Govind Karjol on the auspicious occasion of "Kannada Rajyotsava" held on the 1st November 2012.



**Figure 1.1.5:** Dr. Mohan Manghnani, Chairman and Managing Trustee of New Horizon Educational Institutions received the prestigious state award “Kannada Rajyotsava” from the Hon'ble chief Minister of Karnataka.

**VISION**

*To achieve total quality in education and excellent knowledge management through specific, measurable, attainable, relevant, time-bound goals and continuous improvement methods.*

**MISSION**

*To mould our students into a holistic personality accomplished in emotional, moral, intellectual, societal and mental capabilities besides inculcating a capacity for critical and lateral thinking.*

**Rationale:**

The vision is set taking into consideration the present day technical needs of the society as well as forecasting the future requirements in various technological fields so as to become an element in the growth of the nation, since the prospect of any nation depends on science, technology and human values.

- To accomplish the vision of the institute, the mission should be comprehensive.
- Providing good infrastructure, state of the art laboratories, and employing qualified, experienced and eminent faculty to improve the quality of technical education.
- Organizing programs to encourage students to do research, building interaction with outside world and providing conducive environment to learn are identified as source of the basic needs to meet the present day technical challenges.
- Introducing professional ethics and morale in the curriculum to inculcate social commitment among students.

**1.2. State the Program Educational Objectives (PEOs)****(5)**

The Program Educational Objectives (PEOs) of the UG Programme in Electrical and Electronics Engineering are established through consultation process among stake holders as described in section 1.4 and these address the following broad aspect.

- What our graduates could do best?
- How our graduates would approach problem solving using what skills?
- What value our graduates will have?

The PEOs of the programme are

*PEO1: To provide good learning environment to develop entrepreneurship capabilities in various areas of Electrical and Electronics Engineering with enhanced efficiency, productivity, cost effectiveness and technological empowerment of human resource.*

*PEO2: To inculcate research capabilities in the areas of Electrical and Electronics Engineering to identify, comprehend and solve problems and adopt themselves to rapidly evolving technology.*

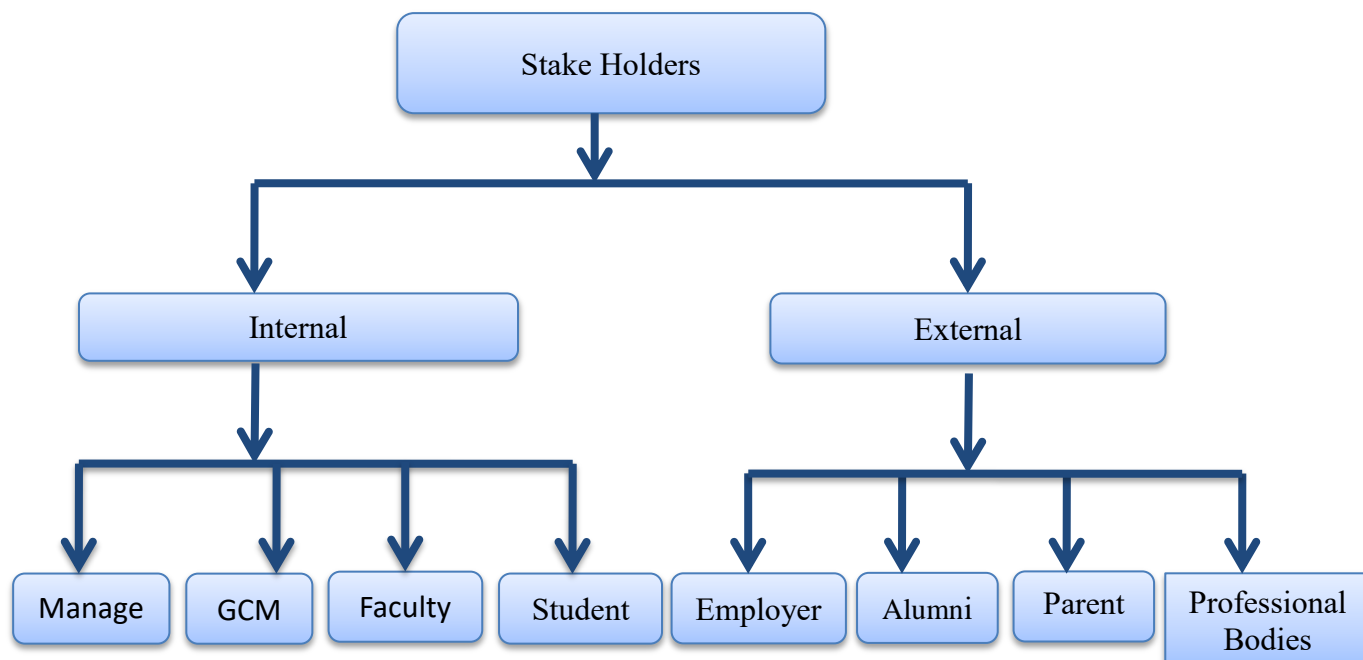
*PEO 3: To create high standards of moral and ethical values among the graduates to transform them as responsible citizens of the nation.*

**1.3. Indicate where the Vision, Mission And PEO's are published and disseminated among Stakeholders (10)**

The Vision, Mission and PEO's are published and disseminated at:

- College website: <http://www.newhorizonindia.edu/about-nhei/>
- Department website: <http://newhorizonindia.edu/nhengineering/department-of-electrical-and-electronics-engineering/>
- Department notice boards
- HOD room
- College brochure
- Staff Rooms
- Laboratories
- Corridors

The vision, mission and PEO's are disseminated to the stakeholders of the programme as shown in figure 1.3.



**Figure 1.3:** Flowchart showing the various types of stakeholders



**Student:**

- Most prominent role in the program.
- Their feedback is considered to introduce innovative teaching and learning methodologies.
- Their input will help the program to introduce the elective programs to meet the changing trends

**Faculty:**

- Involve a vital role in working of the program
- Involves in various committees to check the consistency of the programme.
- Provides input for designing the programme, establishment and PEOs/POs, course outcomes and assessment.

**Alumni:**

- They are a measure of long term success of the program.
- Alumni feedback helps in curriculum design to meet the changing trends in engineering and technology.
- Recollect their existence during their stay in the institute and advice the department with necessary inputs with respect to student's career.
- They are the ambassadors of the programme.

**Employer:**

- Represent the major end users of the graduates.
- Gives higher focus to the programme on future data to create awareness with the industries.
- Gives inputs which overcome the gap between program and industry.

**Parent:**

- Expect their wards to have good professional career and higher education.

**Professional bodies:**

- Help students to interact with industries.
- Help in conducting seminars/workshops.
- Help the graduates to take up research work.

#### 1.4. State the process for defining the Vision and Mission of the Department and PEO's of the programme (25)

The department established its vision and mission through consultative process involving the stake holders of the institute / department such as Management, GC members, faculty, students, staff, parents, alumni and employers, the future scope of the department and the societal requirements as shown in Fig. 1.4.1. In establishing the vision and mission of the department, the following steps were followed:

Step 1) Vision and Mission of the institute are taken as basis.

Step 2) Views are taken from the stake holders

Step 3) Accepted views are analyzed and reviewed to check the consistency with the vision and mission of the institute.

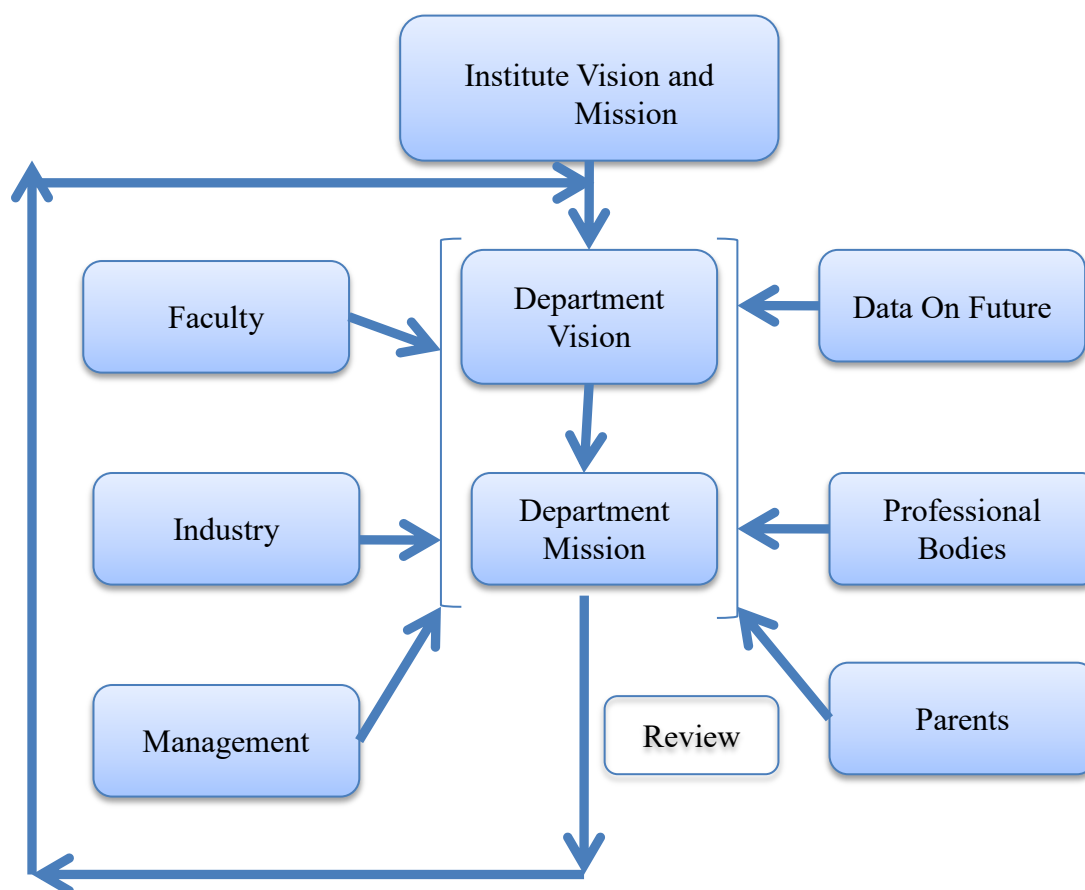


Figure 1.4.1: Process for Defining Vision and Mission

**Process for defining Program Educational Objectives of the program:**

The Program Educational Objectives are established through a consultation process involving the core constituents such as students, alumni, industry, faculties and employers. The PEO's are established through the following process steps:

Step 1) Vision and Mission of the department are taken as basis to interact with various stake holders and graduate attributes defined by NBA are also kept in view.

Step 2) Program coordinator consults the key constituents and collects their views and submits the views to Program Assessment Committee (PAC).

Step 3) PAC summarizes the collected views and expresses its opinion on the views and forward the same to Departmental Advisory Board (DAB)

Step 4) DAB deliberates on the views expressed by the PAC and formulates the accepted views based on which PEOs are to be established.

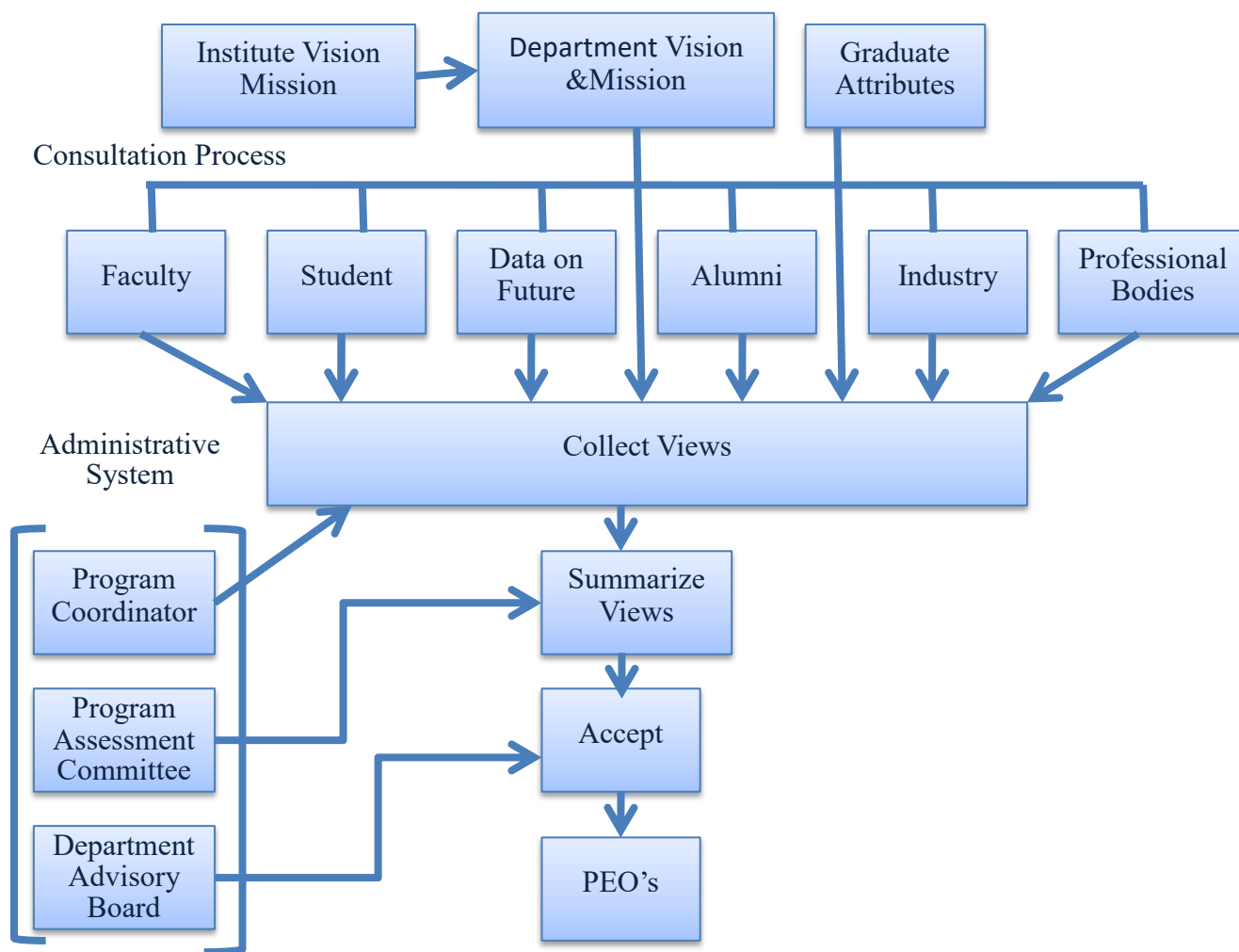


Figure 1.4.2: Process For Establishing PEO's

**Inputs considered for establishing the PEOs:****Faculty interaction:**

The members of the teaching faculty- as course coordinators play an important role in establishing PEOs. They are responsible for generating, altering and analyzing all the activities related to the achievement of the course outcomes.

**Alumni feedback:**

Alumni have intimate knowledge of the programme and play a vital role in the assessment of PEOs. Alumni feedback is obtained through alumni survey. Alumni meet is conducted once a year ( 15<sup>th</sup> August ).

**Employer feedback:**

Corporate insight/performance of the graduates with other employees of the organization is through employer feedback.

**Program Assessment Committee (PAC):**

It consists of program coordinator, module coordinators and course coordinators.

Program Assessment Committee provides guidelines for

- Program academic and administrations unit.
- Student outcome assessment.

**Department Advisory Board:**

It consists of Head of the Department, program coordinator, industry representatives, representatives from professional bodies and academia. The committee looks after effectiveness of the program through evaluation and proposing necessary changes.

**1.5. Establish consistency of PEOs with Mission of the Department (15)****Program Educational objectives:**

**PEO1:** To provide good learning environment to develop entrepreneurship capabilities in various areas of Electrical and Electronics Engineering with enhanced efficiency, productivity, cost effectiveness and technological empowerment of human resource.

**PEO2:** To inculcate research capabilities in the different areas of Electrical and Electronics Engineering to identify comprehend and solve problems and adopt themselves in a world of constantly evolving technology.

**PEO3:** To create high standards of moral and ethical values among the graduates this will help in transforming them as a responsible citizen of the nation.

**Mission:** To provide an environment in which both faculty and students can think critically and assimilate knowledge.

- By imparting quality technical education for students to develop into globally competent, technology professionals.
- By collaborating with industry, research organizations and academia to encourage creativity and innovation.
- By preparing graduates with positive attitude and ethical values.

### MAPPING OF PEO'S VERSES MISSION OF THE DEPARTMENT

1. Slightly (Low)
2. Moderate (Medium)
3. Substantial (High)

**Table 1.5.1:** Consistency of PEOs with Mission of the Department

PEO'S	MISSION OF THE DEPARTMENT		
	M1	M2	M3
PEO1	3	3	1
PEO2	3	3	1
PEO3	1	1	3

#### JUSTIFICATION FOR PEO'S MAPPING WITH DEPARTMENT MISSION

**PEO 1:** Which is concerned with the preparation of students with the over all knowledge in electrical and electronics engineering **maps substantially with M1 and M2**. These mission statements focus on providing the students with strong and clear fundamentals of electrical engineering and related field. Also **PEO 1 maps slightly with M3** as it is concerned with the professional and responsible behaviour of a student.

**PEO 2:** Which focuses on preparing the students to implement their ideas for the challenging task in the inter disciplenery areas like Mechanical, Communications, Computer Science and civil engineering. **So maps substantially with M1**. As the curriculum is focus to the industry standards **PEO 2 substantially maps with M2** and **maps slightly with M3**.

**PEO 3:** Which is concerned with educating students for the development of overall attitudes, ethics and values that will help their careers in engineering, academics and government employments **maps substantially with M3**. By framing the departmental co-curricular clubs the students are involved in organizing the different activities which are helpful for their career building so **PEO 3 slightly maps with M1 and M2**.

**2.1. Program Curriculum****(20)****2.1.1. State the Process Used to Identify Extent of Compliance of the University Curriculum for Attaining the Program Outcomes and Program Specific Outcomes as Mentioned in Annexure I. Also Mention the Identified Curricular Gaps, if any** **(10)**

New Horizon College of Engineering is affiliated to Visvesvaraya Technological University (VTU), Belagavi. Hence the syllabus / curriculum prescribed by the university is followed. VTU curriculum contains core, Humanities, Social Sciences and elective courses. The curriculum is framed and reviewed by the university once in 4 years by the board of studies comprising of chairman and senior faculty members. The Table 2.1.1.1 gives a comparison of curriculum suggested by AICTE and curriculum followed by VTU.

**Table 2.1.1.1. Comparison of curriculum of AICTE and VTU**

Sl. No	Types of Courses	AICTE Courses	VTU Courses
1	Core Subjects	38	36
2	Humanities and Social Science	3	3
3	Basic Science	7	8
4	Engineering Science	17	8
5	Elective Subjects	7	5
6	Seminar	1	1
7	Project Work	2	1

The university follows the overall curriculum break up suggested by AICTE and implemented it in its program, which is for a period of 8 semesters or 4 years. The curriculum of VTU for Bachelor of Engineering in Electrical and Electronics Engineering is given in Table 2.1.1.2.

Table 2.1.1.2. VTU Curriculum

Subject Code	Subject Title	Teaching Hours/week		Examination		
		Theory	Practical	IA Marks	Final Exam	Total
<b>I &amp; II Semester</b>						
10MAT11	Engineering Mathematics – I	4	-	25	100	125
10PHY12/ 10PHY22	Engineering Physics	4	-	25	100	125
10CHE12/ 10CHE22	Engineering Chemistry	4	-	25	100	125
10CIV13/ 10CIV23	Elements of Civil Engineering & Engineering Mechanics	4	-	25	100	125
10CCP13/ 10CCP23	Computer Concepts & C Programming	4	-	25	100	125
10EME14 / 10EME 24	Elements of Mechanical Engineering	4	-	25	100	125
10CED 14 / 10CED 24	Computer Aided Engineering Drawing	4	-	25	100	125
10ELE 15/ 10ELE 25	Basic Electrical Engineering	4	-	25	100	125
10ELN 15 / 10ELN 25	Basic Electronics	4	-	25	100	125
10WSL16 / 10WSL26	Workshop Practice	-	3	25	50	75
10CPL16 / 10CPL 26	Computer Programming Laboratory	-	3	25	50	75
10PHYL16 / 10PHYL26	Laboratory Experiments in Engineering Physics	-	3	25	50	75
10CHEL16 / 10CHEL 26	Engineering Chemistry Laboratory	-	3	25	50	75
10MAT21	Engineering Mathematics – II	4	-	25	100	125
<b>III Semester</b>						
10MAT31	Engineering Mathematics – III	4	-	25	100	125
10ES32	Analog Electronic Circuits	4	-	25	100	125
10ES33	Logic Design	4	-	25	100	125
10ES34	Network Analysis	4	-	25	100	125
10EE35	Electrical and Electronic Measurements And Instrumentation	4	-	25	100	125
10EE36	Electric Power Generation	4	-	25	100	125
10ESL37	Analog Electronics Lab	-	3	25	50	75
10ESL38	Logic Design Lab	-	3	25	50	75
<b>IV Semester</b>						
10MAT 41	Engineering Mathematics – IV	4	-	25	100	125
10ES42	Microcontrollers	4	-	25	100	125



10ES43	Control Systems	4	-	25	100	125
10EE44	Field Theory	4	-	25	100	125
10EE45	Power Electronics	4	-	25	100	125
10EE46	Transformers and Induction Machines	4	-	25	100	125
10ESL47	Microcontrollers Lab	-	3	25	50	75
10EEL48	Power Electronics Lab	-	3	25	50	75
<b>V Semester</b>						
10AL51	Management and Entrepreneurship	4	-	25	100	125
10EE52	Signals and Systems	4	-	25	100	125
10EE53	Transmission and Distribution	4	-	25	100	125
10EE54	D.C. Machines and Synchronous Machines	4	-	25	100	125
10EE55	Modern Control theory	4	-	25	100	125
10EE56	Linear IC's and Applications	4	-	25	100	125
10EEL57	Measurements and Circuit Simulation Laboratory	-	3	25	50	75
10EEL58	Transformers and Induction Machines Laboratory	-	3	25	50	75
<b>VI Semester</b>						
10EE61	Power System Analysis and Stability	4	-	25	100	125
10EE62	Switchgear & Protection	4	-	25	100	125
10EE63	Electrical Machine Design	4	-	25	100	125
10EE64	Digital Signal Processing	4	-	25	100	125
10EE65	CAED (Computer Aided Electrical Drawing)	1	3	25	100	125
10EE661	Operation Research	4	-	25	100	125
10EE662	Advanced Power Electronics	4	-	25	100	125
10EE663	Fuzzy Logic	4	-	25	100	125
10EE664	Object Oriented Programming using C++	4	-	25	100	125
10EE665	Embedded Systems	4	-	25	100	125
10EE666	Electrical Engineering Materials.	4	-	25	100	125
10EEL7	D.C. Machines and Synchronous Machines Laboratory	-	3	25	50	75
10EEL68	Control Systems Laboratory	-	3	25	50	75
<b>VII Semester</b>						
10EE71	Computer Techniques in Power System Analysis	4	-	25	100	125
10EE72	Electrical Power Utilization	4	-	25	100	125
10EE73	High Voltage Engineering	4	-	25	100	125
10EE74	Industrial Drives and Applications	4	-	25	100	125
10EE751	HVDC Transmission	4	-	25	100	125
10EE752	Programmable Logic Controllers	4	-	25	100	125
10EE753	Artificial Neural Network	4	-	25	100	125
10EE754	Operating System	4	-	25	100	125
10EE755	Digital System with VHDL	4	-	25	100	125
10EE756	Testing and Commissioning of Electrical Equipment	4	-	25	100	125
10EE761	Power System Planning	4	-	25	100	125
10EE762	Computer Control of Electrical Drives	4	-	25	100	125
10EE763	Data Structure	4	-	25	100	125
10EE764	VLSI Circuits and Design	4	-	25	100	125
10EE765	Micro & Smart System Technology	4	-	25	100	125

10EE766	Electromagnetic Compatibility	4	-	25	100	125
10EEL77	Relay and High Voltage Laboratory	-	3	25	50	75
10EEL78	Power System Simulation Laboratory	-	3	25	50	75
<b>VIII Semester</b>						
10EE81	Electrical Design, Estimating and Costing	4	-	25	100	125
10EE82	Power System Operation and Control	4	-	25	100	125
10EE831	Reactive Power Management	4	-	25	100	125
10EE832	Flexible A.C. Transmission Systems (FACTS)	4	-	25	100	125
10EE833	Advanced Instrumentation System	4	-	25	100	125
10EE834	AI Applications to Power Systems	4	-	25	100	125
10EE835	Data Base Management Systems (DBMS)	4	-	25	100	125
10EE836	Renewable Energy Sources	4	-	25	100	125
10EE841	Power Systems Dynamics and Stability	4	-	25	100	125
10EE842	Energy Auditing & Demand Side management	4	-	25	100	125
10EE843	Data communications and Networking	4	-	25	100	125
10EE844	Electrical Distribution Systems	4	-	25	100	125
10EE845	Insulation Engineering	4	-	25	100	125
10EE846	Intellectual Property Rights	4	-	25	100	125
10EE847	Electrical Power Quality	4	-	25	100	125
10EEP85	Project Work	-	6	100	100	200
10EES86	Seminar	-	3	50	-	50

### Program Outcomes (POs)

Electrical and Electronics Engineering Graduates will be able to:

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

### Program Specific Outcomes (PSOs)

**PSO 1:** Graduates will be able to solve real life problems of power system and power Electronics using MiPower, PSPICE and MATLAB software tools and hardware.

**PSO 2:** Graduates will be able to develop and support systems based on Renewable and sustainable Energy sources.

Further, following processes are used to identify the extent of compliance of the curriculum for attaining the Program Outcomes and Program Specific Outcomes

#### **Feedback from Students – Graduate Survey**

The Graduate Survey form - questionnaire about the program is prepared by the program coordinator for the students. This serves as a feedback at end of the program to gauge the degree of attainment of POs and PSOs. Figure 2.1.1.1. shows a template of graduate survey form.

#### **Feedback from students – Exit Survey**

The Student Exit Survey form - questionnaire is prepared by the program coordinator, and given to students at end of the program to get their feedback of the program. A template of student exit survey form is as shown in Figure 2.1.1.2.

#### **Feedback from parents**

The Program coordinator will collect the feedback from parents about their experience and also their wards opinion on the program. A template of parent feedback form is shown in Figure 2.1.1.3.

#### **Feedback from the employers**

The Survey questionnaire to employer is prepared by the program coordinator and is given to the recruiters during recruitment process. Their feedback is analysed to gauge the degree of attainment of program outcomes. A survey questionnaire to employer template is as shown in Figure 2.1.1.4.

#### **Feedback from alumni**


A questionnaire is prepared by the program coordinator and is given to the alumni. It will be done once in every year on August 15 to gauge the degree of attainment of POs and PSOs. A Feedback from an Alumnus template is shown in Figure 2.1.1.5.

**NEW HORIZON COLLEGE OF ENGINEERING**  
Ring Road, Kadubisanahalli, Bellandur Post, Near Marathalli, Bangalore -560103  
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING  
**GRADUATE SURVEY FORM**

Name : Mounika USN: 120413EC029 Year: 2019 (VIIT)

Sl.	Program Outcomes/ Program Specific Outcomes	Excellent	Very Good	Good	Satisfactory	Poor
		(5)	(4)	(3)	(2)	(1)
1	<b>Engineering Knowledge:</b> Were you able to apply the knowledge of Mathematics, Science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems		✓			
2	<b>Problem analysis :</b> Were you comfortable in identifying, formulating, reviewing, research literature and analyzing complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.		✓			
3	<b>Design / Development of Solutions:</b> Were you able to design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural, societal.		✓			
4.	<b>Conduct investigations of complex problems:</b> Was it easy to use research – based knowledge and research methods, including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.		✓			
5	<b>Modern tool usage:</b> Were you able to create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.			✓		
6	<b>The engineer and society:</b> Did you apply reasoning informed by the contextual knowledge to assess societal, health, safety legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice				✓	
7	<b>Environment and sustainability</b> Did you understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			✓		
8	<b>Ethics:</b> Were you able to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.		✓			
9	<b>Individual and team work:</b> Did you function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings		✓			
10	<b>Communication:</b> Did you communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			✓		
11	<b>Project management and finance:</b> Did you demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi-disciplinary environments.			✓		
12	<b>Life – long learning:</b> How far you recognize the need for , and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change				✓	
13	Were you able to solve real life problems of power system and power Electronics using MiPower, PSPICE and MATLAB software tools and hardware?	✓				
14	Were you able to develop and support systems based on Renewable and sustainable Energy sources?		✓			

Figure 2.1.1.1. Graduate Survey Form



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 DEPARTMENT OF EEE

**STUDENT EXIT SURVEY FORM**

Name : Chandra Kala C      USN : 1NH11EET13  
 Name of the Degree completed: BE      Year of Graduation : 2015

You are hereby informed to give your healthy comment for the following

Sl.No	Program Outcomes(POS)	Excellent	Very Good	Good	Satisfactory	Poor
		(5)	(4)	(3)	(2)	(1)
1	How do you rate the overall personality development programme during these 4 years of your stay		✓			
2	Infrastructural facilities such as Library, Laboratories, workshops, canteen, Hostel and other campus facilities.		✓			
3	How was encouragement for students participation in various co-curricular activities ( seminars, conferences, guest lecturers etc.,)			✓		
4	How is quality of academic resources – say teaching faculty, course material etc.,			✓		
5	How was encouragement towards extra curricular activities		✓			
6	How about mentoring facility		✓			
7	Do you recommend NHCE as a college of your choice for admission to your siblings, friends , relatives etc.,	YES	✓	NO		
8	Any other suggestions for improving the college as a college of excellence or a model college	<u>To establish research labs.</u>				

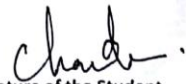

  
 Signature of the Student

Figure 2.1.1.2. Student exit survey



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 DEPARTMENT OF FEE

**PARENTS FEED BACK FORM**

Name of the Parent : RAVINDRA SINGH Phone No: 09742 406760

Postal Address : NO.74/3, BEHIND DIVYA FUEL POINT  
MAIN ROAD, MARATHALLI

Name : VISHAL TOMAR USN : 1NH1EE758

Name of the Degree completed: 2015 Year of Graduation : B.E

You are here by informed to give your healthy comment for the following

Sl.No	Parameters	Excellent	Very Good	Good	Satisfactory	Poor
		(5)	(4)	(3)	(2)	(1)
1	How do you rate the overall personality development of your son/daughter during their 4 years of stay	✓				
2	How do you feel about infrastructural facilities such as library, laboratories workshops, canteen , Hostel and other campus facilities		✓			
3	Did your son / daughter got encouragement for participation in various co-curricular activities ( say seminar, conference, guest lectures etc.)	✓				
4	How do you rate the quality of academic resource (say teaching faculty, course material etc.)		✓			
5	Your reaction about placement activities conducted.	✓				
6	Encouragement towards extra curricular activities ( sports etc.)		✓			
7	How is mentoring facility in the campus			✓		
8	Do you recommend NHCE as a college of your choice for admission to your siblings, friends, relatives etc.?	YES				
9	Any other suggestions for improving the college as a college of excellence or a model college	More placement activities for core branch				



  
 Signature of the Parent

Figure 2.1.1.3. Parent Feedback form



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 Approved by AICTE & ISO 9001:2008 certified.  
 DEPARTMENT OF ECE

**PARENTS FEED BACK FORM**

Name of the Parent : RAVINDRA SINGH Phone No: 09742 406760

Postal Address : NO.74/3, BEHIND DIVYA FUEL POINT  
MAIN ROAD, MARATHALLI

Name : VISHAL TOMAR USN : 1NH1EE758

Name of the Degree completed: 2015 Year of Graduation : B.E

You are here by informed to give your healthy comment for the following

Sl.No	Parameters	Excellent (5)	Very Good (4)	Good (3)	Satisfactory (2)	Poor (1)
1	How do you rate the overall personality development of your son/daughter during their 4 years of stay	✓				
2	How do you feel about infrastructural facilities such as library, laboratories workshops, canteen , Hostel and other campus facilities		✓			
3	Did your son / daughter got encouragement for participation in various co-curricular activities ( say seminar, conference, guest lectures etc.)	✓				
4	How do you rate the quality of academic resource (say teaching faculty, course material etc.)		✓			
5	Your reaction about placement activities conducted.	✓				
6	Encouragement towards extra curricular activities ( sports etc.)		✓			
7	How is mentoring facility in the campus			✓		
8	Do you recommend NHCE as a college of your choice for admission to your siblings, friends, relatives etc.?	YES				
9	Any other suggestions for improving the college as a college of excellence or a model college	More placement activities for core branch				


  
 Signature of the Parent

Figure 2.1.1.4. Employer Survey Form



### NEW HORIZON COLLEGE OF ENGINEERING

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#### SURVEY QUESTIONNAIRE TO EMPLOYER

Sir/Madam,

Our Institute is following outcome based education in continuity with the international practices (as per Washington Accord). The assessment of the outcome has to be through a survey (such as Program Exit survey, Alumni survey, parent feedback, employer survey etc.). The following questions need your valued consideration. Please find some time and send in your answers to the following questions. This report will be kept confidential.

Sd/-  
PRINCIPAL

Company Name : Tata Consultancy Services		
Mailing Address : Tata Consultancy Services, VYDEHI RC-1 BLOCK 82, EPIP, Whitefield		
City: Bangalore	State:Karnataka	Pin Code :560066
Employment Details	Year:2017	Email :benjin_s@tcs.com

Sl	Questions	Graduate Attributes	Program Outcomes	Excellent	Very Good	Good	Satisfactory	Poor
				(5)	(4)	(3)	(2)	(1)
1	Your views on strengths of our graduates?	i) Engineering Knowledge ii) Ethics iii) Individual & Team Work iv) Communication v) Project Management & Finance vi) Life Long Learning	PO1 PO8 PO9 PO10 PO11 PO12		4			
2	How do you find our student in applying the knowledge of maths, science in the solution of complying engineering problems?	i) Engineering Knowledge ii) Design & Development of solution iii) Conduct Investigations of complex problems iv) Modern tool usage v) The engineer & Society	PO1 PO3 PO4 PO5 PO6		4			
3	How do you found our student with respect to technical skills?	i) Problem Analysis ii) Design & Development of solution iii) conduct Investigations of complex problems	PO2 PO3 PO4		4			
4	How do you rate our student with respect to their ethical and moral values?	i) Ethics	PO8		4			
5	How do you rate our students with respect to work?	i) Ethics ii) Individual & Team Work	PO8 PO9		4			
6	How do you find our curriculum with respect to industry?	i) Life Long Learning	PO12	5				
7	Were you happy with the support you received from the college during placement drive?	NA	NA	5				
8	How do you rate our student with respect to communication skills?	i) Communication	PO10		4			
9	How do you rate our student with respect to being open to new ideas and learning new technologies	i) Lifelong learning	PO12		4			
10	How do you rate our student with respect overall performance in terms of percentage contribution to your organization?	Adheres to all 12 Graduate Attributes	PO1 to PO12		4			
11	How do you rate the capability of our students in the area of Modern software tools usage?		PSO1	5				
12	Level of involvement in design and development of Renewable and sustainable Energy Systems.		PSO2	5				

NA: Not Applicable. List of PSO's and PO's is appended for your reference. Your detailed comments on our graduate employee

Technically Sound, Good at Communication and articulation and positive Attitude

Students have an open mind towards learning

Figure 2.1.1.4. Employer Survey Form

### NEW HORIZON COLLEGE OF ENGINEERING

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#### ALUMNI SURVEY FORM

We shall be thankful to and appreciate you, if you can spare some of your valuable time to fill up this survey form and give us your valuable suggestion for further improvement of the Institution programme. Your valuable input will be of great use to improve the quality of our academic program and enhance the credibility of the Institute.

Sd/-  
 PRINCIPAL

Name of the Alumni	Rohit Kumar Tiwari			USN:	
Degree	BE ✓	M. Tech	MBA	MCA	
Programme	AUTO / BT / CIVIL / CSE / EC / EEE / IS / ME				
Year of Graduation	2015				
Name of the organization where you are working	Century link				
Designation	Software Engineering trainee				

S l.	Graduate Attributes	POs/ PSOs	Assessment				
			Excellent (5)	Very Good (4)	Good (3)	Satisfactory (2)	Poor (1)
1.	Extent of usefulness of Basic Science and Engineering Science courses in understanding Problems you solved so far in your career	PO1	✓				
2.	Publication of research papers, white papers, promotion in organizations	PO2 PO4		✓			
3.	Ability to design and develop system components & processes	PO3 PSO1,2		✓			
4.	New tools learnt during job and its applications	PO5 PSO1,2	✓				
5.	Ability to factor in sustainability, ethical, health, public safety, and environmental issues in the solutions developed by you	PO6 PO7 PO8 PSO1,2		✓			
6.	Level of comfort in working in groups-initially and at present	PO9	✓				
7.	Communication skills (level of acquisition during the program, usefulness in the job, additional acquisitions during work etc.)	PO10	✓				
8.	Extent of application of projects, management principles in the projects handled/ being handled by you	PO11 PSO1,2	✓				
9.	Enhancement of qualifications (higher degrees, certificate courses etc.), knowledge, skills etc. (workshops, training programs etc.)	PO12 PSO1,2	✓				

[PTO]

Figure 2.1.1.5. Alumni Feedback Form

## 1. Relevance of Curriculum in your Job.

Since I studied core branch & I am working in software engineering field there is no co-relation.

## 2. Need any change in curriculum and Syllabi.

For the both IT & core, can be able to manage that kind of syllabi is required

## 3. Improvement in teaching learning process.

Its not required since every semester it will be updated

## 4. Have you learned the basic concepts through your projects.

Yes

## 5. Any other suggestions / Comments.

class hours should be less, project, practical hours should be more.



NAME &amp; SIGNATURE

Figure 2.1.1.5. Alumni Feedback Form

### Curricular Gaps

The Table 2.1.1.3. lists the identified gap in the syllabus of the VTU for the attainment of Program Outcomes and Program Specific Outcomes.

**Table 2.1.1.3. Identified Curricular Gaps**

Subject	Subject code	Gap in the syllabus
Analog Electronic Circuits	10ES32	Fabrication of semiconductor devices
Logic Design	10ES33	Design of Memories
Network Analysis	10ES34	Analysis of magnetically coupled circuits
Electrical and Electronic Measurements and Instrumentation	10EE35	Modern Electrical and Electronic measuring instruments
Electric Power Generation	10EE36	Current status of power generation
Microcontrollers	10ES42	Introduction to ARM processor
Control Systems	10ES43	Introduction to Compensators
Field Theory	10EE44	Electromagnetic Interference, Designing of electromagnetic compatibility
Power Electronics	10EE45	Use of modern power electronic devices in real time controlling applications
Transformers and Induction Machines	10EE46	Transformer applications in High Voltage Engineering
Signals and Systems	10EE52	Applications of signals and systems
Transmission and Distribution	10EE53	Introduction to HVDC transmission and Simulation of performance parameters
D.C. Machines and Synchronous Machines	10EE54	Construction and operation of Stepper motor
Modern Control theory	10EE55	Introduction to non-linear system analysis
Linear IC's and Applications	10EE56	Spice modelling of operational amplifiers
Power System Analysis and Stability	10EE61	Practical Stability of Power System
Switchgear and Protection	10EE62	Construction and Operating Principles Numerical Relays
Electrical Machine Design	10EE63	Insulation testing of the machine

Digital Signal Processing	10EE64	Practical applications of DSP
E- CADD	10EE65	3D modelling in transformer and machines
Object Oriented Programming using C++	10EE664	MISRA C++
Computer Techniques in Power System Analysis	10EE71	Modelling of transient stability
Electrical Power Utilization	10EE72	Motors for Electric Traction
High Voltage Engineering	10EE73	Partial Discharge Measurements
Industrial Drives and Applications	10EE74	Stepper Motor Drives
Testing and Commissioning of Electrical Equipment	10EE756	Testing of Digital Relays
Power System Planning	10EE761	Availability Based Tariff in Indian context
Electrical Design, Estimating and Costing	10EE81	Design of UPS for Residential Installation.
Power System Operation and Control	10EE82	Simulation of estimation algorithms
Renewable Energy Sources	10EE836	Current Status of Wind Generation in India
Power Systems Dynamics and Stability	10EE841	Practical Stability of Power System

### 2.1.2. State the Delivery Details of the Content beyond the Syllabus for the Attainment of POs and PSOs (10)

(Provide details of the additional course/learning material/content/laboratory experiments/projects etc., arising from the gaps identified in 2.1.1 in a tabular form in the format given below).

Note: Please mention in detail whether the Institution has given such inputs and suggestions to the Affiliating University regarding curricular gaps and possible addition of new content/add-on courses in the curriculum, to bridge the gap and to better attain program outcome(s).

Table 2.1.2.1. Delivery details of bridging the gap sessions

For academic year 2017-18								
S. No	Subject Name	Subject Code	Gap (Title of the topic)	Action Taken	Date-Month-Year	Resource Person with designation	% of Students	Relevance to PO's, PSO's
1	Digital Signal Processing	10EE64	Practical applications of DSP	Invited Talk	27/09/2017	Mr. Phani Kumar, Project Manager, Intel Inc, Bangalore	90%	POs:1,2,3,4,12, PSO2
2	Electrical Power Utilization	10EE72	Motors for Electric Traction	Invited Talk	05/10/2017	Dr. Satyanarayana, Rtd. Executive Engineer, KPTCL, Bangalore	72%	POs:1,2,3,4,6,7,8,12, PSO1, PSO2
3	Industrial Drives and Applications	10EE74	Stepper Motor Drives	Invited Talk	17/10/2017	Dharnish T.S Group Lead, Continental Automative Bangalore	78%	POs:1,2,3,4,6,7,8,12, PSO1, PSO2
4	Computer Techniques in Power System Analysis	10EE71	Modeling of transient stability	Invited talk	08/11/2017	Priyanka Kole, Assistant Professor, Dept of EEE, NHCE, Bangalore	90%	POs:1,2,3,4,12, PSO1, PSO2,
5	Testing and Commissioning of Electrical Equipment	10EE756	Testing of Digital Relays	Invited Talk	10/11/2017	Mr. Bhaskara M.C, Senior Product Engineer, Harman Connected Services	89%	POs:1,2,3,4,5,12, PSO1

Table 2.1.2.1. Delivery details of bridging the gap sessions

For academic year 2016-17								
S. No	Subject Name	Subject Code	Gap (Title of the topic)	Action Taken	Date-Month-Year	Resource Person with designation	% of Students	Relevance to PO's, PSO's
1	Renewable Energy Sources	10EE836	Current Status of Wind Generation in India	Invited Talk	11/05/2017	Ms Roshini Additional Director Zeonics Systech Pvt Ltd, Bangalore	80 %	POs: 1,2,3,7, 12, PSO1, PSO2,
2	Switchgear and Protection	10EE62	Construction and Operating Principles Numerical Relays	Invited Talk	10/05/2017	Hemanth Maddhula, Hardware Engineer, Aruba Networks Pvt. Ltd.	85%	POs: 1,2,3,4, 6,12, PSO1
3	Power System Operation and Control	10EE82	Simulation of estimation algorithms	Expert Talk	23/03/2017	Priyanka Kole, Assistant Professor, Dept of EEE, NHCE, Bangalore	85 %	POs:5,1 2, PSO1,
4	Modern Control theory	10EE55	Introduction to non-linear system analysis	Invited Talk	14/09/2016	Dr. K. Vinoth Kumar Sr. Scientist, ABB Ltd.	80%	POs:1,2 ,3,4,5,1 2, PSO1,
5	Signals and Systems	10EE52	Applications of signals and systems	Expert Talk	08/08/2016	Prof Satish Dept. of EEE, NHCE	70%	POs: 1,2,3,10 ,12,PS O2,

Table 2.1.2.1. Delivery details of bridging the gap sessions

For academic year 2015-16								
S.No	Subject Name	Subject Code	Gap (Title of the topic)	Action Taken	Date-Month-Year	Resource Person with designation	% of Students	Relevance to PO's, PSO's
1	Electrical Design, Estimating and Costing	10EE81	Design of UPS for Residential Installation	Invited Talk	21/04/2016	Kiran S, Module Lead, Mistral Solutions Pvt. Ltd.	78%	POs:1,2,3,4,5,12, PSO1, PSO2
2	Power System Analysis and Stability	10EE61	Practical Stability of Power System	Expert Talk	07/04/2016	Prof B.S. Mohan, Assistant Professor Dept of EEE, NHCE, Bangalore	89%	POs:1,2,3,4,5,12, PSO1, PSO2,
3	Object Oriented Programming using C++	10EE664	MISRA C++	Invited Talk	29/03/2016	Prof. Santosh Kumar, Assistant Professor, EPCET, Bangalore	88%	POs: 1,2,3,4,5,12, PSO1,
4	Microcontrollers	10ES42	Introduction to ARM processor	Invited Talk	03/03/2016	Mr. Phani Kumar, Project Manager, Intel Inc, Bangalore	90%	POs: 1,2,3,4,5,12, PSO1
5	Control Systems	10ES43	Introduction to Compensators	Invited Talk	12/02/2016	Dr. K. Vinoth Kumar Sr. Scientist, ABB Ltd.	69%	POs: 1,2, 3, 4,11,12, PSO1, PSO2,
6	D.C. Machines and Synchronou s	10EE54	Construction and operation of Stepper motor	Expert Talk	05/11/2015	Prof. Santosh Assistant Professor, Dept. of EEE, NHCE	75%	POs: 1,2,3,4,5,12, PSO1,
7	High Voltage Engineering	10EE73	Partial Discharge Measurements	Invited Talk	06/11/2015	Dr. Ravi Kumar, Scientist F, CPRI, Bangalore	78%	POs: 1,2,3,5,10, PO12, PSO2,



8	Transmission and Distribution	10EE53	Introduction to HVDC transmission.	Invited Talk	07/10/2015	Mr. Audithya K Nilekani, Quality Control Engineer, General Electric, Bangalore	90%	POs: 1,2,3,4, 5,6,11,12, PSO1, PSO2,
9	Electrical and Electronic Measurements and Instrumentation	10EE35	Modern Electrical and Electronic measuring instruments	Invited Talk	22/09/2015	Dr. Mohan Kumar, Associate Professor, Dept. of ECE, NHCE, Bangalore	85%	POs: 1,2,3,5, 8,10,12, PSO1
10	Management and Entrepreneurship	10AL51	Entrepreneurship Skills for Engineers	Invited Talk	23/09/2015	Dr. Sheelan Mishra, Professor and HoD, MBA,NHCE, Bangalore	85%	POs: 3,5,6,8, 9,10,11, 12
11	Logic Design	10ES33	Design of Memories	Invited Talk	19/08/2015	Mr. Nelson, HAL, Bangalore	85%	Pos: 1,2,3,4, 5, 9, 12, PSO1

The Table 2.1.2.2 gives the list of identified contents beyond the syllabus.

**Table 2.1.2.2. List of identified contents beyond the syllabus**

Sl. No.	Identified Content beyond the syllabus
1	Parallel Operation of Synchronous Generator
2	Operational Amplifier Applications and Integrated Circuit (IC) Fabrication
3	State Machine
4	Substation Layout, Bus Arrangements and Substation Equipment
5	Templates and Exceptions
6	Woman Empowerment- Opportunities in Electrical Engineering
7	Awareness of Smart Energy Consumption with Renewable Energy
8	Trends in High Voltage

9	ARM Processor
10	Materials for special applications and Modern Techniques for Material Science in Electrical Engineering
11	Opportunities in defence for Electrical Engineers
12	The Opportunities in Higher Studies Abroad
13	Industrial Networks on IP Internet Protocol(Cisco Networking)
14	SCADA
15	REVIT - MEP Training
16	PCB Design Training
17	Entrepreneurship in Electrical Engineering
18	Smart Grid
19	Renewable Energy, Online and Offline UPS
20	Current Technologies in IoT

The Table 2.1.2.3 gives the Guest Lectures organized in the Department to deliver the identified contents beyond the syllabus.

**Table 2.1.2.3: Guest Lecture Details to cover beyond Syllabus**

GUEST LECTURES CONDUCTED BY THE DEPARTMENT DURING THE YEAR CAY 2017-18					
Sl. No.	Name of the Invited Speaker	Title of the Lecture delivered	% of students attended	Date of the Lecture	Outcome
1	Mr. Shivaraj Gudagunti, Asst. Engineer, TUV, Bangalore	Parallel Operation of Synchronous Generator	85 % (V A and B)	11/11/2017	POs: 2,3,4,6, 7,8,11,12 PSO1, PSO2,
2	Mr. Neelamekakanna, SMTC, Global Foundaries, Bangalore	Operational Amplifier Applications and Integrated Circuit (IC) Fabrication	87 % (III A and B)	11/11/2017	POs: 2,3,4,6, 7,8,11,12 PSO1, PSO2
3	Ms. K. Shanthi, Asst. Training Engineer, LiveWire, Chennai	State Machine	90 % (III A and B)	10/11/2017	POs: 2,3,4,6, 7,8,11, 12 PSO1, PSO2

4	Mr. T.R. Sathyanarayana Rao, Trainer, KPTCL Bangalore	Substation Layout, Bus Arrangements and Substation Equipment	90 % (V A and B)	03/11/2017	POs: 2,3,4,6, 7,8,11,12 PSO1, PSO2
5	Mr. Guruprasad, Team Lead, Manhattan Associates; Bangalore	Templates and Exceptions	85% (V A and B )	02/11/2017	POs: 2,3,4,6, 7,8,11,12 PSO1, PSO2
6	Ms. Aishwarya Lft. Officer, IAF	Woman Empowerment- Opportunities in Electrical Engineering	80 % (III, V, VII A and B)	30/10/2017	POs: 6,7,8,9, 10,11,12 PSO2
7	Dr. H. Naganagowda Director, National Training Center for Solar Technology, Bangalore	Awareness of Smart Energy Consumption with Renewable Energy	80 % (III, V, VII A and B)	26/10/2017	POs: 2,3,4,6, 7,8,11, 12 PSO1, PSO2

**GUEST LECTURES CONDUCTED BY THE DEPARTMENT DURING THE YEAR  
CAYm1: 2016-17**

Sl.No	Name of the Invited Speaker	Title of the Lecture delivered	% of students attended	Date of the Lecture	Outcome
1	Dr. A. N Ravi, Retired Scientist, Central Power Research Institute, Bangalore	Trends in High Voltage	70 % (VIII A and B)	28/04/2017	POs: 1,2,3,4, 5,6,7,10,12 PSO2
2	Mr. Phani Kumar, Project Manager, INTEL Corporation, Bangalore	ARM Processor	80 % (IV A and B)	03/04/2017	POs: 1,3,5,12 PSO1, PSO2
3	Dr. K Santhy, Head Material Science engg, Care group of institutions, Trichy	Materials for special applications and Modern Techniques for Material Science in Electrical Engineering	80 % (III A and B)	21/10/2016 and 22/10/2016	POs: 1,3,4,5, 12 PSO1, PSO2
4	Mr. Pawan, DYSP, Defence Ministry India	Life Skills and Opportunities in defence for Electrical Engineers	85 % (VII A and B)	15/10/2016	POs: 1,6,8,9, 10,12
5	Smudranil Chatterjee	The Opportunities in Higher Studies Abroad	80 % (V A and B)	27/09/2016	POs: 6,8,12
6	Smudranil Chatterjee	The Opportunities in Higher Studies Abroad	80 % (VII A and B)	27/09/2016	POs: 6,8,12
7	Mr. Sree Ram Gopal, Founder/Architect, Stack Solutions, Bangalore	Industrial Networks on IP Internet Protocol(Cisco Networking)	85 % (V A and B)	08/09/2016	POs: 1,5,9,12, PSO1

GUEST LECTURES CONDUCTED BY THE DEPARTMENT DURING THE YEAR CAYm2: 2015-16					
S.No	Name of the Invited Speaker	Title of the Lecture delivered	% of students attended	Date of the Lecture	Outcome
1.	Ms.Savitha, Asst. Engineer, Centre for Development of Advanced Computing , #1, Old Madras Road, Byapanahalli, Bangalore - 38, Ph: 080- 25246369	SCADA	60 % (VI A and B)	20/04/2016	POs: 1,5,6,9, 12 PSO1, PSO2
2.	Ms. Anjali Jose, Sr. Faculty, Educaad Learning Solutions Pvt Ltd, Marthahalli, Bangalore, Mob: 9980306002	REVIT - MEP Training	70 % (IV A and B)	15/04/2016	POs: 1,2, 3,4, 5,6,9,12 PSO1
3.	Mr.Kotesh M, Indian Tech-Keys, 50 # 1, Shivappa Garden, Opp. KSVK School, Chennasandra, Whitefield, Bangalore - 67	PCB Design Training	80 % (VIII A and B )	05/03/2016	POs: 1,2,3,4, 5,6, 9, 12 PSO1
4.	Mr. Atul Sharma, IOTACELL, AJR Pride, 2nd Floor, 27th Main Road, Sector -1, HSR Layout, Bangalore -102	Entrepreneurship in Electrical Engineering	88 % (VII A and B)	16/11/2015	POs: 1,6,8,9, 10,12 PSO1, PSO2
5.	V Suresh Babu, Asst Director, NPTI, Banglore	Smart Grid	90 % (V A and B)	04/11/2015	POs:1,2,3,4, 5,6,7,8,9,10, 12 PSO1, PSO2
6.	Mr.SreekanthAkula, Power One Microsystems Pvt. Ltd, # 419/58, 14th Cross, 20th Main, 1st Block, Rajajinagara, Bangalore -10	Renewable Energy, Online and Offline UPS	88 % Students (VII A and B)	10/10/2015	POs: 1,2,3,7, 12 PSO1

**2.2. Teaching - Learning Processes (100)****2.2.1. Describe Processes Followed to Improve Quality of Teaching and Learning (25)**

*(Processes may include adherence to academic calendar and improving instruction methods using pedagogical initiatives such as real-world examples, collaborative learning, quality of laboratory experience with regard to conducting experiments, recording observations, analysis of data etc. encouraging bright students, assisting weak students etc. The implementation details and impact analysis need to be documented)*

The process followed to improve the quality of Teaching Learning in the Department for each semester is shown in Figure 2.2.1.1.

**Academic Calendar**

Department prepares calendar of events based on the academic calendar of VTU and calendar of events of the college. The calendar of events of the Department includes the activities planned like guest lectures, industrial visit and assignment dates. The staff members and students adhere to the calendar of events to meet the department's planned events.

The academic calendars of VTU, calendar of events of college and the Department are shown in Figure 2.2.1.2, Figure 2.2.1.3 and Figure 2.2.1.4 respectively.

Lesson plan for each course is designed by the course coordinators adhering to the calendar of events of the department. Figure 2.2.1.5 shows the template of lesson plan.

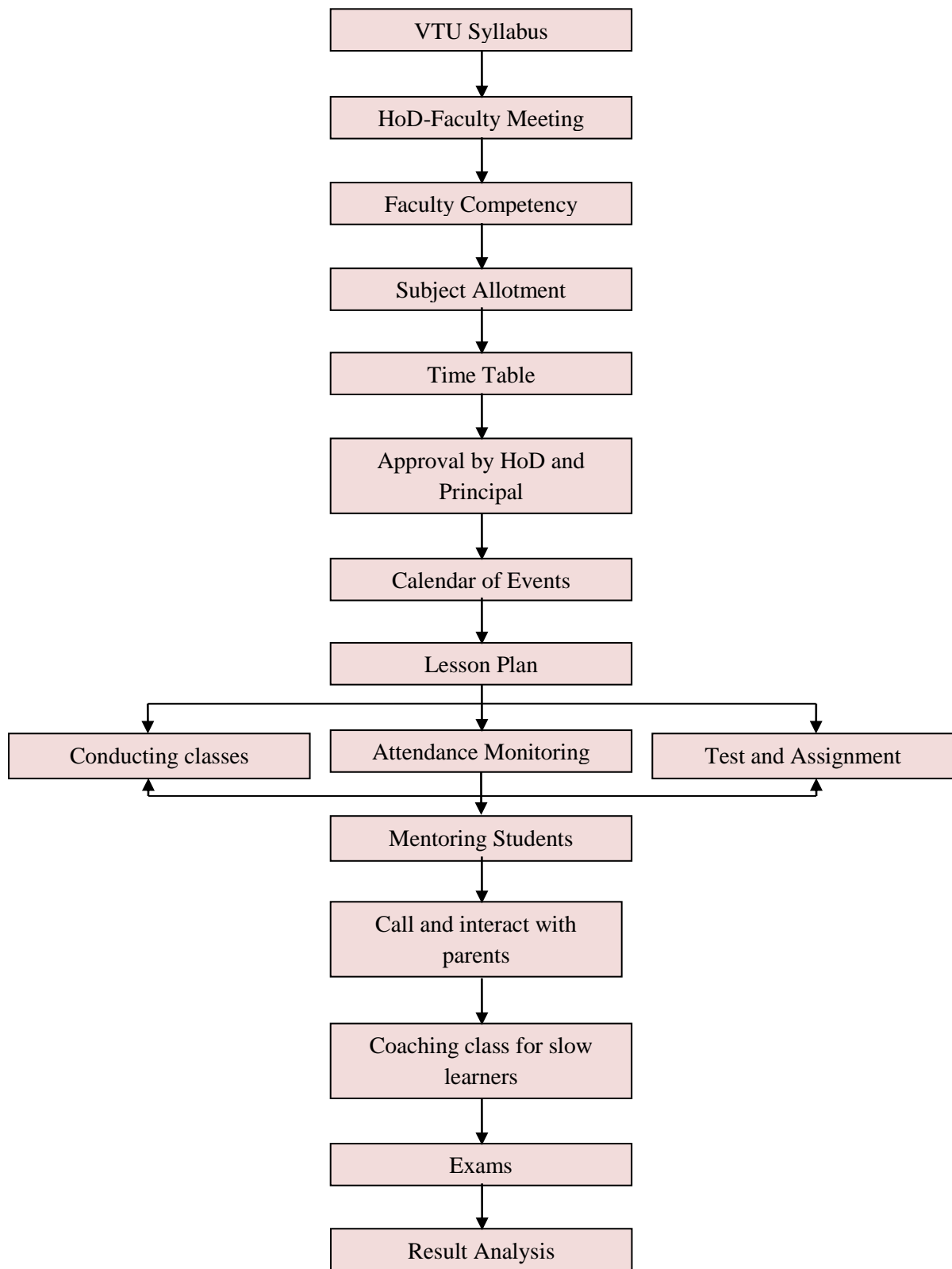


Figure 2.2.1.1. Teaching Learning Process

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI**

**Academic Calendar of VTU, Belagavi for ODD Semester of 2017-2018 (Aug 2017 - Jan 2018)**

	III, V & VII Sem B.E./B.Tech III, V, VII & IX Sem B.Arch	I SEM B.E./B.Tech/ B.Arch	III & V Sem MCA	III Sem MBA	III Sem M.Tech [Internship of 16 Weeks]	III Sem M.Arch.
Commencement of ODD Semester	07.08.2017	07.08.2017	07.08.2017	21.08.2017	07.08.2017	11.09.2017
Last Working day of ODD Semester	25.11.2017	25.11.2017	25.11.2017	09.12.2017	25.11.2017	13.01.2018
Practical Examination	29.11.2017 to 08.12.2017	29.11.2017 to 08.12.2017	29.11.2017 to 08.12.2017	-	-	-
Theory Examinations	11.12.2017 to 10.01.2018	11.12.2017 to 30.12.2017	11.12.2017 to 30.12.2017	13.12.2017 to 10.01.2018	12.12.2017 to 30.12.2017 (Arrears subjects)	15.01.2018 to 27.01.2018
Summer Project / Professional training	-	-	-	15.01.2018 to 24.03.2018 (Submission report to VTU by 24.04.2018)	-	17.07.2017 to 09.09.2017 [Professional training]
Commencement of EVEN Semester	01.02.2018	01.02.2018	01.02.2018	26.03.2018	08.01.2018	01.02.2018

- College Time Table shall be arranged for five and a half week days and planned to accommodate EDUSAT transmission slots, the schedule of which will be notified separately.
- The faculty/staff shall be available to undertake any work assigned by the University.
- If any of the above date is declared to be a holiday then the corresponding event will come into effect on the next working day.
- Notification regarding Calendar of Events relating to the conduct of University Examination will be issued by the Registrar (Evaluation) from time to time.

**Sd/-**  
Registrar, VTU

Figure 2.2.1.2. Academic Calendar of VTU ODD Semester 2017-18

**NEW HORIZON COLLEGE OF ENGINEERING**  
**CALENDAR OF EVENTS FOR ODD SEM (VII) SEMESTER (B.E) 2017-18**

Commencement: 07/08/2017 (for VII Semester)		Last Working Day: 25/11/2017 (for VII Semester)							Internal Tests/Submissions/Activities
MONTH	Week No.	MON	TUE	WED	THU	FRI	SAT	SUN	Events/Holidays
AUG	1	7	8	9	10	11	12	13	07 <sup>th</sup> - Commencement of Classes for VII Semester
	2	14	15	16	17	18	19	20	15 <sup>th</sup> - Independence Day 19 <sup>th</sup> - III Saturday Full Working Day
	3	21	22	23	24	25	26	27	25 <sup>th</sup> - Ganesh Chaturthi 26 <sup>th</sup> - IV Saturday Holiday
	4	28	29	30	31				
SEP	4	4	5	6	7	8	9	10	02 <sup>nd</sup> - Bakrid 09 <sup>th</sup> - PG Graduation Day
	6	11	12	13	14	15	16	17	
	7	18	19	20	21	22	23	24	19 <sup>th</sup> - Mahalaya Amavasya 22 <sup>nd</sup> & 23 <sup>rd</sup> - Sargam
	8	25	26	27	28	29	30		29 <sup>th</sup> - Ayudha Pooja 30 <sup>th</sup> - Vijavadasami
OCT	8							1	
	9	2	3	4	5	6	7	8	07 <sup>th</sup> - I Saturday Full Working Day
	10	9	10	11	12	13	14	15	
	11	16	17	18	19	20	21	22	18 <sup>th</sup> - Naraka Chaturdasi 19 <sup>th</sup> - Holiday 20 <sup>th</sup> - Balinadwami / Deenavali
	12	23	24	25	26	27	28	29	23 <sup>rd</sup> - 28 <sup>th</sup> - II Internal Audit
	13	30	31						
NOV	13			1	2	3	4	5	01 <sup>st</sup> - Karnataka Rajyotsava
	14	6	7	8	9	10	11	12	
	15	13	14	15	16	17	18	19	13 <sup>th</sup> - 15 <sup>th</sup> - III Internal Test
	16	20	21	22	23	24	25		25 <sup>th</sup> - Last Working Day for VII Semester

**Practical Exams:** 29/11/2017 to 08/12/2017 (VII Semester)  
**Theory Exams:** 11/12/2017 to 10/01/2018 (VII Semester)

**Note:**

- No Separate Circulars will be issued regarding Internal Tests/Submissions/Activities mentioned above.
- Workshops / Seminars / Conference / Guest Lectures to be included in the department calendar.
- The Industrial Visits and Guest Lectures shall be arranged on Weekends.

NOTE	
Commencement & Closing Dates	
Holidays	
Internal Tests	
Sargam Dates	
Internal Audit Dates	
Students' Feedback	
PG Graduation Day	

Figure 2.2.1.3. Calendar of Events of College ODD Semester 2017-18



**NEW HORIZON COLLEGE OF ENGINEERING**  
**CALENDAR OF EVENTS FOR ODD SEM (VII) SEMESTER (B.E) 2017-18**  
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**  
 Last Working Day: 25/11/2017 (for VII Semester)

MONTH	Week No.	MON	TUE	WED	THU	FRI	SAT	SUN	Events/Holidays	Tests/Submissions/Activities	Internal
AUG	1	7	8	9	10	11	12	13	07 <sup>th</sup> - Commencement of Classes for VII Semester		
	2	14	15	16	17	18	19	20	15 <sup>th</sup> - Independence Day 19 <sup>th</sup> - III Saturday Full Working Day	The same will be compensated on 26th August 2017	
	3	21	22	23	24	25	26	27	25 <sup>th</sup> - Ganesh Chaturthi 26 <sup>th</sup> - IV Saturday Holiday	21 <sup>st</sup> - 24 <sup>th</sup> - I Internal Audit	
	4	28	29	30	31						
SEP	4					1	2	3	02 <sup>nd</sup> - Bakrid	1st - Guest Lecture	
	5	4	5	6	7	8	9	10	09 <sup>th</sup> - PG Graduation Day		
	6	11	12	13	14	15	16	17		11 <sup>th</sup> - 13 <sup>th</sup> - I Internal Test	
	7	18	19	20	21	22	23	24	19 <sup>th</sup> - Mahalaya Amavasya 22 <sup>nd</sup> & 23 <sup>rd</sup> - Sargam		
	8	25	26	27	28	29	30		29 <sup>th</sup> - Ayudha Pooja 30 <sup>th</sup> - Vjiavadasami	25 <sup>th</sup> - 28 <sup>th</sup> - Students' Feedback	
OCT	8							1			
	9	2	3	4	5	6	7	8	07 <sup>th</sup> - I Saturday Full Working Day	The same will be compensated on 19th October, 2017	
	10	9	10	11	12	13	14	15		12 <sup>th</sup> - 14 <sup>th</sup> - II Internal Test	
	11	16	17	18	19	20	21	22	18 <sup>th</sup> - Naraka Chaturdasi 19 <sup>th</sup> - Holiday		
	12	23	24	25	26	27	28	29	20 <sup>th</sup> - Balinaduvami / Deenavali 28 <sup>th</sup> - Industrial Visit	23 <sup>rd</sup> - 28 <sup>th</sup> - II Internal Audit, 26 <sup>th</sup> - Guest Lecture	
	13	30	31								
NOV	13			1	2	3	4	5	01 <sup>st</sup> - Karnataka Rajyotsava		
	14	6	7	8	9	10	11	12			
	15	13	14	15	16	17	18	19		13 <sup>th</sup> - 15 <sup>th</sup> - III Internal Test	
	16	20	21	22	23	24	25		25 <sup>th</sup> - Last Working Day for VII Semester		


**NOTE**

Commencement & Closing Dates
Holidays
Internal Tests
Sargam Dates
Internal Audit Dates
Students' Feedback
PG Graduation Day

**Practical Exams:** 29/11/2017 to 08/12/2017 (VII Semester)  
**Theory Exams:** 11/12/2017 to 10/01/2018 (VII Semester)

**Note:**

- No Separate Circulars will be issued regarding Internal Tests/Submissions/Activities mentioned above.
- Workshops / Seminars / Conference / Guest Lectures to be included in the department calendar.
- The Industrial Visits and Guest Lectures shall be arranged on Weekends.

  
 HOD-EEE



  
 PRINCIPAL

Figure 2.2.1.4. Calendar of Events of the Department ODD Semester 2017-18

New Horizon College of Engineering, Bengaluru			
Department: EEE			
Academic Semester: 2016-17(Feb - May 17)			
Semester: VIII	Section: B	Sub Code: 10EE81	Subject: Electrical Design, Estimation and Costing (EDEC)
Course Instructor: LATHA.L.R		Contact Hours /week: 04	# of hours: 52
IA Marks: 25		Exam Marks : 100	Exam Hours: 03

Prerequisites if any:			
Subject Code	Subject Name	Description	Semester
10ELE 15/ 10ELE 25	Basic Electrical Engineering	Basics of Domestic wiring, Earthing and safety devices	1/2
10EE53	Transmission and Distribution	Components used for Transmission and distribution	5

Content delivery:	Chalk and Talk & Power Point Presentation
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COURSE SYLLABUS			
Unit No	Contents of Unit	Hrs	Co's
1	GENERAL PRINCIPLES OF ESTIMATION: Introduction to estimation & costing, Electrical Schedule, Catalogues, Market Survey and source selection, Recording of estimates, Determination of required quantity of material, Labour conditions, Determination of cost material and labour, Contingencies, Overhead charges, Profit, Purchase system, Purchase enquiry and selection of appropriate purchase mode, Comparative statement, Purchase orders, Payment of bills, Tender form, General idea about IE rule, Indian Electricity Act and major applicable I.E rules.	6	10EE81.1
2	RESIDENTIAL BUILDING ELECTRIFICATION: General rules guidelines for wiring of residential installation and positioning of equipments, Principles of circuit design in lighting and power circuits, Procedures for designing the circuits and deciding the number of circuits, Method of drawing single line diagram, Selection of type of wiring and rating of wires and cables, Load calculations and selection of size of conductor, Selection of rating of main switch,	7	10EE81.2

Figure 2.2.1.5. Lesson Plan Template

	distribution board, protective switchgear ELCB and MCB and wiring accessories, Earthing of residential Installation, Sequence to be followed for preparing estimate, Preparation of detailed estimates and costing of residential installation.		
3	ELECTRIFICATION OF COMMERCIAL INSTALLATION: Concept of commercial installation, Differentiate between electrification of residential and commercial installation, Fundamental considerations for planning of an electrical installation system for commercial building, Design considerations of electrical installation system for commercial building, Load calculation and selection of size of service connection and nature of supply, Deciding the size of the cables, bus bar and bus bar chambers, Mounting arrangements and positioning of switchboards, distribution boards main switch etc, Earthing of the electrical installation, Selection of type wire, wiring system and layout, Sequence to be followed to prepare estimate, Preparation of detailed estimate and costing of commercial installation.	7	10EE81.2
4	SERVICE CONNECTION, INSPECTION AND TESTING OF INSTALLATION: Concept of service connection, Types of service connection and their features, Method of installation of service connection, Estimates of underground and overhead service connections, Inspection of internal wiring installations, Inspection of new installations, Testing of installations, Testing of wiring installations, Reason for excess recording of energy consumption by energy meter.	6	10EE81.3
5	ELECTRICAL INSTALLATION FOR POWER CIRCUITS: Introduction, Important considerations regarding motor installation wiring, Determination of input power, Determination of input current to motors, Determination of rating of cables, determination of rating of fuse, Determination of size of Conduit, distribution Board main switch and starter.	6	10EE81.4
6 & 7	DESIGN AND ESTIMATION OF OVERHEAD TRANSMISSION & DISTRIBUTION LINES: Introduction, Typical AC electrical power system, Main components of overhead lines, Line supports, Factors governing height of pole, Conductor materials, Determination of size of conductor for overhead transmission line, Cross arms, Pole brackets and clamps, Guys and Stays, Conductors configuration spacing and clearances, Span lengths, Overhead line insulators, Insulator materials, Types of insulators, Lightning Arrestors, Phase	12	10EE81.5

Figure 2.2.1.5. Lesson Plan Template

	plates, Danger plates, Anti climbing devices, Bird guards, Beads of jumpers, Muffs, Points to be considered at the time of erection of overhead lines, Erection of supports, Setting of stays, Fixing of cross arms, Fixing of insulators, Conductor erection, Repairing and jointing of conductor, Dead end clamps, Positioning of conductors and attachment to insulators, Jumpers, Tee-offs, Earthing of transmission lines, Guarding of overhead lines, Clearances of conductor from ground, Spacing between conductors, Testing and commissioning of overhead distribution lines, Some important specifications.		
8	DESIGN AND ESTIMATION OF SUBSTATIONS: Introduction, Classification of substation, Indoor substations, Outdoor substations, Selection and location of site for substation, Main Electrical Connections, Graphical symbols for various types of apparatus and circuit elements on substation main connection diagram, Key diagram of typical substations, Equipment for substation and switchgear installations, Substation auxiliaries supply, Substation Earthing.	6	10EE81.6

**COURSE OUTCOMES:** At the end of the Course, the Student will be able to:

10EE81.1	Analyze estimation & costing, Necessity and procedures for estimation and costing, major applicable I.E rules and acts
10EE81.2	Understand general rules, guidelines for wiring of residential and commercial installation, preparation of detailed estimates and costing of residential and commercial installation
10EE81.3	Apply the procedure for service connection, design, estimation and costing of underground and overhead service connections, Inspection and testing of wiring installations
10EE81.4	Analyze the Important considerations regarding motor installation wiring, Design and Estimation of components required for Motor installation and costing the same
10EE81.5	Design overhead transmission & distribution lines. Typical AC electrical power system, Estimation & costing of transmission & distribution lines
10EE81.6	Design, estimate and costing of the components of substations and substation Earthing

Figure 2.2.1.5. Lesson Plan Template

Mapping of CO v/s PO:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
10EE81.1	3	3	2	2	1	1	2	1	2	2	1	3
10EE81.2	3	2	3	3	3	1	2	1	2	3	1	3
10EE81.3	3	3	3	3	3	1	2	1	2	3	1	3
10EE81.4	3	3	3	3	3	1	2	1	2	3	1	3
10EE81.5	3	3	3	3	3	1	2	1	2	3	1	3
10EE81.6	3	3	3	3	3	1	2	1	2	3	1	3

Correlation levels: 1-Slight (Low)      2-Moderate (Medium)      3-Substantial (High)

Mapping of CO v/s PSO:

	PSO1	PSO2
10EE81.1	3	3
10EE81.2	3	3
10EE81.3	3	3
10EE81.4	3	3
10EE81.5	3	3
10EE81.6	3	3

Gap in the syllabus	Design of UPS for Residential Installation
Topics to be covered beyond syllabus	<ol style="list-style-type: none"> <li>1. Displaying all the components on ppt.</li> <li>2. Explanation on type of wiring and equipments used for EDEC.</li> </ol>

Assessment Methodologies:

Sl. No.	Description	Type
1.	Student Assignment	Direct
2.	Internal assessment	Direct
3.	University exam	Direct
4.	Student feedback	Indirect
5.	Alumni feedback	Indirect
6.	Employers feedback	Indirect

Figure 2.2.1.5. Lesson Plan Template

**LESSON PLAN**

Lecture #	Module #	Topics	RBT Levels	Course Outcome Mapping	Planned Date	Actual Date	Faculty Sign	Remarks
1	1	Introduction to estimation & costing, Electrical Schedule, Catalogues, Market Survey and source selection, Recording of estimates	L1	10EEB1.1	13/2/17	13/2		-
2		Determination of required quantity of material, Labour conditions, Determination of cost material and labour	L1, L2		14/2/17	14/2		-
3		Contingencies, Overhead charges, Profit, Purchase system	L1, L2		14/2/17	14/2		-
4		Purchase enquiry and selection of appropriate purchase mode, Comparative statement	L1, L2		15/2/17	15/2		-
5		Purchase orders, Payment of bills, Tender form	L1, L2		20/2/17	20/2		-
6	2	General idea about IE rule, Indian Electricity Act and major applicable I.E rules. 6Hours	L1, L2	10EEB1.2	21/2/17	21/2		-
7		General rules guidelines for wiring of residential installation and positioning of equipment's, Principles of circuit design in lighting and power circuits	L1, L2		21/2/17	21/2		-
8		Procedures for designing the circuits and deciding the number of circuits, Method of drawing single line diagram	L2, L3, L4		22/2/17	22/2		-
9		Selection of type of wiring and rating of wires and cables, Load calculations and selection of size of conductor,	L2, L3, L4		27/2/17	27/2		-
10		Selection of rating of main switch	L2, L4		28/2/17	28/2		-
11		Distribution board, protective switchgear ELCB and MCB and wiring accessories	L1, L2		28/2/17	28/2		-

Figure 2.2.1.5. Lesson Plan Template

12	3	Earthing of residential Installation, Sequence to be followed for preparing estimate	L1, L2	10EE81.2	1/3/17	1/3		-
13		Preparation of detailed estimates and costing of residential installation.	L1, L2, L3, L4		6/3/17	9/3		classes were postponed due to Autonomous JA
14		Concept of commercial installation, Differentiate between electrification of residential and commercial installation	L1, L2		7/3/17	10/3		-
15		Fundamental considerations for planning of an electrical installation system for commercial building	L1, L2		7/3/17	10/3		-
16		Design considerations of electrical installation system for commercial building, Load calculation and selection of size of service connection and nature of supply	L2, L3, L4		8/3/17	11/3		-
17		Deciding the size of the cables, busbar and bus bar chambers, Mounting arrangements and positioning of switchboards, distribution boards main switch etc.	L2, L3, L4		14/3/17	14/3		-
18		Earthing of the electrical installation	L1, L2		14/3/17	14/3		-
19		Selection of type wire, wiring system and layout, Sequence to be followed to prepare estimate	L1, L2, L3		15/3/17	15/3		-
20		Preparation of detailed estimate and costing of commercial installation.	L1, L2, L3, L4		27/3/17	27/3		-
21		Concept of service connection, Types of service connection and their features	L1, L2		28/3/17	28/3		-
22		Method of installation of service connection, Estimates of underground and overhead service connections	L1, L2		28/3/17	28/3		-
23		Inspection of internal wiring installations, Inspection of new installations	L2, L3		3/4/17	3/4		-
24	Testing of installations	L5	4/4/17	4/4		-		

Figure 2.2.1.5. Lesson Plan Template

25	4	Testing of wiring installations	L5		4/4/17	4/4		-
26		Reason for excess recording of energy consumption by energy meter. 6Hours	L1, L2		5/4/17	5/4		-
27	5	Introduction, Important considerations regarding motor installation wiring	L1, L2	10EEB1.4	10/4/17	10/4		-
28		Determination of input power	L2, L3		11/4/17	11/4		-
29		Determination of input current to motors	L2, L3		11/4/17	11/4		-
30		Determination of rating of cables	L2, L3		12/4/17	12/4		-
31		Determination of rating of fuse	L2, L3		17/4/17	17/4		-
32		Determination of size of Condit, distribution Board main switch and starter.	L2, L3		18/4/17	18/4		-
33		Introduction, Typical AC electrical power system	L1, L2		18/4/17	18/4		-
34		Main components of overhead lines, Line supports	L1, L2		19/4/17	19/4		-
35		Factors governing height of pole, Conductor materials	L1, L2		2/5/17	2/5/17		-
36		Determination of size of conductor for overhead transmission line	L2, L3		2/5/17	2/5		-
37	6 & 7	Cross arms, Pole brackets and clamps	L2, L3	10EEB1.5	3/5/17	3/5		-
38		Guys and Stays, Conductors configuration spacing and clearances, Span lengths	L2, L3		8/5/17	8/5		-

Figure 2.2.1.5. Lesson Plan Template



39	8	Overhead line insulators, Insulator materials, Types of insulators, Lightning Arrestors, Phase plates, Danger plates	L1, L2	10EE81.6	9/5/17	9/5		-
40		Anti-climbing devices, Bird guards, Beads of jumpers, Muffs, Points to be considered at the time of erection of overhead lines	L1, L2		9/5/17	9/5		-
41		Erection of supports, Setting of stays, Fixing of cross arms, Fixing of insulators, Conductor erection	L2, L3		10/5/17	10/5		-
42		Repairing and jointing of conductor, Dead end clamps, Positioning of conductors and attachment to insulators	L2, L3		15/5/17	15/5		-
43		Jumpers, Tee-offs, Earthing of transmission lines	L2, L3		16/5/17	16/5		-
44		Guarding of overhead lines, Clearances of conductor from ground	L2, L3		16/5/17	16/5		-
45		Spacing between conductors, Testing and commissioning of overhead distribution lines	L2, L3		17/5/17	22/5		Swaped due to Lab external duty
46		Some important specifications	L1, L2		22/5/17	23/5		-
47	8	Introduction, Classification of substation	L1, L2	10EE81.6	23/5/17	23/5		-
48		Indoor substations, Outdoor substations, Selection and location of site for substation	L1, L2		23/5/17	24/5		-
49		Main Electrical Connections, Graphical symbols for various types of apparatus and circuit elements on substation main connection diagram	L1, L2		24/5/17	25/5		3rd IA Postponed & classes prepoued
50		Key diagram of typical substations	L2, L3		29/5/17	25/5		-
51		Equipment for substation and switch gear installations	L2, L3		30/5/17	26/5		-
52		Substation auxiliaries supply, Substation Earthing	L2, L3		30/5/17	26/5		-

Figure 2.2.1.5. Lesson Plan Template

53		Revision			31/5/17	31/5		-
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\*L1 - Remembering; L2 - Understanding; L3 - Applying; L4 - Analysing; L5 - Evaluating; L6 - Creating

#### TEXT BOOK:

1. Electrical Installation Estimating & Costing, J.B.Gupta, VIII Edition S.K. Katria & Sons NewDelhi

#### REFERENCE BOOKS:

1. Electrical Design Estimating and Costing, K.B.Raina S.K.Bhattacharya, New Age International.
2. Electrical Wiring Estimating and Costing, Uppal, Khanna Publishers Delhi
3. I.E.Rules and Act Manuals.

#### Sample Questions:

Question No.	
Q1 (a)	What are the essentials of estimation and costing?
Q1 (b)	Explain different modes of tendering
Q2 (a)	What are the General rules to be followed for internal wiring?
Q2 (b)	Obtain the complete estimate of any given layout of domestic building with costing.
Q3 (a)	What are the design considerations of electrical installation system for commercial building?
Q3 (b)	Obtain the complete estimate of any given layout of commercial building with costing.
Q4 (a)	Explain points to be checked while carrying out inspection of wiring installation.
Q4 (b)	Find the materials required for single phase overhead service line of house located 10 meters away from pole with total load of 2800 watts.
Q5 (a)	List any 8 important factors to be considered regarding motor installation wiring.
Q5 (b)	A single phase 3hp, 230V, 50Hz motor is to be installed in a workshop. Assuming the efficiency of the motor to be 85% and power factor 0.8, calculate the size of

Figure 2.2.1.5. Lesson Plan Template


	the conductor to be used.
Q6 (a)	Draw and explain typical ac power supply system.
Q6 (b)	Estimate the quantity of materials required for adding 132kV bay at 132kV grid substation.
Q7 (a)	Name the various types of insulators used in overhead lines and mention their fields of application.
Q7 (b)	Write a note on conductor erection.
Q8 (a)	Explain the classification of substation.
Q8 (b)	Estimate the materials required for 11kV overhead line of 3km length. Consider span to be 75 meters. Draw a neat sketch of one span of the line showing various components there on.

Assessment rubrics that is going to be adopted for direct attainment is depicted in below table

Level of Achievement	Elaboration on Course Grading Description	Bench Mark Set (Out of 25)
Excellent (A)	The Student's performance is outstanding in almost all the intended course learning outcomes	21 to 25
Good (B)	The student's performance is good in most of the intended course learning outcomes.	15 to 20
Marginal (C)	The student's performance is barely satisfactory. It marginally meets the intended course learning outcomes	13 & 14
Fail (F)	The Students performance is inadequate. Student fails to meet many of the intended course learning outcomes	Less than 13

NOTE: Have different Assessment pattern for tests, assignments, quizzes etc.

  
Staff In-charge

  
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Figure 2.2.1.5. Lesson Plan Template

### Instructional Methods and Pedagogies

Department follows Outcome Based Education (OBE) approach. Faculties use innovative teaching methods to cater for the needs of OBE. The Pedagogies followed by the Department is as shown in Figure 2.2.1.6.

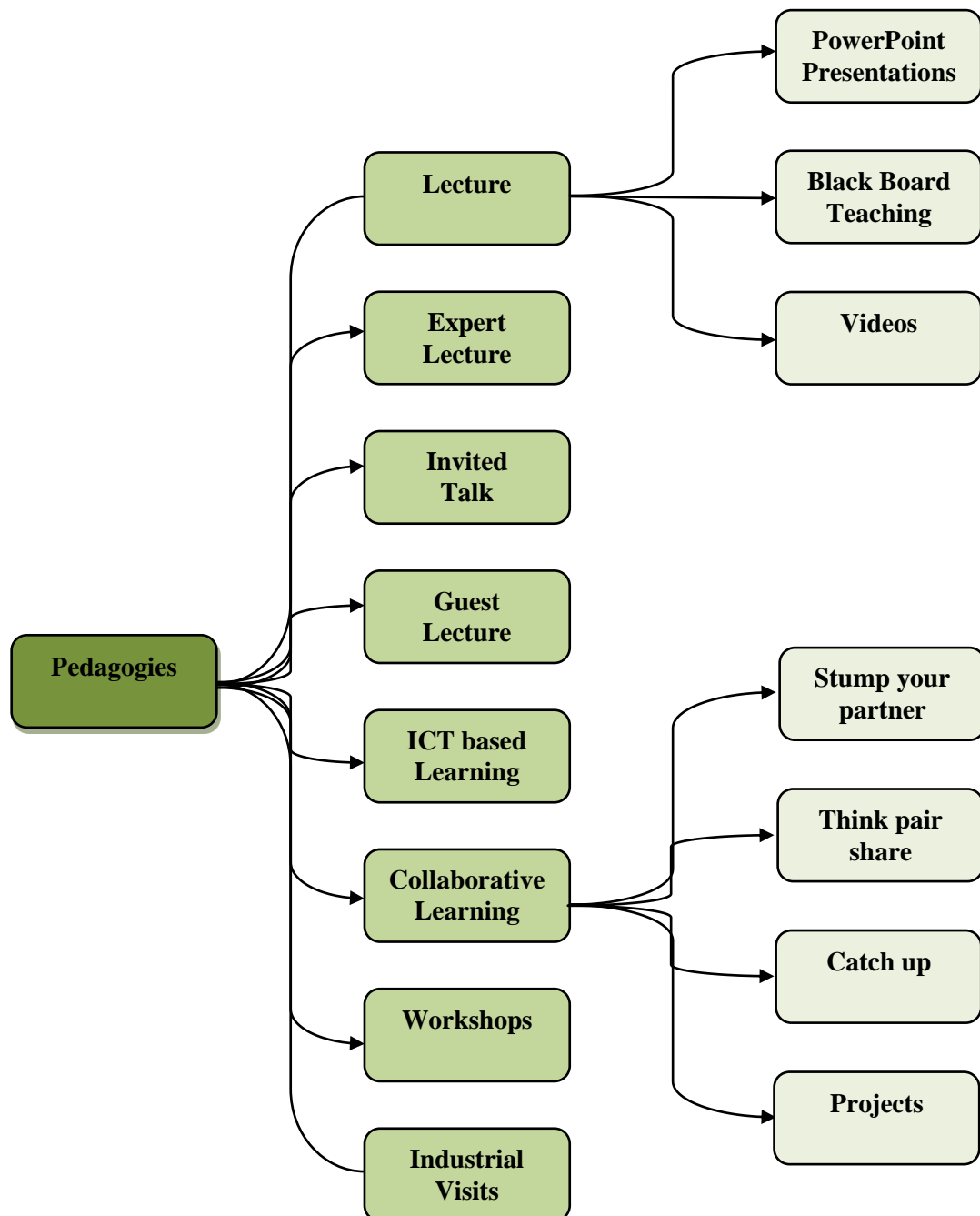


Figure 2.2.1.6. Pedagogies

### **Collaborative Learning**

- Collaborative learning is based on the view that knowledge is a social construct.
- Collaborative learning can occur peer-to-peer or in larger groups.
- This often occurs in a class session after students are introduced to course material through readings or videos before class, and/or through instructor lectures.
- The benefits of collaborative learning include:
  - (i) Development of higher-level thinking, oral communication, self-management and leadership skills.
  - (ii) Promotion of student-faculty interaction.
  - (iii) Increase in student retention, self-esteem, and responsibility.
  - (iv) Exposure to and an increase in understanding of diverse perspectives.
  - (v) Preparation for real life social and employment situations

The students are encouraged to work as a team to improve their knowledge by sharing of ideas.

- **Stump your partner**
  - Students take a minute to create a challenging question based on the lecture content up to that point. Students pose the question to the person sitting next to them.
  - These questions can be reviewed to gauge students' understanding.
- **Think-pair-share**
  - The course coordinator poses a question that demands analysis and evaluation.
  - Students take a few minutes to think through an appropriate response.
  - Students turn to a partner (or small groups) and share their responses. Student responses are shared within larger teams or with the entire class during a follow-up discussion.
- **Catch-up**
  - The Course coordinator stops at a transition time during the lecture for the students to turn to a partner or work in small groups to ask clarifying questions.
  - After a few minutes, open the floor to a few questions.

### ICT Supported Learning

- Students are advised to register for MOOCs (Massive Open Online Courses) and watch NPTEL, VTU e-Learning, edX and SWAYAM videos and the students are encouraged to write assignments. In classroom students are encouraged to give presentations to improve their basic knowledge, communication skills in the respective subject.
- Simulation software like PSpice, MATLAB and AutoCAD are used for effective learning.

### Real World Examples

Students are exposed to real world problems and encouraged to do real world projects. Table 2.2.1.1. gives the details of real-world projects that have been carried out by the students of the Department.

**Table 2.2.1.1. Real World Examples**

For Academic Year 2016-17			
Sl. No	Name and USN of Team Leader	Title of the project	Outcome
1	Avinash T.H 1NH13EE008	Modernisation of Indian Agriculture using Wireless Sensor Networks with Crop Protection	POs:1,3, 4,5,6, 7,8,9,10,11,12 PSO1
2	Dipesh Bhushan 1NH13EE717	Variable Electronic Speed Governor (VESG)	POs:1,3, 4,5,6,7,8, 9,10,11,12 PSO1
3	Akash V K 1NH13E002	IoT based Global Industrial Process Monitoring using Raspberry – Pi	POs:1,3,5,6,7,8, 9,10,11 PSO1
4	Deep Chakraborty 1NH12EE716	Smart System for Power Saving using PWM Technology	POs:1,2,3, 4,5,6 ,7,8,9,10,11,12 PSO1
For Academic Year 2015-16			
1	Roshni Z Sholapurawala, 1NH12EE042	Design and development of impulse generator for 90 kV, 1.2 $\mu$ s/50 $\mu$ s lightning impulse	POs:1,3,4,5, 6,7,8,9,10,11 PSO1
2	Prasanna R 1NH12EE035	Green Energy-Hybrid renewable power generation (Wind-Solar)	POs:1,3,4,5 ,6,7,8,9,10,11 PSO1, PSO2
3	Abhishek N M V 1NH12EE003	Design and implementation of pedal powered generator.	POs:1,3,4,5 ,6,7,8,9,10,11 PSO1, PSO2
4	Nikitha V S 1NH12EE731	Microcontroller based robotic arm: operational to gesture	POs:1,3,4,5 ,6,7,8,9,10,11 PSO1

5	Nitesh Kumar 1NH12EE733	Modelling and Implementation of Pico-Hydro Electric Generating Set	POs:1,3,4,5, 6,7,8,9,10,11 PSO1, PSO2
<b>For Academic Year 2014-15</b>			
1	Gayasuddin 1NH11EE013	Multistage water Pumping by connecting cascade of low HP motors using solar power with automatic water level controller	POs:1,3, ,5,6 ,7,8,9,10,11 PSO1 PSO2
2	Divya M 1NH11EE011	Smart Home Energy Management System	POs:1,3,4,5, 6,7,8,9,10,11 PSO1 PSO2
3	Gaurav Mishra 1NH11EE742	Automatic power factor compensation for industrial power to minimize penalty	POs:1,3,4,5 ,6,7,8,9,10,11 PSO1
4	Ashok Reddy 1NH12EE415	Priority based automatic load sharing	POs:1,3,4,5 ,6,7,8,9,10,11 PSO1

### Conference

- Department organizes National level conferences on recent technologies in Electrical and Electronics to enrich the knowledge of students and researchers.
- These conferences provide a platform for students, researchers and faculty members to share their ideas and innovations.
- It also helps the attendees to interact with experts to enhance their ideas in the respective domain. Table 2.2.1.2. lists the details of National Conferences organized by the Department during the respective academic years.

**Table 2.2.1.2. National Conference/Tech fest/seminar/ Awareness campaign details**

<b>For Academic Year 2017-18</b>				
Sl.No	Title	Date	No. of Participants/ attendees	Outcome
1	Greenovate – Idea Presentation on Energy Conservation	13.03.2018	40	1
2	Energy Conservation Awareness Programme	09.03.2018	30	1
<b>For Academic Year 2016-17</b>				
1	TECHORIZON 2017 – A Project Exhibition	27/05/2017	96	POs: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 PSOs:1,2
2	National Conference on Recent Technologies In Electrical and Electronics - TECHXELLECE - 2017	19/04/2017	90	POs: 1,2,3, 4, 5, 8, 9, 10, 11,12 PSOs:1,2

3	ELECTROHORIZON'17 - National Technical FEST	13/04/2017	90	POs: 1,2,3, 4, 5, 8, 9, 10, 11,12 PSOs:1,2
4	Energy Conservation Awareness Program	20/02/2017 to 28/02/2017	80	POs: 1,2,3,4,5,6,7,8, 9,10,11,12 PSOs:1,2
<b>For Academic Year 2015-16</b>				
1	TECHORIZON 2016 - A Project Exhibition	21/05/2016	96	POs: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 PSOs:1,2
2	ELECTROGREEN 2016- National Tech Fest	27/02/2016	85	POs: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 PSOs:1,2
3	Energy Conservation Awareness Programme	08/02/2016 to 13/02/2016	80	POs: 1,2,3,4,5,6,7,8, 9,10,11,12 PSOs:1,2

**Workshop:**

- Department organizes at least four workshops per academic year to facilitate the students in having a hands on training in a specific domain. Table 2.2.1.3. gives the details of the workshops organised by the Department.
- These workshops enable students in learning and realizing new and latest technologies.
- The students get a platform to exhibit their ideas and implement them in reality.

**Table 2.2.1.3. Workshop Details**

<b>For Academic Year 2017-18</b>					
Sl.No	Workshop Topic	Date	No. of participants	No. of Days	Outcome
1	Workshop on Create your own design using Adobe Tools	16.03.2018	30	1	POs:1,2,3,4,5,7,9,10,11,12 PSOs:1
2	Hands on Training in PLC and SCADA	02.03.2018 to 03.03.2018	36	2	POs:1,2,3,4,5,7,9,10,11,12 PSOs:1
3	Workshop on Electrical AutoCAD	6/11/2017	60	1	POs:1,2,3,4,5,9,10,12 PSOs:1,2
4	Workshop on Android for Electrical Engineers	13/10/2017 to 14/10/2017	45	2	POs:1,2,3,4,5,9,10,11,12 PSOs:1,2
5	Workshop on Automation Using Mobile APP	06/10/2017 to 07/10/2017	50	2	POs:1,2,3,4,5,9,10,11,12 PSOs:1,2
6	Workshop on E- Digital Marketing	15/09/2017 to 16/09/2017	55	2	POs:1,2, 5,9,10,11,12 PSOs:1



For Academic Year 2016-17					
1	Workshop on REVIT-MEP & PRIMAVERA	30/03/2017	40	1	POs:1,2,3,4,5,9,10,12 PSO:1,2
2	Hands on Training in Solar Energy Harnessing	24/03/2017	60	1	POs:1,2,3,4,5,9,10,11,12 PSO:1,2
3	Workshop on Industrial Automation	09/3/2017	45	1	POs:1,2,3,4,5,9,10,11,12 PSO:1,2
4	Workshop on PLC Automation	02/03/2017	45	1	POs:1,2,3,4,5,7,9,10,11,12 PSO:1
5	Workshop on Electric Circuit Drafting Using Electrical AutoCAD	01/02/2017	50	1	POs:1,5,6,9,10,11,12 PSO:1,2
6	Hands on Training in Aurdino	23/10/2016	55	1	POs:1,2,3,4,5,9,10,12 PSO:1,2
For Academic Year 2015-16					
1	Technical Training on PSIM	11/04/2016	55	1	POs:1,2,3,4,5,9,10,12 PSO:1,2
2	Technical Workshop on PLC/ SCADA	17/02/2016	45	1	POs:1,2,3,4,5,9,10,11,12 PSO:1,2
3	Workshop on ETAP-Electrical Power System Analysis Simulation Software	10/10/2015	55	1	POs:1,2,3,4,5,9,10,11,12 PSO:1,2
4	Introduction to Maple Sim Software	07/11/2015	50	1	POs:1,2,3,4,5,7,9,10,11,12 PSO:1
5	REC Mechanism and RE Integration	04/11/15	60	1	POs:1,5,6,9,10,11,12 PSO:1,2

### Methodology to identify bright students

The bright students are identified from their participation in classroom discussion, performance in the assessment tests and participation in classroom seminars, questioning ability and University result analysis. Table 2.2.1.4. list some of the bright students.

- The bright students are encouraged to participate in symposia, workshops and seminars to gain knowledge on the latest developments.
- The students are encouraged to take up industry based projects in the advanced topics under the guidance of the faculty members.
- They are provided with the guidance about patents, project management and prototype building.
- Bright students are encouraged to lead the students' association team which organizes various activities viz. paper presentation, poster presentation, lecture series etc.

Table 2.2.1.4. List of Bright students

Sl No.	Name	USN	Batch
1	Rashmi Kadam	1NH14EE060	2014-18
2	Sanjana S Patil	1NH14EE067	2014-18
3	Shalini P	1NH14EE071	2014-18
4	Kavitha O	1NH14EE744	2014-18
5	Monisha S	1NH13EE029	2013-17
6	Sahithi N	1NH13EE049	2013-17
7	Varun Mathew Mittal	1NH13EE756	2013-17
8	LipikaMitra	1NH13EE021	2013-17
9	Roshni Sholapur Wala	1NH12EE042	2012-16
10	Dhiraj Prabhakar	1NH12EE020	2012-16
11	Baiju B Nambiar	1NH12EE713	2012-16
12	Vinitha A	1NH12EE062	2012-16
13	Yamini S	1NH11EE063	2011-15
14	Shashank Kumar	1NH11EE055	2011-15
15	Suman Choudary	1NH11EE751	2011-15
16	C Chandrakala	1NH11EE713	2011-15

The performance of a bright student - Yamini S is shown in Figure. 2.2.1.7.

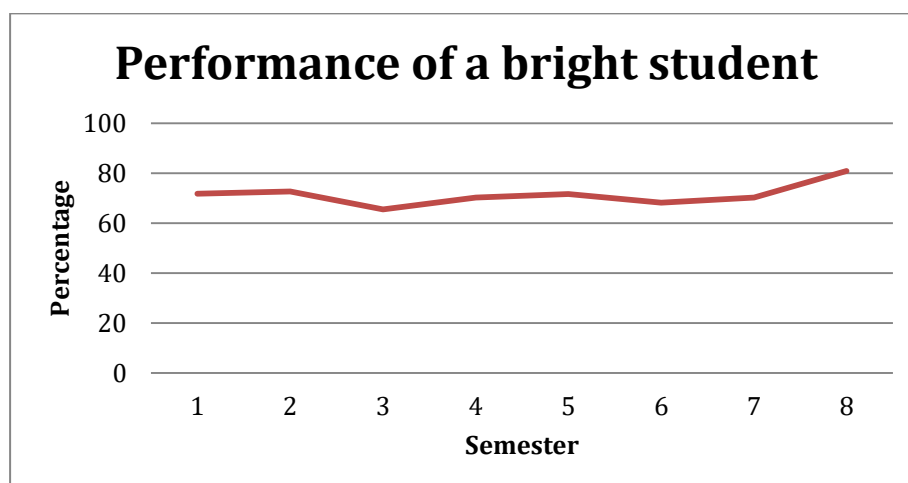


Figure 2.2.1.7. Performance of a bright student (Yamini S)

**Methodology to identify weak students:**

The weak students are identified from their participation in classroom discussion, performance in the assessment tests (less than 15 out of 25) and University result analysis. The Table 2.2.1.5. lists some of the weak students.

- Department arranges remedial lectures for weak students in all the courses.
- Teacher informs the parents regarding improvement in the performance of their ward on regular basis.
- Attempts are made by the teachers to give personal attention to these students.
- Specially developed question banks and assignments are given.
- Participative and progressive weak students are given chance to improve team work to motivate and appreciate their efforts.

**Table 2.2.1.5. List of weak students**

Sl. No.	Name	USN	Batch
1	Ageesh A	1NH14EE005	2014-18
2	Balaraj D B	1NH14EE742	2014-18
3	Sunil Kumar A	1NH14EE077	2014-18
4	Indranil Das	1NH14EE711	2014-18
5	Abhijeet Sinha	1NH13EE700	2013-17
6	Pooja Kumari	1NH13EE730	2013-17
7	Jai Prakash P M	1NH14EE417	2013-17
8	Sion K Sunny	1NH12EE053	2012-16
9	S Prashanth	1NH12EE743	2012-16
10	Anirban Mondal	1NH12EE006	2012-16
11	Anil Kumar Raja.k	1NH11EE703	2011-15
12	Manu C	1NH11EE721	2011-15
13	Annu Kumari	1NH11EE006	2011-15

The performance of weak student is shown in Figure. 2.2.1.8.

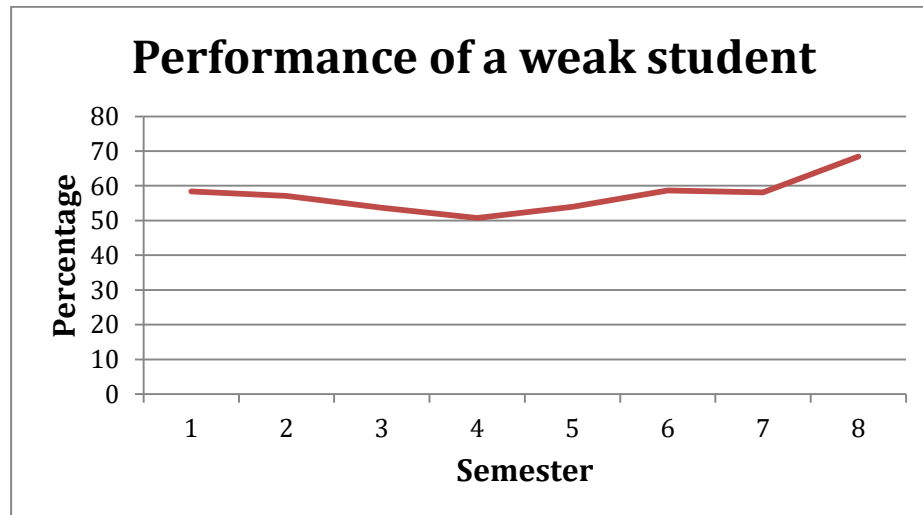


Figure 2.2.1.8. Performance of a weak student (Sion K Sunny)

### Classroom Teaching

Each classroom is spacious and equipped with black board and audio visual aids to create an better ambience for effective teaching learning environment.

Each lecture is scheduled for one hour. During the lecture, faculties take efforts to keep students engaged by reviewing and asking questions on previous lecture and interactively deliver the lecture planned for the day. At the end of the lecture, students are encouraged to summarize, ask doubts from the content taught.

### Conduct of Laboratory Experiments

The laboratories are equipped with necessary infrastructure to facilitate effective conduction of the experiments in the laboratory.

For the laboratory sessions, students are asked to bring lab manual, observation book and record book. Students are advised to study the theory behind the experiment and the procedure to conduct the experiment before the lab session. Students conduct the experiments and record the observations in the observation book. After completion of the experiment students are encouraged to discuss the learning from the experiment.

### Continuous Assessment in the Laboratory

- Continuous evaluation is done by the faculty in every lab session for 10 marks based on rubrics as shown in Table 2.2.1.6. The average marks of all session will be considered for awarding final internal assessment.
- Figure 2.2.1.9 shows the process for conduction of internal lab examination and finalising the marks. Table 2.2.1.7 lists the rubrics for assessment in Internal Lab Examination.

**Table 2.2.1.6. Rubrics used for continuous evaluation in every lab session**

Parameters	Allocated Marks	High	Medium	Low
<b>Conduction</b>	2	Given circuit rigged up, got output/Program executed with output.	Given circuit rigged up with partial output/Given program was partially executed in the lab session.	Given circuit not rigged up/Given program was not executed in the lab session.
		2 Marks	1 Mark	0 Mark
<b>Viva Voce</b>	2	Student answered all the viva voce questions	Student Answered only a few viva voce questions	Student did not answer any viva voce question
		2 Marks	1 Mark	0 Mark
<b>Record writing</b>	6	completed record was submitted	Record was submitted but incomplete	Record was not submitted in the lab session
		4 - 6 Marks	1 - 3 Marks	0 Mark

**Table 2.2.1.7. Rubrics used for Evaluation of Internal Lab Examination**

Parameters	Allocated Marks	High	Medium	Low
<b>Write up</b>	5	Student was able to design and draw the circuit diagram with expected output/Program/algorithm written correctly.	Student was able to draw the circuit diagram but does not design/program partially known.	Student was unable to draw circuit diagram/program/algorithm not known.
		3 - 5 Marks	1 - 2 Marks	0 Mark
<b>Execution</b>	5	Student was able to conduct the given experiment with output.	Student was partially able to conduct the given experiment.	Student was not able to conduct given experiment.
		3 - 5 Marks	1 - 2 Marks	0 Mark
<b>Viva Voce</b>	5	Student answered all the questions.	Student answered only few question	Student did not answer any question
		3 - 5 Marks	1 - 2 Marks	0 Mark

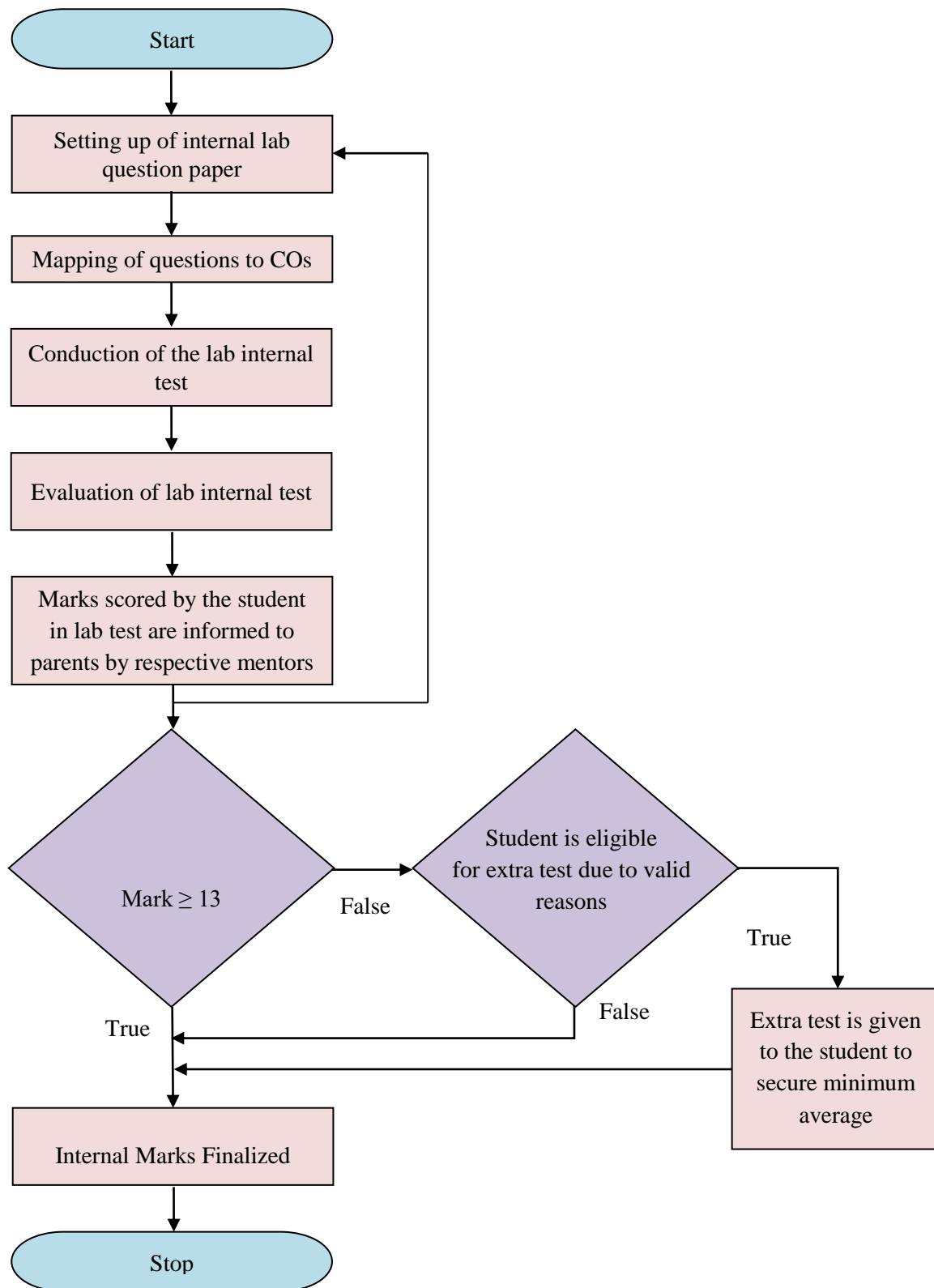


Figure 2.2.1.9. Flowchart for the conduction of Internal Lab Examination

**Student Feedback of Teaching Learning Process and actions taken**

- Faculty Feedback Performance for every course is assessed from students with various parameters as defined by the Institution. Figure 2.2.1.10. shows a sample copy of the feedback form.
- Some of the parameters are:
  - Clarity in explaining the subject
  - Course explained was easy to understand
  - Faculty answers to your queries
  - Coverage of topic/course is on time
  - The concepts were explained with example and others
  - Content quality is relevant and useful

New Horizon College of Engineering																			
STUDENT FEEDBACK February 2016																			
Faculty Name <b>Dr. Mahesh K</b>										DEPARTMENT <b>EEE</b>									
Dear faculty, we have consolidated the student feedback for the February, 2016 and find below the feedback received on the subject taught by you. We have advise you to discuss your ratings with HOD/immediate supervisor for futher improvement.																			
SUB.CODE	a	b	c	d	e	f	g	h	i	j	k	l	m	n	52	53	54	55	Avg. Score
10EEE (n=33)	4.24	4.24	4.21	4.15	4.18	4.21	4.18	4.18	4.12	4.21	4.30	4.21	4.21	4.15	4.24	4.21	4.27	4.15	4.21
Overall Rating	4.24	4.24	4.21	4.15	4.18	4.21	4.18	4.18	4.12	4.21	4.30	4.21	4.21	4.15	4.24	4.21	4.27	4.15	4.21
Earlier Overall Rating																			

PARAMETERS	
a	Clarity in explaining the subject
b	Subject explained was easy to understand
c	Content quality is relevant and useful
d	Faculty answers to your queries/questions
e	Coverage of topic/subject is on time
f	The concepts were explained with examples
g	Faculty preparation for the class
h	Faculty guidance for preparation of seminar, conference and exam
i	Punctuality of the faculty for the class
j	Communicates distinctly and effectively
k	Treats students with respect and courtesy
l	Control of the classroom by faculty
m	Relevance of assignments to the subject
n	Overall satisfaction

SCALE USED	
1	POOR
2	FAIR
3	GOOD
4	VERY GOOD
5	EXCELLENT
6	NA

n = No. of Responses
----------------------

PARAMETERS	
52	Discussion of any interesting topic beyond the syllabus but relevant to the field
53	Usefulness of the question paper(s) of internal test(s) in your preparation for the examination
54	Helpfulness of the online course material (question bank, etc...) and assignments for you to understand and prepare for tests and examination
55	Accessibility and availability after the class hours in the college
Avg. Score	Average score of a to m

Figure 2.2.1.10. Sample Student Feedback form

## 2.2.2. Quality of Internal Semester Question Papers, Assignments and Evaluation

*(Mention the initiatives, implementation details and analysis of learning levels related to quality of semester question papers, assignments and evaluation)*

Internal Assessment marks set as per VTU regulations is 25 for theory and lab subjects, 50 for seminar while it is 100 for project. The internal assessment marks for theory is based on three tests conducted as per the calendar of events. Program Coordinator along with test coordinator is responsible for the conduction of the test. The time table for the same will be announced 2-3 days prior to the commencement of the test. The department has a Scrutinizing Committee, comprising of HoD and two senior faculty members to check the quality of the question paper, RBT levels and COs compliance.

### Process for Internal Assessment Test Question Paper Setting:

- The course co-ordinator sets the question paper for the Internal Assessment.
- The course co-ordinator ensures to frame questions based on various RBT levels and are mapped to the Course Outcomes (COs) to assess the students at various RBT levels.

### Procedure for Conduction and Evaluation of Internal Assessment Test:

- The time table for the Internal Assessment Test will be announced in the notice board 2-3 days prior to the commencement of the test.
- Department provides blue books for writing the three internal assessment tests and shall be maintained by the Department for at least one year after the announcement of results and available for verification.
- The students write the test in their allotted seats as per their USNs in a test hall, under the invigilation of a faculty member.
- The scheme of valuation for the question paper is prepared by the course co-ordinator ensuring appropriate distribution of marks for fair valuation.



- The course co-ordinator values the blue books adhering to the scheme of valuation.
- The faculties after every internal assessment test they explain the solution of the questions in the class which will enable them to perform well in the final examination.
- The average of the best two of three internals is the final internal assessment marks.
- For any genuine reasons, if a student was unable to perform well in the given three internal assessment tests, improvement test is given to him/her.

#### Process to ensure questions from outcomes/learning levels

- The course co-ordinator ensures that the internal assessment questions are framed based on various RBT levels and are mapped to the COs.
- A question paper template is shown in Figure 2.2.2.1.
- The course coordinator decides the number of questions and marks allotted for each question.
- The course coordinator submits the question paper to the scrutinizing committee and the committee checks the quality and RBT level and CO compliance and suggests any changes, if required.

<b>NEW HORIZON COLLEGE OF ENGINEERING, BANGALORE</b> (Affiliated to VTU, Accredited by NAAC with Grade 'A') Department of Electrical and Electronics Engineering <b>INTERNAL ASSESSMENT- III (Odd Sem-2017-18)</b>				
<b>Academic Year: 2017-18</b>		<b>Sem:</b>		
<b>Course Name:</b>		<b>Course Code:</b>		
<b>Date:</b>		<b>Max. Marks: 25</b>		
Sl. No.	Questions	Marks	RBT Level	Course Outcome(s)
1.				
2.				
3.				
4.				
5.				

Figure. 2.2.2.1. Internal Test Question Paper Template

**Assignments**

- The course coordinator announces assignment topic, submission dates and communicates in the class.
- Assignments are designed in such a way to promote self learning from various sources.
- Assignments are evaluated and feedback is given to the students to improve their learning and appreciate their efforts.

**Procedure for final Internal Marks**

- The IA marks will be sent well in advance to the university before the commencement of theory examination. The IA test conduction procedure for theory is illustrated through flowchart in Figure 2.2.2.2.

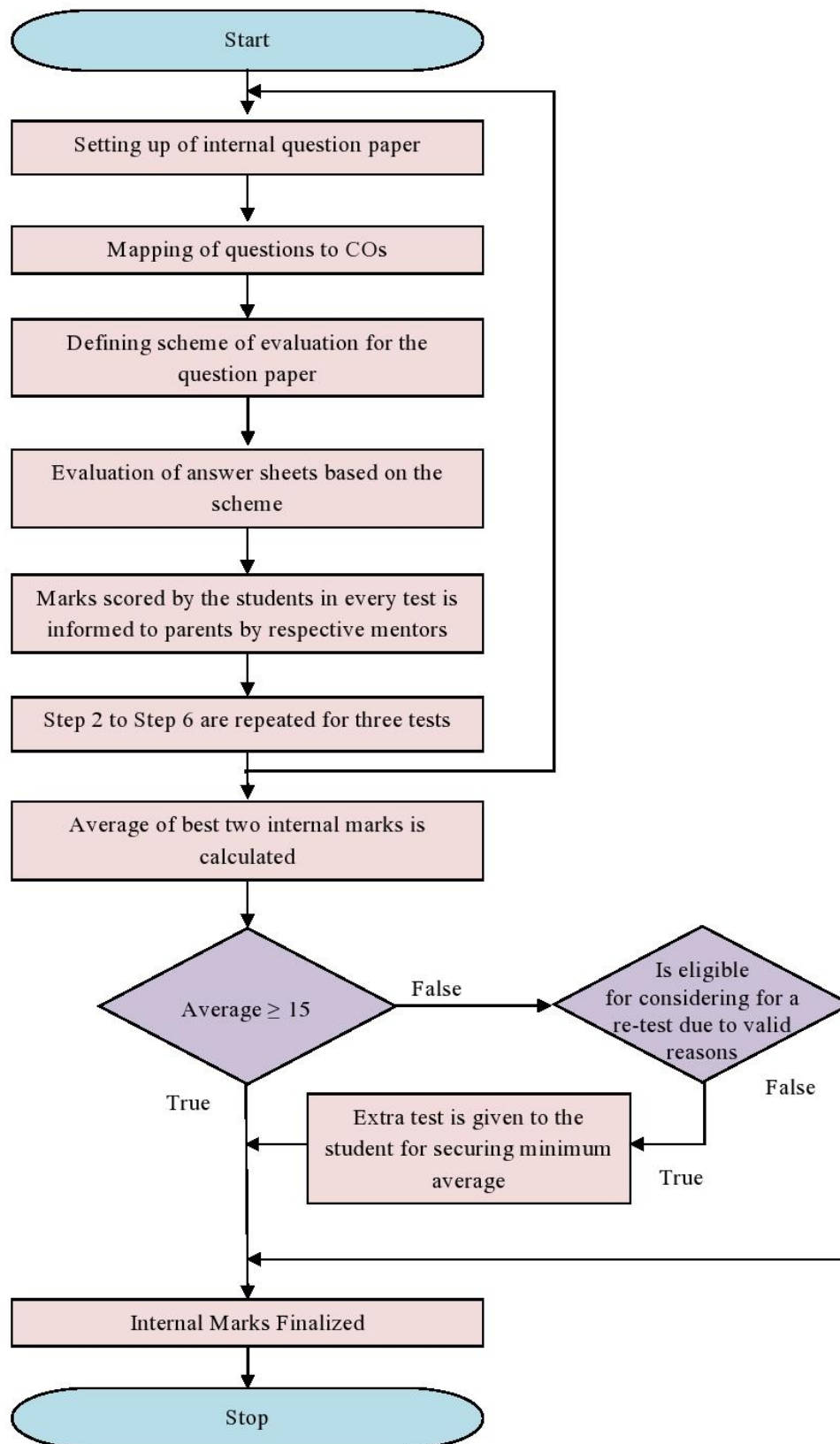


Figure 2.2.2.2: Flowchart for the conduction of Internal Theory Test

### 2.2.3. Quality of Student Projects

*(Quality of the project is measured in terms of consideration to factors including, but not limited to, environment, safety, ethics, cost, type (application, product, research, review etc.) and standards. Processes related to project identification, allotment, continuous monitoring, evaluation including demonstration of working prototypes and enhancing the relevance of projects. Mention Implementation details including details of POs and PSOs addressed through the projects with justification)*

The students carry out their project work in the VIII semester. The Department follows standard procedures to ensure that students do a quality project. The students select a project in line with their area of interest. Students are encouraged to do project work on real world examples. Appropriate methodologies are in place to monitor the Project work continuously till the end of the project. At the end of the project, students are encouraged to publish paper in Journals and conferences and apply for patent.

#### **Project Group:**

- Students are allowed to form groups consisting of minimum two or maximum of four members.
- If the students are not able to form the group, then the project coordinator will help them to form the group.

#### **Project Identification and Guide Allocation Process:**

- The project coordinator instructs the students to identify the project titles and submit the synopsis adhering to the timelines decided by the HoD.
- Some of the areas identified by the project coordinator are:
  - Industrial Automation
  - Power System Protection
  - Power System Operation and Control
  - High Voltage Engineering
  - Electrical machines
  - Control systems
  - Renewable energy
  - Power Electronic Drives

- The project coordinator classifies the projects into application, product, research and review and maps the POs and PSOs considering the factors such as environment, safety, ethics, cost and standards.
- Based on the students' chosen area, faculty competency and relevant area of interest is allotted as a guide.
- Students can choose/come out with a problem for the execution of the project. If they are not able to come out with the problem, then the faculty member will give a problem to the students for execution of the project work.
- If the students are doing project at industry, then they need to consult with internal as well as external guide towards implementation of project.

#### **Continuous Monitoring**

- The project guide / program coordinator will give suggestions towards the improvements of the synopsis.
- Based on inputs (suggestions from guide), students have to start their project work.
- All the students must report to their internal guides on weekly basis regarding the progress of their project work.
- Students should give a presentation to the Project Review Committee at the end of every month (February, March, April) as per the schedule given in Table 2.2.3.1. The committee gives suggestions at the end of the presentation to improve the quality of the work and evaluates the projects based on the project rubrics.
- Three project internal reviews are conducted for each batch. After the three reviews, instructions are given to write the Project Report as per the guidelines prescribed by the VTU.

**Table 2.2.3.1. Project Execution Schedule**

<b>Review</b>	<b>Description</b>	<b>Date</b>
<b>Review1</b>	Project Synopsis/Proposal Evaluation	II week of January
<b>Review2</b>	Mid-Term Project Evaluation	IV week of February
<b>Review3</b>	End Semester Project Evaluation	IV week of March
<b>Review4</b>	Project Report Evaluation	IV week of April
<b>Review5</b>	Evaluation by Guide	I week of May
<b>External Viva</b>		I-II week of June

### Rubrics for Project Internal Evaluation

- Tables 2.2.3.2 to Table 2.2.3.7 shows the rubrics used for internal evaluation of the final semester academic project carried out by students.

**Table 2.2.3.2. Rubrics for Final Semester Project Internal Evaluation**

Rubric	Agenda	Marks
<b>Rubric R1</b>	Project Synopsis/Proposal Evaluation	50
<b>Rubric R2</b>	Mid-Term Project Evaluation	50
<b>Rubric R3</b>	End Semester Project Evaluation	50
<b>Rubric R4</b>	Project Report Evaluation	50
<b>Rubric R5</b>	Evaluation by guide	50
<b>Overall Weightage</b>		Avg = Average of marks obtained in R1, R2, R3, R4, R5. Final Marks = Avg × 2

**Table 2.2.3.3. Rubric# R1: Project Synopsis/Proposal Evaluation Maximum Marks: 50**

Parameters	Allocated Marks	High 9 – 15 Marks	Medium 5 – 8 Marks	Low 0 – 4 Marks
<b>Identification of Problem Domain and Detailed Analysis</b>	15	Detailed and extensive explanation of the purpose and need of the project	Average explanation of the purpose and need of the project;	Minimal explanation of the purpose and need of the project
<b>Study of the Existing Systems and Feasibility of Project Proposal</b>	15	Detailed and extensive explanation of the specifications and the limitations of the existing systems	Moderate study of the Existing systems; Collects some basic information	Minimal explanation of The specifications and the Limitations of the existing Systems incomplete information
<b>Objectives and Methodology of the Proposed Work</b>	20	All objectives of the proposed work are well defined; Steps to be followed to solve the defined problem are clearly specified	Average justification to the objectives proposed; Steps are mentioned but unclear; without justification to objectives	Objectives of the proposed work are either not identified or not well defined; Incomplete and improper specification
		<b>14 – 20 Marks</b>	<b>7 – 13 Marks</b>	<b>0 – 6 Marks</b>

Table: 2.2.3.4 Rubric# R2: Mid Term Project Evaluation; Maximum marks:50

Parameters	Allocated Marks	High 9 – 15 Marks	Medium 5 – 8 Marks	Low 0 – 4 Marks
<b>Design Methodology</b>	15	Division of problem into modules and good selection of computing framework, appropriate design methodology	Division of problem into modules but inappropriate selection of computing framework, design methodology not defined	Modular approach not adopted, design methodology not defined
<b>Planning of Project Work</b>	15	Time frame work properly specified and being followed	Time frame work properly specified but not being followed	Time frame work not properly specified
<b>Demonstration &amp; Presentation</b>	20	All objectives of the proposed work are well defined; Steps to be followed to solve the defined problem are clearly specified	Average justification to the objects proposed; Steps are mentioned but unclear; without justification to objectives	Objectives of the proposed work are either not identified or not well defined; incomplete and improper specification
		<b>14 – 20 Marks</b>	<b>7 – 13 Marks</b>	<b>0 – 6 Marks</b>

Table: 2.2.3.5 Rubric#R3: End-Semester Project Evaluation; Maximum marks: 50

Parameters	Allocated Marks	High 9 – 15 Marks	Medium 5 – 8 Marks	Low 0 – 4 Marks
<b>Incorporation of suggestions</b>	15	Changes are made as per modifications suggested during midterm evaluation and new innovations added	Moderate changes are made as per modification suggested during midterm evaluation	Suggestions during mid-term evaluation are not incorporated
<b>Project Demonstration</b>	15	All defined objectives are achieved, all modules working well and integrated, project properly demonstrated	Some of the defined objectives are achieved, all modules working well and modules are not properly integrated	Defied objectives not achieved, modules are not in proper working form that further leads to failure of integrated system
<b>Presentation</b>	20	Contents of presentation are appropriate and well delivered. Proper eye contact with audience and clear voice with good language	Contents of presentation are appropriate but not well delivered. Eye contact with few people and unclear voice	Contents of presentation are not appropriate and not well delivered. Poor delivery of presentation
		<b>14 – 20 Marks</b>	<b>7 – 13 Marks</b>	<b>0 – 6 Marks</b>

Table: 2.2.3.6 Rubric#R4: Project report Evaluation; Maximum marks: 50

Parameters	Allocated Marks	High 9 – 15 Marks	Medium 5 – 8 Marks	Low 0 – 4 Marks
<b>Project Report</b>	15	Project report is according to the specified format, references are appropriate	Project report is according to the specified format, but not well prepared, references are missing	Project report not prepared according to the specified format, references are not appropriate
<b>Description of concepts and Technical Details</b>	15	Complete explanation of key concepts, strong description of technical requirements of the project	Insufficient description of technical requirements of the project	Inappropriate explanation of key concepts, poor description of technical requirements of the projects
<b>Conclusion and Discussion</b>	20	Results are presented in appropriated manner, project work is well summarized and concluded, future extension in the project	Result presented are satisfactory, project work summary and conclusion not very appropriate, future extension in the project	Result are not presented properly, project work is not summarized and concluded, future scope in the project are not specified
		<b>14 – 20 Marks</b>	<b>7 – 13 Marks</b>	<b>0 – 6 Marks</b>

Table: 2.2.3.7 Rubric#R5: Evaluation by Guide; Maximum marks: 50

Parameters	Allocated Marks	High 9 – 15 Marks	Medium 5 – 8 Marks	Low 0 – 4 Marks
<b>Self-Motivation and Determination</b>	15	Approaches the project with self-motivation and follows till completion	Completes the project, but sometimes lacks self-motivation	Lacks self-motivation and determination
<b>Technical Knowledge and Awareness related to the project</b>	15	Extensive knowledge related to the project	Fair knowledge related to the project	Lacks sufficient knowledge
<b>Regularity</b>	20	Reports to the guide regularly and consistent in work	Reports to the guide but lacks consistency	Irregular in attendance and inconsistent in work
		<b>14 – 20 Marks</b>	<b>7 – 13 Marks</b>	<b>0 – 6 Marks</b>



**Completed projects / Working model**

- Department supports students to participate and present their completed project in various national and international conferences and conducted National Level Project exhibition with other departments to showcase their project in our college.
- The best projects identified from the project exhibition are sent to different colleges/institute for participation in exhibition.
- The department even encourages the best projects to file patent/report Discoveries
- The internal guide helps the students to publish their work in national/international conference and journal.
- The list of patents filed and papers presented/published by students is given in Table 2.2.3.8.

**Table: 2.2.3.8. List of patents filed and papers presented/published by students**

Sl. No.	Date	Name of the student and USN	Guide	Title of the Paper Published	Details of Journal/ Conference	Remarks
1	25/09/2017	Indranil Das (1NH14EE711)	Mr. Santhosh S	Sensorized two USB port solar charging system	-	Submitted Patent Application at Kolkatta Office,India
2	25/09/2017	Indranil Das (1NH14EE711)	Mr. Santhosh S	A power bank apparatus	-	Submitted Patent Application at Kolkatta Office, India
3	19/06/17	Mr.Prasanna.R (1NH12EE035)	Dr.Mahesh Mr.Lithesh.J Mr.Inbasakaran	Green Energy-Hybrid generation (solar-wind) for irrigation	-	Submitted Patent Application at Chennai Office, India
4	19/06/17	Mr.Karthik M (1NH12EE722)	Dr.Mahesh Mr.Lithesh.J Mr.Inbasakaran	Design and installation of PICO-HYDRO electrification using green energy	-	Submitted Patent Application at Chennai Office, India
5	22/05/17	Ms.Kota Reddy Lakshmi (1NH13EE044)	-	A method to alert the user in case of a mobile theft / unauthorized use	-	Submitted Patent Application at Chennai Office, India
6	22/05/17	Mr.Dipesh Bhushan (1NH13EE717)	Mr. B.S Mohan	Electronic variable speed governor for two wheelers	-	Submitted Patent Application at Chennai Office, India

7	19/4/2017	Darshan Kumar N (1NH13EE011)	Dr. Mahesh K	Big Data Analysis in SMART GRID System	National Conference on Recent Technologies in Electrical & Electronics, Dept. of ECE, NHCE Bangalore	-
8	19/4/2017	Jyothi J (1NH13EE016), Monisha S (1NH13EE029), S. Jayanth (1NH12EE043)	Mr. Inbasakaran	Calculations for Electrical Winding and Drawing Using MATLAB	National Conference on Recent Technologies in Electrical & Electronics, Dept. of ECE, NHCE Bangalore	-
9	19/4/2017	Kusumalla Nagendra (1NH13EE018), Akash V K (1NH13EE002) Mukul R (1NH13EE030)	Mr. Lithesh J	IoT Based Global Industrial Process Monitoring using Rasperry Pi	National Conference on Recent Technologies in Electrical & Electronics, Dept. of ECE, NHCE Bangalore	-
10	11/4/2017	Indranil Das (1NH14EE711)	Mr. Santhosh S	A Sensor Ignition System for Two Wheelers	-	Submitted Patent Application at Kolkatta Office,India
11	31/8/2016	Shivam Kumar (1NH13EE055), Kaustuv  (1NH15EE027), Allen Antony (1NH15EE702)	Mr. Doney D Sam	Energy Management System using IoT	Mitsubishi Electric Cup 2017	-
12	31/8/2016	Prakash Kumar (1NH13EE732) Dipesh Bhushan (1NH13EE717)	Mr. B.S Mohan	Modernization of Indian Railway	Mitsubishi Electric Cup 2017	-
13	31/8/2016	Sandeep Sharma (1NH13EE051) Sunil Kumar T (1NH13EE061) Venkatesh Murthy N S	Mr. B.S Mohan	Electric Power Generation using Turbine in an industrial chimney	Mitsubishi Electric Cup 2017	-

		(1NH13EE066) Veersh S K (1NH13EE065)				
14	15/07/16	Ayush Tiwari (1NH12EE710) Sanjeev Kumar (1NH12EE744) Niraj Kumar (1NH12EE732) Alok Kumar (1NH12EE703)	Santhosh S and Duney D Sam	Design and Development of High Voltage/Current Supply with Constant Current System for HHO Cell A Green Energy System	International Journal of Current Engineering and Technology	-

#### 2.2.4. Initiatives Related to Industry Interaction

(15)

*(Give details of the industry involvement in the program such as industry-attached laboratories, partial delivery of appropriate courses by industry experts etc. Mention the initiatives, implementation details and impact analysis).*




#### Industry Supported Laboratories




The industry supported laboratories develops best learning process using a comprehensive understanding of industry's best practices for both students and faculties. This initiative imbibes professionalism, behaviour aspects and awareness about industry expectations and also aligns aspirations of the students with the needs of the industries and promotes career counselling by organizing guidance lectures by senior corporate personnel.


#### List of industry supported laboratories

- Schneider Electric India Private Limited
- Hewlett Packard Enterprise
- Adobe
- VMware
- SAP

Table 2.2.4.1. Details of Industry supported Laboratories

Sl.No.	Name of the company	Objectives	Outcomes
1	 CoE - Schneider Electric India Private Limited and French Ministry of National Education	<ul style="list-style-type: none"> <li>To carry out vocational training programmes in initial and continuing education in the fields of electricity, automation and energy management.</li> <li>To develop, within an international framework of “academic-industry” links, training programmes in continuing education for technical teachers, training of young engineers and technicians and to prepare them for the job market in the field of electricity, automation and energy management.</li> </ul>	<p><b>POs:</b> PO1, PO2, PO3, PO4, PO5, PO6, PO12  <b>PSOs:</b> 1,2</p> <p>The MOU has resulted in setting up of laboratory in industrial automation. For academic year 2017-18 a course is offered on Industrial Automation as an industrial open elective in various departments and is a core subject for students of Electrical and Electronics Engineering. In future it is planned for valued added program for practicing engineers, teachers and students of other institution and colleges.</p>
2	 HP Vertica CoE	<ul style="list-style-type: none"> <li>The whole objective is to make fresh engineers and business management graduates more capable, creative &amp; have innovative approach in thinking.</li> <li>To develop resources those can be absorbed from College &amp; ready to perform in various sectors like Banking, Telecom, Manufacturing, E-commerce, Retail etc.</li> <li>HP E will be engaged in overall development of students will invite Industry professional to enhance Big Data Analytics skills through hands on sessions, guest lecturers etc.,</li> </ul>	<p><b>POs:</b> PO1, PO2, PO3, PO4, PO5, PO6, PO11, PO12</p> <p>Big data and data analytics is emerging area where skilled professionals are required. Courses are offered as an elective for the students of the Department to hone their skills in Big Data so that they are industry ready professionals.</p>
3	 VMware IT Academy	<ul style="list-style-type: none"> <li>Faculty enablement or empowerment</li> <li>Access to all VMware tools</li> <li>Curriculums on Virtualization, Devops, MDM and other technological advancements</li> <li>VMware academic</li> </ul>	<p><b>POs:</b> PO1, PO4, PO5, PO9, PO10, PO12</p> <p>VMware IT Academy Program (vITA) is designed to introduce students to VMware technologies and equip them with technical skills needed for the modern IT</p>

		<p>recognition for students (equivalent to certification)</p> <ul style="list-style-type: none"> <li>• VMware vExperience (CoE)</li> <li>• Local student club including annual project competitions and others.</li> <li>• MOOC and other new offerings</li> </ul>	<p>world. Faculty/ Students will gain access to technology and contents from VMware, which in turn prepare them for the new IT world.</p> <p>Courses are offered as an elective for the students of the Department to hone their skills in VMware Technologies.</p>
4	 <p>Adobe Digital COE</p>	<ul style="list-style-type: none"> <li>• To train students on Adobe Suite of Products and Services</li> <li>• Adobe Experience Manager (AEM) joint certification</li> <li>• Adobe Experience Manager (AEM) curriculum as an Elective Paper to B.E and MCA students at 4th, 5th Semester level with credits attached to the course.</li> <li>• to deploy Digital Practice Projects by Wipro Technologies immediately after their 8th Semester examinations.</li> </ul>	<p><b>POs:</b> PO1, PO5, PO9, PO10, PO12</p> <p>Adobe is providing required technological and domain related expertise to faculties and students of New Horizon College of Engineering. Courses are offered as an elective for the students of the Department to hone their skills in Adobe Systems.</p>
5	 <p>SAP Next Generation Lab</p>	<ul style="list-style-type: none"> <li>• Hackathons where a corporate using / working on SAP technologies can provide problem statements for NHCE students to work out using SAP products.</li> <li>• Students can work on projects/ problem statements shared by corporate for a longer duration if such problem statements are arrived at.</li> <li>• SAP will expose students to the topics via the lectures such as on SAP HANA Cloud Platform, SAP S/4HANA – ERP, Analytics, Design Thinking.</li> </ul>	<p><b>POs:</b> PO1, PO5, PO9, PO10, PO12</p> <p>SAP modules are integrated as electives in NHCE courses. NHCE to be given special privilege for Industry Visit to SAP LABS.</p>
6	 <p>QuEST Global</p>	<ul style="list-style-type: none"> <li>• Quest Global Services India Pvt Ltd (Quest Global India) is establishing Industrial Internet of Things (IIoT)</li> </ul>	<p><b>POs:</b> PO1, PO5, PO9, PO10, PO12</p> <p>Courses are offered as an elective</p>

		<p>Centre of Excellence.</p> <ul style="list-style-type: none"> <li>it prepares Ready to Deploy (R2D) Resources enabling the candidates in developing the understanding and expertise of technology stack of IIoT platform.</li> <li>The focus area would be Software Application Development and Testing , Software tools modernization to adopt Predix or micro services architecture and UX/HMI development.</li> </ul>	for the students of the Department to hone their skills in Industrial Internet of Things.
7	 <p>CISCO Networking Academy</p>	<ul style="list-style-type: none"> <li>NHCE gets access to all resources, course materials, services, websites or other deliverables “as is”, without warranty of any kind</li> <li>The Cisco CCNA Routing and Switching curriculum is designed for Cisco Networking Academy to pursue more specialized ICT skills.</li> </ul>	<p><b>POs:</b> PO1, PO5, PO9, PO10, PO12</p> <ul style="list-style-type: none"> <li>CCNA Routing and Switching provides an integrated and comprehensive coverage of networking topics, from fundamentals to advanced applications and services, while providing opportunities for hands-on practical experience and career skills development.</li> <li>Students will be prepared to take the Cisco CCENT® certification exam after completing a set of two courses and the CCNA Routing and Switching certification exam after completing a set of four courses.</li> </ul>

### Industry involvement in the program design and partial delivery of courses for students

The institution has signed MoU with Schneider Electric India Private Limited, Hewlett Packard enterprise, Adobe, VMware and SAP. These industry es involve in designing the program, depute trainers to train the faculties and students of our institution. The Curriculum of Industrial Automation is shown in Figure 2.2.4.1.

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## VI SEMESTER

### INDUSTRIAL AUTOMATION

**Course Code :** **Credits : 04**  
**L:P:T:S : 0:4:0:0** **CIE Marks :**  
**Exam Hours : 03** **SEE Marks :**

**Course Outcomes: At the end of the Course, the Student will be able to:**

<b>CO1</b>	Understand the architecture of an industrial automation system
<b>CO2</b>	Design a PLC application using ladder diagram language according to a specification
<b>CO3</b>	Design a PLC application using SFC diagram language according to a specification
<b>CO4</b>	Use Unity Pro to program and test an application
<b>CO5</b>	Use Vijeo Designer to program and test an application

**Mapping of Course Outcomes to Program Outcomes:**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>CO1</b>	2					1				2		
<b>CO2</b>	2	3		1	3							
<b>CO3</b>	2	3		1	3							
<b>CO4</b>			3	1	3							
<b>CO5</b>			3	1	3							



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Module	Contents of the Module	Hours	Cos
1	<p><b>Basics of Automation:</b> Control Systems and Automation Strategy Evolution of instrumentation and control, role of automation in industries, benefits of automation.</p> <p><b>Structure of PLC:</b> Introduction, architecture, definition of discrete state process control, PLC Vs PC, PLC Vs DCS.</p> <ul style="list-style-type: none"> <li>• <b>Practical activities:</b> <ul style="list-style-type: none"> <li>○ Application to Schneider M340 pedagogic bench and wiring of input and output.</li> </ul> </li> </ul> <p><b>Instrumentation Standard Protocols:</b> Definition of protocol, Introduction to Open System Interconnection (OSI) model, Communication standard (RS232, RS485), Modbus (ASCII/ RTU), Introduction to third party interface, concept of OPC (Object linking and embedding for Process Control).</p> <ul style="list-style-type: none"> <li>• <b>Practical activities:</b> <ul style="list-style-type: none"> <li>○ Analysis of a PLC configuration and communication devices</li> </ul> </li> </ul> <p><b>Sensors in industrial automation:</b> Types and characteristics of most used sensors in industry. Application to sensors in PLC environment.</p> <ul style="list-style-type: none"> <li>• <b>Practical activities:</b> <ul style="list-style-type: none"> <li>○ Analysis of several sensors (technologies, performances, ...) and connections to PLC</li> </ul> </li> </ul>	11	CO1 CO4
2	<p><b>Ladder and FBD programming languages:</b> Introduction to PLC programming ladder and FBD methods as per IEC 61131.</p> <ul style="list-style-type: none"> <li>• <b>Practical activities:</b> <ul style="list-style-type: none"> <li>○ Basic logic operations under Unity ProEnvironment,</li> <li>○ Timers/counters functional bloc,</li> <li>○ Applications with M340 Bench,</li> <li>○ Application with surface treatment industrial device.</li> </ul> </li> </ul>	11	CO1 CO2 CO4
3	<p><b>SFC programming language:</b> Introduction to PLC programming SFC method as per IEC 61131.</p> <ul style="list-style-type: none"> <li>• <b>Practical activities:</b> <ul style="list-style-type: none"> <li>○ Basics Applications under Unity Pro environment,</li> <li>○ Applications with M340 Bench,</li> <li>○ Application with surface treatment industrial device.</li> </ul> </li> </ul>	11	CO1 CO3 CO4
4	<p><b>HMI development:</b> Introduction of HMI in Industrial Automation.</p> <ul style="list-style-type: none"> <li>• <b>Practical activities:</b> <ul style="list-style-type: none"> <li>○ Applications with Vijeo Designer Environment,</li> <li>○ Applications with M340 Bench,</li> <li>○ Application with surface treatment industrial device.</li> </ul> </li> </ul>	11	CO1 CO5


**Text books:**

1. Programming Industrial Control Systems Using IEC 1131-3 (I E E CONTROL ENGINEERING SERIES) Revised Edition, by Robert W. Lewis (Author)
2. Programmable Logic Controllers and Industrial Automation: An Introduction 2nd Edition, by Madhuchhanda Mitra and Samarjt Semgupta.
3. Industrial Controls and Manufacturing (Engineering) 1st Edition by Edward W. Kamen






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**Reference books:**

1. Industrial Instrumentation Paperback, by K Krishnaswamy, S. Vijyachitra.
2. Overview of Industrial Process Automation Paperback, by K.L.S. Sharma
3. Industrial Process Automation Systems 1st Edition, by B.R. Mehta Y. Jaganmohan Reddy

**Assessment Pattern**  
Implementation of Bloom's Taxonomy in CIE (**XX**Marks) and SEE (**XX** marks)

Blooms levels	CIE			SEE
	Test = 30	Assignment = 10	Quiz = 10	Examination = 50
Remember				
Understand				
Apply				
Analyze				
Evaluate				
Create				

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3/3

Figure 2.2.4.1. Curriculum of Industrial Automation

### Impact analysis of industry institute interaction and actions taken

The students of the Department have shown keen interest to undertake courses offered by the Centre of Excellences. Students have successfully completed the enrolled courses. The impact analysis of the Industry Institute Interaction is shown in Figure 2.2.4.2.

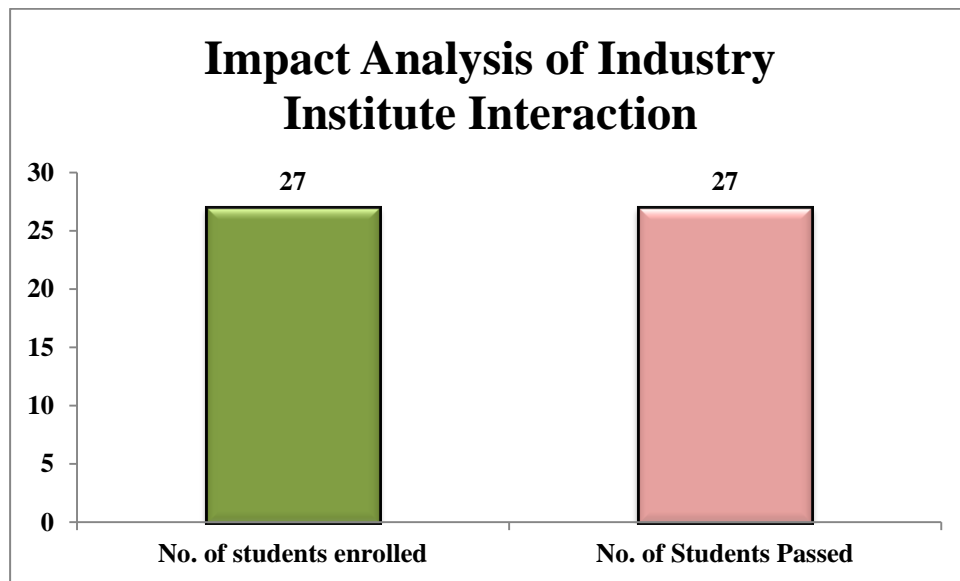


Figure 2.2.4.2. Impact analysis of Industry Institute Interaction

### 2.2.5 Initiatives related to industry internship training

#### Industrial Visit for Students

Industrial visits give greater clarity about importance of Electrical and Electronics Engineering concepts, as students practically experience how these concepts are put into action. New Horizon College of Engineering encourages industrial visits as a value-added learning method for engineering students. Learning from textbooks, lectures and other study material does not suffice for holistic learning. Practical and hands-on learning is essential for better understanding of work processes. Table 2.2.5.1 gives the details of the industrial visits. Figure 2.2.5.1 and Figure 2.2.5.2 are sample photos taken during the visits.



**4<sup>th</sup>-A Industrial visit to "10MW grid connected Solar Power plant at Shivanasamudram, Belakavadi Village, Mandya district of Karnataka on 18<sup>th</sup> March 2017.**

**Figure 2.2.5.1. Industrial Visit to Grid connected Solar Power Plant**



**Industrial visit for III semester to "MAHATMA GANDHI INSTITUTE OF RURAL ENERGY AND DEVELOPMENT (MGIRED)" at Srirampura Cross, Jakkur, Bengaluru - 560 064. on 30<sup>th</sup> and 31<sup>st</sup> October 2017.**

**Figure 2.2.5.2 Industrial Visit to MGIRED**

Table 2.2.5.1 Industrial Visit Details

For Academic Year 2017-18				
SL. No	Date of Visit	Organization Visited	No. of Students Visited	Outcome
1	30/10/2017	Mahatma Gandhi Institute of Rural Energy and Development (MGIRED) Training Institute, Jakkur, Bangalore	60 (III A)	POs: 1,6,7,8,9 PSO1, PSO2
2	31/10/2017	Mahatma Gandhi Institute of Rural Energy and Development (MGIRED) Training Institute, Jakkur, Bangalore	60 (III B)	POs: 1,6,7,8,9 PSO1, PSO2
For Academic Year 2016-17				
3	11/05/2017	National Power Training Institute, Somanahalli Gate, Kanakapura Road, Bangalore	45	POs: 1,6,7,8,9 PSO1, PSO2
4	12/05/2017	National Power Training Institute, Somanahalli Gate, Kanakapura Road, Bangalore	45	POs: 1,3,6,7,8,9, PSO1
5	10/04/2017	Mahatma Gandhi Institute of Rural Energy and Development Training Institute	120	POs: 1,6,7,8,9 PSO1, PSO2
6	18/03/2017	10 MW Solar Power Plant, Shivasamudram, Mandya	80	POs: 1,2,6,7,8,9
7	15/10/2016	BHEL-EPD, Malleshwaram, Bangalore	60	POs: 3,6,7,9 PSO1
8	15/04/2016	Varahi Underground Hydel Power Plant, Kundapura	60	POs: 3,6,7,9 PSO1
9	02/04/2016	Madhavamantri Sattegala Mini Hydel Power Plant	70	POs: 3,6,7,9 PSO1
For Academic Year 2015-16				
10	02/05/2016	National Power Training Institute, Somanahalli Gate, Kanakapura Road, Bangalore	45	POs: 3,6,7, 8,9, PSO1
11	15/10/2015	Varahi Underground Hydel Power Plant, Kundapura	60	POs: 3,6,7,9 PSO1

### Industrial internship

New Horizon motivates students to undertake internship programs in various well known firms both public and private sector. It provides an opportunity to work on real world projects to hone their skills on cutting edge technology. This helps students to develop a network and contacts. The students enjoy the opportunity which is able to meet their particular interest.

Table 2.2.5.2. Industry Internship Details

For Academic Year 2017-2018						
Sl No	USN	Name Of The Student	Event	Place	Date	Outcome
1	1NH15EE027	Kaustuv Majumder	Internship Training	West Bengal State Electricity Transmission Corporation Ltd	18/12/2017 TO 08/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
2	1NH15EE723	Md Saad	Internship Training	West Bengal State Electricity Transmission Corporation Ltd	18/12/2017 TO 08/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
3	1NH15EE736	Pratim Sil	Internship Training	West Bengal State Electricity Transmission Corporation Ltd	18/12/2017 TO 08/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
4	1NH15EE736	Pratim Sil	Internship Training	Air Traffic Control	03/01/2018 TO 16/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
5	1NH15EE020	Vikas G	Internship Training	I Power Technology, Bangalore	18/12/2017 TO 30/12/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1
6	1NH15EE024	Harsha T	Internship Training	I Power Technology, Bangalore	18/12/2017 TO 30/12/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1
7	1NH15EE051	Sharath M	Internship Training	I Power Technology, Bangalore	18/12/2017 TO 30/12/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1
8	1NH15EE006	Amrutha Hegde	Internship Training	I Power Technology, Bangalore	18/12/2017 TO 30/12/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1
9	1NH15EE057	Suma M	Internship Training	I Power Technology, Bangalore	18/12/2017 TO 30/12/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1
10	1NH15EE060	Swaroop H J	Internship Training	I Power Technology, Bangalore	18/12/2017 TO 30/12/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1
11	1NH15EE746	Shashi Kiran V	Internship In Design Of Substation And Its Concern Technical Specification	KPTCL, Avenue Road, Bangalore	22/12/2017 TO 06/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
12	1NH15EE705	Bhavan/N	Internship In Design Of Substation And	KPTCL, Avenue Road, Bangalore	22/12/2017 TO 06/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12

			Its Concern Technical Specification			PSOs:1,2
13	1NH15EE716	Harshith/G	Internship In Design Of Substation And Its Concern Technical Specification	KPTCL, Avenue Road, Bangalore	22/12/2017 TO 06/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
14	1NH15EE727	Naveen Kumar S	Internship In Design Of Substation And Its Concern Technical Specification	KPTCL, Avenue Road, Bangalore	22/12/2017 TO 06/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
15	1NH15EE738	Rajesh/V	Internship In Design Of Substation And Its Concern Technical Specification	KPTCL, Avenue Road, Bangalore	22/12/2017 TO 06/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
16	1NH15EE734	Prabhu K	Internship In Design Of Substation And Its Concern Technical Specification	KPTCL, Avenue Road, Bangalore	22/12/2017 TO 06/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
17	1NH15EE735	Pramod Kumar	Internship In Design Of Substation And Its Concern Technical Specification	KPTCL, Avenue Road, Bangalore	22/12/2017 TO 06/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
18	1NH15EE749	Sireesh Reddy	Internship In Design Of Substation And Its Concern Technical Specification	KPTCL, Avenue Road, Bangalore	22/12/2017 TO 06/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
19	1NH15EE728	Niharika	Internship In Transmission Planning	KPTCL, Avenue Road, Bangalore	21/12/2017 TO 04/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
20	1NH15EE733	Pooja R	Internship In Transmission Planning	KPTCL, Avenue Road, Bangalore	21/12/2017 TO 04/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
21	1NH15EE740	Sahana/V	Internship In Transmission Planning	KPTCL, Avenue Road, Bangalore	21/12/2017 TO 04/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
22	1NH15EE753	Tejasvi/L	Internship In Transmission Planning	KPTCL, Avenue Road, Bangalore	21/12/2017 TO 04/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12

						PSOs:1,2
23	1NH15EE741	Saheli Roy	Internship In Transmission Planning	KPTCL, Avenue Road, Bangalore	21/12/2017 TO 04/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
24	1NH15EE719	Kavya L C	Internship In Transmission Planning	KPTCL, Avenue Road, Bangalore	21/12/2017 TO 04/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
25	1NH15EE039	Nikhil Dubey	Internship In Transmission Planning	KPTCL, Avenue Road, Bangalore	21/12/2017 TO 04/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
26	1NH15EE713	Sharmila D	Internship In Transmission Planning	KPTCL, Avenue Road, Bangalore	21/12/2017 TO 04/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
27	1NH14EE756	Sanjay S	Internship Training	Hindustan Aeronautics Limited, Bangalore	08/01/2018 TO 20/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
28	1NH14EE755	Samarth Sharma	Internship Training	Hindustan Aeronautics Limited, Bangalore	08/01/2018 TO 20/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
29	1NH14EE741	Akshaya C R	Internship Training	Hindustan Aeronautics Limited, Bangalore	08/01/2018 TO 20/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
30	1NH14EE752	Priyanka Pramod Wani	Internship Training	Hindustan Aeronautics Limited, Bangalore	08/01/2018 TO 20/01/2018	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
31	1NH14EE005	Ageesh A	Internship Training In Renewable Energy	Schneider Electric India, Bangalore	13/09/2017 TO 25/09/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
32	1NH15EE717	Isha Gupta	Internship At Mcaffiene	Online	1/9/2017 TO 30/10/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1

## For Academic Year 2016-2017

Sl No	USN	Name Of The Student	Event	Place	Date	Outcome
1	1NH13EE035	Pavithra/N	Internship Training	KPTCL, Hoody, Bangalore	09/01/2017 TO 31/01/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
2	1NH15EE706	Binay Kumar	Internship At Sail	Bokaro Steel Plant	26/06/2017 TO 08/07/2017	POs:1,2,3,4, 5,6, 7,8,9,10,11, 12 PSOs:1,2

3	1NH16EE060	Kruthi Yerramsetty	Training In Embedded & Robotics Basics And Advanced	Hewlett Packard	26/06/2017 TO 08/07/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1
4	1NH14EE701	Akshay Kumar	Internship In Measurement Engineering Group	Gas Turbine Research Establishment, DRDO, Bangalore	17/08/2017 TO 24/08/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1
5	1NH15EE001	Aakarsh Sagar	Internship In Power Transmission And Maintenance Of Substation	KPTCL, Avenue Road, Bangalore	01/07/2017 TO 31-07-2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
6	1NH15EE042	R/Arjumanth Farraj	Internship In Power Transmission And Maintenance Of Substation	KPTCL, Avenue Road, Bangalore	01/07/2017 TO 31-07-2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
7	1NH15EE702	Allen Antony Mathew	Internship In Power Transmission And Maintenance Of Substation	KPTCL, Avenue Road, Bangalore	01/07/2017 TO 31-07-2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
8	1NH15EE717	Isha Gupta	Internship In Power Transmission And Maintenance Of Substation	KPTCL, Avenue Road, Bangalore	01/07/2017 TO 31-07-2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
9	1NH15EE007	Anupama B/T	Internship In power Transmission And Maintenance Of Substation	KPTCL, Avenue Road, Bangalore	01/06/2017 TO 30/06/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
10	1NH15EE020	G/Vikas	Internship In power Transmission And Maintenance Of Substation	KPTCL, Avenue Road, Bangalore	01/06/2017 TO 30/06/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
11	1NH15EE725	Naimish Kumar Bareek	Internship In power Transmission And Maintenance Of Substation	KPTCL, Avenue Road, Bangalore	01/06/2017 TO 30/06/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
12	1NH15EE014	Chandan/N	Internship In power Transmission And Maintenance Of	KPTCL, Avenue Road, Bangalore	01/06/2017 TO 30/06/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2



			Substation			
13	1NH15EE027	Kaustuvmajumdar	Internship Inpower Transmission And Maintenance Of Substation	KPTCL, Avenue Road, Bangalore	01/06/2017 TO 30/06/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
14	1NH15EE024	Harsha/T	Internship In Machines	Bosch, Bangalore	19/7/2017 TO 08/5/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
15	1NH15EE707	Chaithra K/P	Internship In Familiarisation	HAL, Bangalore	17/07/2017 TO 08/05/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
16	1NH15EE743	Sai Priya Lakshmipathy	Internship In Familiarisation	HAL, Bangalore	17/07/2017 TO 08/05/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
17	1NH15EE731	Nisha/D	Internship In Familiarisation/ Implant Training	HAL, Bangalore	17/07/2017 TO 08/05/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
18	1NH15EE721	Lekha/V	Internship In Familiarisation/ Implant Training	HAL, Bangalore	17/07/2017 TO 08/05/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
19	1NH15EE718	Jeevan Bopanna/P	Internship In Substation Design & Scada	KPTCL, Avenue Road, Bangalore	06/05/2017 TO 20/06/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
20	1NH15EE708	Charushri/M	Internship In Substation Design & Scada	KPTCL, Avenue Road, Bangalore	06/05/2017 TO 20/06/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
21	1NH15EE752	Suhas/H/K	Internship In Substation Design & Scada	KPTCL, Avenue Road, Bangalore	06/05/2017 TO 20/06/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
22	1NH15EE704	Ahuldas	Internship In Substation Design & Scada	KPTCL, Avenue Road, Bangalore	06/05/2017 TO 20/06/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
23	1NH14EE718	Nivas/ C	Internship In Substation Design & Scada	KPTCL, Avenue Road, Bangalore	06/05/2017 TO 20/06/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
24	1NH15EE708	Charushri/M	Internship At HAL	HAL, Bangalore	19/06/2017 TO 18/07/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2

25	1NH15EE730	Nikhil Kumar	Internship	HALycon	01/06/2017 30/06/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
26	1NH15EE744	Sandhya/M	Internship At HAL	HAL,Bangalore	19/6/2017 TO 18/7/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
27	1NH15EE005	Akshay Kumar Biradar	Internship NTPC	NTPC Kudgi	12/07/2017 TO 11/08/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
28	1NH15EE040	Poralla Bhargavi	Internship In HAL	HAL Engine Division	19/06/2017 TO 18/07/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
29	1NH16EE403	Ganesh D	Internship On Technical Services	Manjunath Technical Service	11/07/2017 TO 25/07/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1
30	1NH15EE717	Isha Gupta	Internship On Digital Marketing	Mcaffeine	07/06/2017 TO 15/07/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1
31	1NH14EE005	Ageesh A	Training Programm On Solar Photo Voltaic Grid Connected Power Plants	KPCL&National Training Centre For Solar Technology, Bangalore	13/03/2017 TO 18/03/2017	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2

## For Academic Year 2015-2016

Sl No	USN	Name Of The Student	Event	Place	DATE	Outcome
1	INH13EE719	Jaya Kumari	Vocational Training	HRD,Dishergarh	12/01/2016 TO 30/01/2016	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
2	1NH14EE001	A N Sharath	Industrial Training	Hindustan Aeronautics Limited (HAL)	04/01/2016 TO 18/01/2016	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
3	INH13EE716	Dipshika Singh	Vocational Training	BSNL,Jamnagar	20/07/2015 TO 01/08/2015	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
4	INH13EE732	Praksh Kumar Choudary	Vocational Training	All India Radio,Patna	09/07/2015 TO 29/07/2015	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
5	INH13EE748	Rupak Kumar Sharma	Vocational Training	All India Radio,Patna	09/07/2015 TO 29/07/2015	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2

6	INH13EE719	Jaya Kumari	Vocational Training	HRDC,Burnpur	06/07/2015 TO 28/07/2015	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
7	1NH13EE040	Rahul Kumar	Vocational Training In Basic Techniques Of Radio Production And Transmission	All India Radio,Patna	09/07/2015 TO 29/07/2015	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
8	1NH12EE033	Pooja Ghosh	Internship At Aircraft Division	HAL,Bangalore	01/01/2015 TO 31/01/2015	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
9	1NH12EE009	Ankitaniket	Internship Training	Shavaknanavati Technical Institute, Tata Steel	06/01/2015 TO 27/01/2015	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2
10	1NH12EE020	Dhirajprabhakar	Internship Training	BASF India Limited	01/01/2015 TO 31/01/2015	POs:1,2,3,4, 5,6,7,8,9,10, 11,12 PSOs:1,2

### Impact Analysis of Industrial training/internship

- Students are exposed to real time practical experience of the subjects studied in the classrooms and realized the practical importance of the subjects.
- Industrial training inculcated more interest in the subjects.
- Students are inspired to do hard work and get placed in such industries.
- Communication skills of the students improved.
- Students were exposed to the industry standards and workplace culture, the importance of being punctual and meeting the deadlines.

### Student Feedback on industrial training

After the industrial training/internship, feedback is collected from the students and used for impact analysis. Format of the feedback form is as shown in Figure 2.2.5.3.

**NEW HORIZON COLLEGE OF ENGINEERING, BANGALORE**  
Department of Electrical & Electronics Engineering

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**STUDENT INDUSTRIAL TRAINING FEEDBACK FORM**

Name & Address of the Organization: I-POWER TECHNOLOGY (Electronic City)

Duration of the Training/Internship: 15 days

Please tick (✓) where applicable on the agreement scale of 1 to 5, 1 being the lowest levels of agreement and 5 the highest level of agreement

FACTORS ON FEEDBACK		Very Poor (1)	Poor (2)	Satisfactory (3)	Good (4)	Excellent (5)
<b>FACTOR : Task</b>						
1.	The tasks given are related to the subjects that I have learned in the institution.				✓	
2.	The tasks given are challenging and testing your mettle			✓		
3.	The task given were able to complete within the given duration				✓	
<b>FACTOR : Workplace</b>						
4.	The working environment is suitable for the training of industrial trainees			✓		
5.	The colleagues provide good support and receptive of industrial trainees			✓		
6.	I get along well with colleagues			✓		
<b>FACTOR : Industrial Training Preparation</b>						
7.	The training attended has prepared me well to work in the industry in terms of knowledge.				✓	
8.	The training have prepared me well to work in the industry in terms of techniques and skills				✓	
9.	The overall academic learning in the institution had helped me to go through industrial training with confidence.				✓	

**ADDITIONAL COMMENTS OR SUGGESTIONS REGARDING INDUSTRIAL TRAINING**  
Please provide your specific feedback on the industrial training such as the timing of the training, study level (final semester), training duration and any other related aspect.

.....

**GENERAL COMMENTS OR SUGGESTIONS FOR CURRICULUM IMPROVEMENT**  
Please provide comments and suggestions on how we can improve our curriculum by specifying specific knowledge, practice and skills desired by the industry.

.....

Signature: [Signature] Name: G. VIKAS USN: 1NH15EE020

Figure 2.2.5.3. Student Industrial Training Feedback Form

CRITERION 3	COURSE OUTCOMES AND PROGRAM OUTCOMES	120
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**3.1: Establish the correlation between the Courses and the Program Outcomes (PO) and Program Specific Outcomes (PSO) (20)**

(Program Outcomes as mentioned below and Program Specific Outcomes as defined by the Program). **The following are the program outcomes:**

**PO1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems in Electrical and Electronics Engineering.

**PO2. Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems in Electrical and Electronics Engineering reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes of Electrical and Electronics Engineering that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments in Electrical and Electronics Engineering, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**PO5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities in Electrical and Electronics Engineering with an understanding of the limitations.

**PO6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice in Electrical and Electronics Engineering.

**PO7. Environment and sustainability:** Understand the impact of the professional engineering solutions of Electrical and Electronics Engineering in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.

**PO8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

The following are the program specific outcomes:

**PSO 1:** Graduates will be able to solve real life problems of Power system and Power Electronics using Mi Power, PSPICE and MATLAB software tools and hardware.

**PSO 2:** Graduates will be able to develop and support systems based on renewable and sustainable Energy sources.

### 3.1.1: Course Outcomes

(05)

(SAR should include course outcomes of one course from each semester of study, however, should be prepared for all courses and made available as evidence, if asked). Note: Number of outcomes for a course is expected to be around 6.

**Table 3.1.1.1: Course outcomes of Basic Electrical Engineering-10ELE15 (First Year)**

At the end of the course, the students will be able to:

Course/COs	Course Outcome
10ELE15.1/CO1	Understand the definitions, derivations, principles involved in electric and magnetic circuits
10ELE15.2/CO2	Apply ohm's law, KCL, KVL & laws in electromagnetism to find unknowns in electric & magnetic circuits
10ELE15.3/CO3	Evaluate problems in single and three phase star-delta connected systems
10ELE15.4/CO4	Understand the construction, basic principle of operation and performance characteristics of electrical machines and measuring instruments
10ELE15.5/CO5	Evaluate problems in 1 phase transformers, synchronous generators, 3 phase induction motor and dc machines
10ELE15.6/CO6	Analyze protective devices, precautions against shock, Earthing and wiring techniques

**Table 3.1.1.2: Course outcomes of Network Analysis-10ES34 (Third Semester)**

At the end of the course, the students will be able to:

Course/COs	Course Outcome
10ES34.1/CO1	Understand and define all the terms and definitions in Network Analysis.
10ES34.2/CO2	Analyze the working of various components of a circuit
10ES34.3/CO3	Apply the knowledge of different network reduction techniques in solving the given circuit with dependent
10ES34.4/CO4	Evaluate frequency response, behavior of different passive elements, different network parameters and enabling the design of complex circuits depending on specifications
10ES34.5/CO5	Understand the theories represent mathematical approximations to reality and limitations of those approximations
10ES34.6/CO6	Analyze given electric circuit in terms of ABCD, Z, Y and H parameter model and solve the circuit

**Table 3.1.1.3: Course outcomes of Transformers and Induction machines-10EE46 (Fourth Semester)**

At the end of the course, the students will be able to:

Course/COs	Course Outcome
10EE46.1/CO1	Analyze the performance of the different types of three phase Induction motor, transformer using different methods and tests
10EE46.2/CO2	Analyze the three-phase induction motor and draw equivalent circuit & circle diagram. Engage in self-study to formulate, analyze and demonstrate of induction machine
10EE46.3/CO3	Understand the necessity of starters, speed control for three phase induction motor
10EE46.4/CO4	Evaluate the performance of single phase, three phase and auto transformer and induction motor characteristic with different connection
10EE46.5/CO5	Analyze the parallel operation of transformer at different conditions.
<b>10EE46.6/CO6</b>	Understand the performance of different types of single phase induction motor and applications

**Table 3.1.1.4: Course outcomes of DC Machines & Synchronous Machines-10EE54(Fifth Semester)**

At the end of the course, the students will be able to:

Course/COs	Course Outcome
10EE54.1/CO1	Understand armature reaction, process of commutation in DC machines and Characteristics and speed control of DC Motors
10EE54.2/CO2	Understand the principle of operation of special types of DC Machines
10EE54.3/CO3	Analyzing the efficiency of AC Machines.
10EE54.4/CO4	Analyze the working performance of the different machines
10EE54.5/CO5	Understand the principle of operation of induction machine and synchronous machine
10EE54.6/CO6	Analyze the performance of the different types of Induction and synchronous machines using different tests.

**Table 3.1.1.5: Course outcomes of Power System Analysis and Stability-10EE61(Sixth Semester)**

At the end of the course, the students will be able to:

Course/COs	Course Outcome
10EE61.1/CO1	Understand one line diagram – per unit representation, symmetrical components, unsymmetrical and symmetrical faults
10EE61.2/CO2	Evaluate the need of various analysis like fault analysis, short circuit analysis stability
10EE61.3/CO3	Analyze the phase techniques in the analysis of power systems
10EE61.4/CO4	Apply fundamentals of power system for designing a system that meets specific need
10EE61.5/CO5	Analyze fault - Unsymmetrical short circuit analysis- LG, LL, LLG; Fault parameter calculations
10EE61.6/CO6	Apply stability studies - Steady state and transient stability – Swing equation - Equal area criterion

**Table 3.1.1.6: Course outcomes of Electrical Power Utilization-10EE72(Seventh Semester)**

At the end of the course, the students will be able to:

Course/COs	Course Outcome
10EE72.1/CO1	Understand the methods of heating and welding, design of heating elements, industrial applications of heating and welding
10EE72 .2/CO2	Acquire the knowledge of the electrolytic process, refining of metals, extraction, factors affecting electrolysis process
10EE72 .3/CO3	Design the illumination of practical applications and study the different types of lighting schemes, calculations and types of lamps
10EE72 .4/CO4	Analyze the traction motors and its selection, speed control, energy saving by series and parallel of traction motors
10EE72 .5/CO5	Apply the concepts of AC series motor, trains lighting systems, regenerative braking
10EE72 .6/CO6	Analyze the configuration & performance of electric vehicles, traction motor characteristics, tractive effort, vehicle performance & energy consumption

**Table 3.1.1.7: Course outcomes of Power System Planning -10EE761 (Seventh Semester-Elective)**

At the end of the course, the students will be able to:

Course/COs	Course Outcome
10EE761.1/CO1	Understand the power system planning strategy followed at the national and regional level in the country
10EE761.2/CO2	Understand the legislative laws on electricity as Indian Electricity Regulations
10EE761 .3/CO3	Evaluate the mathematical modeling for optimum design of power system
10EE761 .4/CO4	Understand different types of designing with respect to power system
10EE761 .5/CO5	Evaluate different load management techniques, advanced tariff structure to improve the reliability of power
10EE761 .6/CO6	Evaluate different planning techniques used for modernizing conventional power system

**Table 3.1.1.8: Course outcomes of Power System Operation and Control-10EE82 (Eighth Semester)**

At the end of the course, the students will be able to:

Course/COs	Course Outcome
10EE82.1/CO1	Understand the vertical strategy of the Power system
10EE82.2/CO2	Evaluate mathematical model for various power system components
10EE82.3/CO3	Understand various concepts of effective monitoring of the power system
10EE82.4/CO4	Apply for optimal system operation and unit commitment
10EE82.5/CO5	Analyze different methods of power system control
10EE82.6/CO6	Evaluate Power system reliability by introducing stochastic methods



Table 3.1.1.9: Course outcomes of Renewable Energy Sources -10EE836 (Eighth Semester- Elective)

At the end of the course, the students will be able to:

Course/COs	Course Outcome
10EE836.1/CO1	Analyze various availability of Energy Sources and explain about basics of solar energy
10EE836.2/CO2	Analyze the strengths and weaknesses of the Solar Thermal Energy Conversions and solar electric systems
10EE836.3/CO3	Evaluate different methods of energy storage system and explanation of wind energy in detail and its properties
10EE836.4/CO4	Understand biomass, biogas and urban waste conversions and gasification's
10EE836.5/CO5	Analyze Ocean Energy Technologies, components and different methods to extract the energy from the ocean
10EE836.6/CO6	Understand emerging technologies like fuel cells, hydrogen energy small hydro power plants

### 3.1.2: CO-PO Matrices of Courses Selected in 3.1.1

(05)

(Six matrices to be mentioned; one per semester from 3rd to 8th semester)

Table 3.1.2.1: COs-POs matrices of Network Analysis (Third Semester)

10ES34	Network Analysis											
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
10ES34.1	3	2	2	1	1	1	1	-	1	1	-	2
10ES34.2	3	2	2	1	1	1	1	-	1	1	-	2
10ES34.3	3	3	3	2	2	1	1	1	1	1	1	2
10ES34.4	3	3	3	3	2	1	1	2	2	1	1	2
10ES34.5	3	2	2	1	1	1	1	-	1	1	-	2
10ES34.6	3	3	3	2	2	1	1	1	1	1	1	2
Avg.	3.00	2.50	2.50	1.67	1.50	1.00	1.00	1.33	1.17	1.00	1.00	2.00

Table 3.1.2.2: COs-POs matrices of Transformers and Induction Machines (Fourth Semester)

10EE46	Transformers and Induction Machines											
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
10EE46.1	3	3	3	3	2	2	2	1	2	2	1	2
10EE46.2	3	3	2	3	2	2	2	1	2	2	-	2
10EE46.3	3	2	3	1	1	1	-	1	1	1	2	1
10EE46.4	3	1	3	3	2	2	2	1	2	2	-	2
10EE46.5	3	3	2	3	2	2	2	1	2	2	2	2
10EE46.6	3	2	3	1	1	1	-	1	1	1	-	1
Avg.	3.00	2.33	2.67	2.33	1.67	1.67	2.00	1.00	1.67	1.67	1.67	1.67

Table 3.1.2.3: COs-POs matrices of DC Machines and Synchronous machines (Fifth Semester)

10EE54	DC Machines and Synchronous machines											
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
10EE54.1	3	3	2	2	2	-	-	1	1	1	-	2
10EE54.2	3	3	2	2	2	-	-	1	1	1	-	2
10EE54.3	3	3	1	2	2	1	1	1	2	2	1	2
10EE54.4	3	3	1	2	2	1	1	1	2	2	1	2
10EE54.5	3	3	1	2	2	-	-	1	1	1	-	2
10EE54.6	3	3	1	2	2	2	2	1	2	2	1	2
Avg.	3.00	3.00	1.33	2.00	2.00	1.33	1.33	1.00	1.50	1.50	1.00	2.00

Table 3.1.2.4: COs-POs matrices of Power System Analysis &amp; Stability (Sixth Semester)

10EE61	Power System Analysis & Stability											
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
10EE61.1	3	3	3	1	1	1	2	-	-	2	-	3
10EE61.2	3	3	3	2	2	3	2	2	2	2	2	3
10EE61.3	3	3	3	2	2	3	2	2	2	2	2	3
10EE61.4	3	3	3	2	2	2	2	1	2	2	2	3
10EE61.5	3	3	3	2	2	3	2	2	2	2	2	3
10EE61.6	3	3	3	2	2	2	2	1	2	2	2	3
Avg.	3.00	3.00	3.00	1.83	1.83	2.33	2.00	1.60	2.00	2.00	2.00	3.00

Table 3.1.2.5: COs-POs matrices of Electrical Power Utilization (Seventh Semester)

10EE72	Electrical Power Utilization											
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
10EE72.1	3	3	2	1	-	3	3	3	1	1	3	3
10EE72.2	3	3	3	3	1	3	3	3	1	1	2	3
10EE72.3	3	3	3	3	1	3	3	3	1	1	2	3
10EE72.4	3	3	3	3	1	3	3	3	1	1	2	3
10EE72.5	3	2	2	1	1	3	3	3	1	1	1	3
10EE72.6	3	2	2	1	1	3	3	3	1	1	1	3
Avg.	3.00	2.67	2.50	2.00	1.00	3.00	3.00	3.00	1.00	1.00	1.83	3.00

Table 3.1.2.6: COs-POs matrices of Power System Planning (Seventh Semester- Elective)

10EE761	Power system planning											
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
10EE761.1	3	3	3	1	1	1	2	-	-	2	-	3
10EE761.2	3	3	3	2	1	3	2	2	2	2	2	3
10EE761.3	3	3	3	2	2	3	2	2	2	2	2	3
10EE761.4	3	3	3	2	2	2	2	1	2	2	2	3
10EE761.5	3	3	3	2	2	3	2	2	2	2	2	3
10EE761.6	3	3	3	2	2	2	2	1	2	2	2	3
Avg.	3.00	3.00	3.00	1.83	1.67	2.33	2.00	1.60	2.00	2.00	2.00	3.00

Table 3.1.2.7: COs-POs matrices of Power System Operation and Control (Eighth Semester)

10EE82	Power System Operation and Control											
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
10EE82.1	3	3	2	3	2	1	-	1	1	1	1	3
10EE82.2	3	3	2	3	3	1	1	1	2	2	2	3
10EE82.3	3	3	3	3	3	2	1	1	2	2	2	3
10EE82.4	3	3	3	3	3	3	3	2	3	2	2	3
10EE82.5	3	3	3	3	3	2	3	2	2	2	3	3
10EE82.6	3	3	3	3	3	2	3	2	2	2	3	3
Avg.	3.00	3.00	2.67	3.00	2.83	1.83	2.20	1.50	2.00	1.83	2.17	3.00

Table 3.1.2.8: COs-POs matrices of Renewable Energy Sources (Eighth Semester-Elective)

10EE836	Renewable Energy Sources											
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
10EE836.1	3	3	2	2	2	2	1	1	1	-	-	2
10EE836.2	3	3	2	2	2	2	2	2	1	1	1	2
10EE836.3	3	3	3	2	3	2	2	2	1	2	2	2
10EE836.4	3	3	3	3	3	2	2	2	2	2	2	2
10EE836.5	3	3	3	3	3	2	1	2	2	2	2	2
10EE836.6	3	3	2	2	2	2	2	2	1	1	2	2
Avg.	3.00	3.00	2.50	2.33	2.50	2.00	1.67	1.83	1.33	1.60	1.80	2.00

**Note:**

1. Enter correlation levels 1, 2 or 3 as defined below:
  1. Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

If there is no correlation, put “-”
2. Similar table is to be prepared for PSOs.

**COs-PSOs matrices:****Table 3.1.2.9: COs-PSOs matrices of Network Analysis (Third Semester)**

<b>10ES34</b>	Network Analysis	
<b>COs</b>	PSO1	PSO2
<b>10ES34.1</b>	2	2
<b>10ES34.2</b>	2	2
<b>10ES34.3</b>	2	2
<b>10ES34.4</b>	2	2
<b>10ES34.5</b>	2	2
<b>10ES34.6</b>	2	2
<b>Avg.</b>	2.00	2.00

**Table 3.1.2.10: COs-PSOs matrices of Transformers and Induction Machines (Fourth Semester)**

<b>10EE46</b>	Transformers and Induction Machines	
<b>COs</b>	PSO1	PSO2
<b>10EE46.1</b>	3	3
<b>10EE46.2</b>	3	3
<b>10EE46.3</b>	3	3
<b>10EE46.4</b>	3	3
<b>10EE46.5</b>	3	3
<b>10EE46.6</b>	3	3
<b>Avg.</b>	3.00	3.00

**Table 3.1.2.11: COs-PSOs matrices of DC machines and Synchronous Machines (Fifth Semester)**

10EE54	DC machines and Synchronous Machines	
COs	PSO1	PSO2
10EE54.1	3	3
10EE54.2	3	3
10EE54.3	3	3
10EE54.4	3	3
10EE54.5	3	3
10EE54.6	3	3
Avg.	3.00	3.00

**Table 3.1.2.12: COs-PSOs matrices of Power System Analysis & Stability (Sixth Semester)**

10EE61	Power System Analysis & Stability	
COs	PSO1	PSO2
10EE61.1	3	3
10EE61.2	3	3
10EE61.3	3	3
10EE61.4	3	3
10EE61.5	3	3
10EE61.6	3	3
Avg.	3.00	2.00

**Table 3.1.2.13: COs-PSOs matrices of Electrical Power Utilization (Seventh Semester)**

10EE72	Electrical Power Utilization	
COs	PSO1	PSO2
10EE72.1	2	3
10EE72.2	2	3
10EE72.3	2	3
10EE72.4	2	3
10EE72.5	2	3
10EE72.6	2	3
Avg.	2.00	3.00

Table 3.1.2.14: COs-PSOs matrices of Power System Planning (Seventh Semester-Elective)

10EE761	Power System Planning	
COs	PSO1	PSO2
10EE761.1	3	3
10EE761.2	3	3
10EE761.3	3	3
10EE761.4	3	3
10EE761.5	3	3
10EE761.6	3	3
Avg.	3.00	3.00

Table 3.1.2.15: COs-PSOs matrices of Power System Operation and Control (Eighth Semester)

10EE82	Power System Operation and Control	
CO	PSO1	PSO2
10EE82.1	3	2
10EE82.2	3	2
10EE82.3	3	2
10EE82.4	3	2
10EE82.5	3	2
10EE82.6	3	2
Avg.	3.00	2.00

Table 3.1.2.16: COs-PSOs matrices of Renewable Energy Sources (Eighth Semester-Elective)

10EE82	Renewable Energy Sources	
COs	PSO1	PSO2
10EE836.1	3	3
10EE836.2	3	3
10EE836.3	3	3
10EE836.4	3	3
10EE836.5	3	3
10EE836.6	3	3
Avg.	3.00	3.00

**3.1.3. Program Level Course-PO Matrix of all Courses Including First Year Courses****(10)****Note:** Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High); If there is no correlation, put “-”

**Table 3.1.3.1: Mapping courses with POs.**

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>I Semester</b>												
10 MAT11	2.67	2.83	2.00	2.00	2.00	-	-	-	1.50	1.50	-	1.50
10 PHY12	3.00	3.00	3.00	1.00	-	-	1.00	-	2.33	1.00	-	2.00
10 CIV13	3.00	2.83	2.67	3.00	2.00	2.00	3.00	2.00	2.00	1.00	3.00	1.50
10 EME14	2.67	2.17	2.00	2.17	2.00	1.00	1.00	-	-	-	-	2.17
10 ELE15	3.00	3.00	1.67	1.67	2.67	2.00	1.00	1.00	1.67	1.67	2.00	2.00
10 WSL16	2.83	2.00	3.00	2.17	-	1.00	1.00	-	2.50	1.17	1.00	1.50
10 PHL17	3.00	2.20	2.20	1.00	-	-	1.00	-	3.00	1.00	-	2.00
10 CIP18	-	-	-	-	-	1.00	1.00	3.00	1.00	2.00	-	1.00
<b>II Semester</b>												
10 MAT21	2.67	2.83	2.00	2.00	2.00	-	-	-	1.50	1.50	-	1.50
10 CHE22	2.83	2.83	3.00	2.17	2.00	1.00	1.00	1.60	2.00	-	-	2.00
10 CCP23	1.67	1.83	1.67	2.17	1.83	2.33	2.00	1.40	1.67	-	-	2.00
10 CED24	3.00	2.00	2.00	2.00	2.83	1.00	-	-	-	-	-	2.00
10 ELN25	3.00	2.83	2.00	1.00	1.00	1.83	1.67	1.00	2.17	1.00	1.25	2.00
10 CPL26	1.33	1.50	1.83	2.00	1.50	2.20	1.50	-	2.00	-	-	1.40
10 CHEL27	3.00	3.00	2.00	2.00	1.00	-	1.00	2.00	2.00	-	-	2.00
10 CIV28	1.17	2.00	2.00	1.75	1.67	2.00	1.80	1.25	1.50	2.00	2.00	2.00
<b>III Semester</b>												
10MAT31	2.67	2.83	2.00	2.00	2.00	-	-	-	1.50	1.50	-	1.50
10ES32	2.83	2.33	2.17	2.50	1.67	2.00	1.33	1.33	1.33	1.00	1.33	2.00
10ES33	3.00	2.67	2.83	2.33	1.50	1.33	1.33	1.50	1.33	1.33	1.50	1.33
10ES34	3.00	2.50	2.50	1.67	1.50	1.00	1.00	1.33	1.17	1.00	1.00	2.00
10EE35	3.00	1.33	1.50	1.50	1.17	1.33	1.20	1.67	1.33	1.17	2.50	2.00
10EE 36	3.00	2.50	2.17	2.50	1.00	1.67	2.33	2.00	2.17	2.33	2.50	3.00
10ESL37	3.00	3.00	3.00	3.00	3.00	1.00	1.00	1.00	2.00	2.00	1.00	2.00
10ESL38	3.00	3.00	3.00	3.00	3.00	1.00	1.00	1.00	2.00	2.00	1.00	2.33

IV Semester												
10MAT41	2.83	2.50	2.33	2.33	2.33	-	-	-	1.50	1.83	-	1.33
10ES42	3.00	2.00	2.17	1.83	2.00	1.00	1.50	1.00	2.00	1.33	1.67	2.00
10ES43	3.00	2.83	2.83	1.83	1.83	1.00	1.83	1.00	1.40	1.83	1.50	2.00
10EE44	3.00	3.00	2.67	1.67	2.83	3.00	1.83	1.00	1.00	1.00	-	2.00
10EE45	3.00	3.00	2.17	2.33	1.83	1.80	1.80	1.50	1.33	1.17	2.00	2.00
10EE46	3.00	2.33	2.67	2.33	1.67	1.67	2.00	1.00	1.67	1.67	1.67	1.67
10EEL47	3.00	3.00	3.00	3.00	3.00	1.00	1.00	1.00	2.00	2.00	1.00	2.00
10EEL48	3.00	3.00	3.00	3.00	3.00	1.00	1.00	1.00	2.00	2.00	1.00	2.00
V Semester												
10AL51	1.00	1.00	1.00	-	1.00	2.00	1.50	2.00	1.40	3.00	3.00	2.00
10EE52	3.00	3.00	2.00	2.67	1.67	2.67	1.00	1.00	2.00	2.83	1.00	2.00
10EE53	3.00	3.00	2.50	2.33	2.50	2.00	1.67	1.83	1.33	1.60	1.80	2.00
10EE54	3.00	3.00	1.33	2.00	2.00	1.33	1.33	1.00	1.50	1.50	1.00	2.00
10EE55	3.00	3.00	3.00	2.33	2.00	1.67	1.00	1.00	1.50	2.00	1.00	2.00
10EE56	3.00	3.00	3.00	1.33	2.33	2.00	2.17	1.50	1.00	1.67	1.00	2.00
10EEL57	3.00	3.00	3.00	3.00	3.00	1.50	2.00	2.00	1.00	1.00	1.00	2.00
10EEL58	3.00	3.00	3.00	3.00	3.00	3.00	2.00	1.00	1.00	2.00	2.00	2.00
VI Semester												
10EE61	3.00	3.00	3.00	1.83	1.83	2.33	2.00	1.60	2.00	2.00	2.00	3.00
10EE62	3.00	2.67	2.50	2.00	1.00	3.00	3.00	3.00	1.00	1.00	1.83	3.00
10EE63	3.00	2.83	2.83	2.83	2.67	1.00	2.00	1.00	2.00	2.83	1.00	3.00
10EE64	3.00	2.67	2.67	2.33	1.83	2.00	2.00	1.00	1.67	2.17	1.00	3.00
10EE65	3.00	2.83	3.00	3.00	3.00	1.00	2.00	1.00	2.00	2.83	1.00	3.00
10EE664	2.00	3.00	2.33	2.00	3.00	1.00	-	-	2.00	1.00	2.00	3.00
10EEL67	3.00	3.00	3.00	3.00	1.00	3.00	2.00	2.00	3.00	3.00	3.00	3.00
10EEL68	3.00	3.00	3.00	3.00	3.00	2.00	2.00	1.00	3.00	2.00	2.00	3.00
VII Semester												
10EE71	3.00	3.00	2.67	3.00	2.83	1.83	2.20	1.50	2.00	1.83	2.17	3.00
10EE72	3.00	2.67	2.50	2.00	1.00	3.00	3.00	3.00	1.00	1.00	1.83	3.00
10EE73	3.00	2.67	2.50	2.00	1.00	3.00	3.00	3.00	1.00	1.00	1.83	3.00
10EE74	3.00	2.83	2.83	2.83	1.17	1.17	1.33	2.00	2.00	2.00	2.00	3.00
10EE756	3.00	3.00	2.00	3.00	1.17	2.00	2.00	3.00	3.00	3.00	3.00	3.00
10EE761	3.00	3.00	3.00	1.83	1.67	2.33	2.00	1.60	2.00	2.00	2.00	3.00
10EEL77	3.00	2.67	2.50	2.00	1.00	3.00	3.00	3.00	3.00	3.00	2.00	3.00
10EEL78	3.00	3.00	2.67	3.00	2.83	1.83	2.20	1.50	3.00	3.00	2.00	3.00



VIII Semester												
10EE81	3.00	2.83	2.83	2.83	2.67	1.00	2.00	1.00	2.00	2.83	1.00	3.00
10EE82	3.00	3.00	2.67	3.00	2.83	1.83	2.20	1.50	2.00	1.83	2.17	3.00
10EE836	3.00	3.00	2.50	2.33	2.50	2.00	1.67	1.83	1.33	1.60	1.80	2.00
10EE842	3.00	2.83	2.83	2.83	2.67	1.00	2.00	1.00	2.00	2.83	1.00	3.00
10EEP85	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
10EES86	3.00	3.00	2.00	3.00	2.00	2.00	2.00	3.00	3.00	3.00	1.00	3.00

PSO's Matrix of all Courses Including First Year Courses

Table 3.1.3.2: Mapping courses with PSOs.

Course	PSO1	PSO2
<b>I SEMESTER</b>		
10 MAT11	1	1
10 PHY12	1	1
10 CIV13	-	1
10 EME14	-	1
10 ELE15	2	2
10 WSL16	-	1
10 PHL17	1	1
10 CIP18	-	1
<b>II SEMESTER</b>		
10 MAT21	1	1
10 CHE22	1	1
10 CCP23	2	1
10 CED24	3	1
10 ELN25	2	1
10 CPL26	1	1
10 CHEL27	1	1
10 CIV28	-	1
<b>III SEMESTER</b>		
10MAT31	1.00	1.00
10ES32	2.33	1.50
10ES33	2.17	1.67
10ES34	2.00	2.00
10EE35	2.33	2.33
10EE 36	3.00	3.00
10ESL37	3.00	2.00
10ESL38	3.00	1.00

IV SEMESTER		
10MAT41	1.00	1.00
10ES42	2.33	1.67
10ES43	3.00	2.00
10EE44	2.00	1.00
10EE45	3.00	2.17
10EE46	3.00	3.00
10EEL47	2.67	2.00
10EEL48	3.00	2.17
V SEMESTER		
10AL51	1.00	1.00
10EE52	2.00	1.00
10EE53	3.00	3.00
10EE54	3.00	3.00
10EE55	2.50	2.00
10EE56	3.00	2.00
10EEL57	3.00	1.83
10EEL58	3.00	3.00
VI SEMESTER		
10EE61	3.00	3.00
10EE62	3.00	3.00
10EE63	3.00	2.00
10EE64	3.00	2.83
10EE65	3.00	3.00
10EE664	2.00	1.00
10EEL67	3.00	3.00
10EEL68	3.00	3.00
VII SEMESTER		
10EE71	3.00	2.00
10EE72	2.00	3.00
10EE73	2.00	3.00
10EE74	3.00	3.00
10EE756	2.00	3.00
10EE761	3.00	3.00
10EEL77	2.00	3.00
10EEL78	3.00	2.00

VIII SEMESTER		
10EE81	3.00	3.00
10EE82	3.00	2.00
10EE836	3.00	3.00
10EE842	3.00	3.00
10EEP85	3.00	3.00
10EES86	3.00	3.00

### 3.2. Attainment of Course Outcomes (50)

#### 3.2.1. Describe the Assessment Processes Used to Gather the Data Upon which the Evaluation of Course Outcome is Based (10)

(Examples of data collection processes may include, but are not limited to, specific exam/tutorial questions, assignments, laboratory tests, project evaluation, student portfolios (A portfolio is a collection of artifacts that demonstrate skills, personal characteristics and accomplishments created by the student during study period), internally developed assessment exams, project presentations, oral exams etc.).

##### (A) Internal Tests/Exams:

- After commencement of the course, the Department will conduct three internal tests, scheduled in accordance with the university and college calendar of events. Care will be taken such that the teaching of at least 2 to 2.5 units would be completed before each test. The entire exam schedule will be monitored by an Internal Assessment (IA) Coordinator.
- The Course Coordinator will prepare the Question papers for the respective course and will be submitted to IA coordinator well in advance.
- The IA coordinator will conduct three IA tests as per calendar of events.
- The course coordinator will follow scheme and solutions for each test and evaluate the performance of students as per the assessment rubrics.
- The student obtaining less than 60% of the maximum marks are identified and Corrective and Preventive Action (CAPA) is taken.
- The Internal assessment marks are based on average of maximum score of two tests conducted (minimum of two tests are compulsory)
- Internal/Exam is discussed more in criteria 2.2.2

**(B) Laboratory Exam Evaluation:**

- Laboratory in-charge faculties will follow rubrics, which is set by the Department for evaluation of laboratory programs.
- Laboratory Exam Evaluation is discussed more in criteria 2.2.3

***Rubrics of evaluation for Laboratory Exam Evaluation:*****Table 3.2.1.1: Rubrics used for continuous evaluation in every lab session**

Parameters	Allocated Marks	High	Medium	Low
<b>Conduction</b>	2	Given circuit rigged up, got output/Program executed with output.	Given circuit rigged up with partial output/Given program was partially executed in the lab session.	Given circuit not rigged up/Given program was not executed in the lab session.
		2 Marks	1 Mark	0 Mark
<b>Viva Voce</b>	2	Student answered all the viva voce questions	Student Answered only a few viva voce questions	Student did not answer any viva voce question
		2 Marks	1 Mark	0 Mark
<b>Record writing</b>	6	completed record was submitted	Record was submitted but incomplete	Record was not submitted in the lab session
		4 - 6 Marks	1 - 3 Marks	0 Mark

**Table 3.2.1.2: Rubrics used for continuous Evaluation of lab internals**

Parameters	Allocated Marks	High	Medium	Low
<b>Write up</b>	5	Student was able to design and draw the circuit diagram with expected output/Program/algorithm written correctly.	Student was able to draw the circuit diagram but does not design/program partially known.	Student was unable to draw circuit diagram/program/algorithm not known.
		3 - 5 Marks	1 - 2 Marks	0 Mark

<b>Execution</b>	5	Student was able to conduct the given experiment with output.	Student was partially able to conduct the given experiment.	Student was not able to conduct given experiment.
		3 - 5 Marks	1 - 2 Marks	0 Mark
<b>Viva Voce</b>	5	Student answered all the questions.	Student answered only few question	Student did not answer any question
		A. - 5 Marks	1 - 2 Marks	0 Mark

**(C) Seminar Work Evaluation:**

- The Department selects a senior faculty member as a Seminar coordinator who along with other faculty would assess the Technical seminar presentations by students. He/She would ensure that the students choose advanced concepts in Electrical - Electronics and allied research areas with a lot of relevance and applicability.
- One seminar per student in the VIII semester would be conducted as per the schedule mentioned prior in Time Table and Department Calendar of events.
- Seminar coordinators follow rubrics, which is set by the department for evaluation of seminar
- Seminar coordinators will conduct one seminar per student. It will be evaluated by the seminar coordinator and marks will be submitted to the Department.

***Rubrics of evaluation for student technical seminars:*****Table 3.2.1.3: Seminar Assessment Rubrics**

<b>RUBRICS</b>	<b>Max Marks:50</b>
<b>Topic and Background survey</b>	20 % of Max Marks
<b>Slides and Report</b>	20 % of Max Marks
<b>Presentation skills</b>	20 % of Max Marks
<b>Content and Explanation</b>	30 % of Max Marks
<b>Q &amp; A</b>	10 % of Max Marks

**(D) Project Work Evaluation:**

- Project batches are formed as per the instruction given by project coordinators.
- Synopsis will be submitted to the project coordinators for scrutinizing. Project Batches are allotted to the internal guides based on the specialization and competency skills of the faculties.
- Each internal guide will continuously monitor their students on a weekly basis to observe the progress of the work.
- The project guide along with project coordinator conduct 3 project reviews as per the rubrics, which is set by the Department and the submit the Internal Assessment marks to the Head Of Department.
- External Project Viva voce is conducted by the panel of examiners deputed by the University. Based on the viva voce the marks are awarded to the students and submitted to university.
- The department will encourage students to participate in technical Expo and the project guides motivate and guide the students to publish in standard conference/journal forums.
- Project Work Evaluation is discussed more in criteria 2.2.3

***Rubrics of evaluation for Project Work Evaluation:*****Table 3.2.1.4: Project Assessment Rubrics**

<b>Review #</b>	<b>Agenda</b>	<b>Assessment</b>	<b>Review Assessment Weightage</b>	<b>Over all Weightage</b>
<b>Review 1</b>	Project Synopsis/Proposal Evaluation	Rubric R1	50	<b>(AVG R1,R2,R3, R4,R5)* 2 = 100</b>
<b>Review 2</b>	Mid-Term Project Evaluation	Rubric R2	50	
<b>Review 3</b>	End Semester Project Evaluation	Rubric R3	50	
<b>Review 4</b>	Project Report Evaluation	Rubric R4	50	
<b>Review 5</b>	Evaluation by Guide	Rubric R5	50	
<b>External Evaluation (100)</b>				<b>100</b>
<b>Total</b>				<b>200</b>

### 3.2.2. Record the Attainment of Course Outcomes of all Courses with Respect to Set Attainment Levels (40)

Program shall have set Course Outcome attainment levels for all courses.

(The attainment levels shall be set considering average performance levels in the university examination or any higher value set as target for the assessment years. Attainment level is to be measured in terms of student performance in internal assessments with respect to the Course Outcomes of a course in addition to the performance in the University examination)

**Example related to attainment levels Vs. targets: (The examples indicated are for reference only. Program may appropriately define levels)**

Attainment Level 1: **60%** students scoring more than University average percentage marks or set attainment level in the final examination.

Attainment Level 2: **70%** students scoring more than University average percentage marks or set attainment level in the final examination.

Attainment Level 3: **80%** students scoring more than University average percentage marks or set attainment level in the final examination.

- Attainment is measured in terms of actual percentage of students getting set percentage of marks.
- If targets are achieved then all the course outcomes are attained for that year. Program is expected to set higher targets for the following years as a part of continuous improvement.
- If targets are not achieved the program should put in place an action plan to attain the target in subsequent years.

#### **Measuring COs attained through University Examinations**

Target may be stated in terms of percentage of students getting more than the university average marks or more as selected by the Program in the final examination. For cases where the university does not provide useful indicators like average or median marks etc., the program may choose an attainment level on its own with justification.

**Measuring COs attainment through Internal Assessments :( The examples indicated are for reference only, Program may appropriately define levels).**

Target may be stated in terms of percentage of students getting more than class average marks or set by the program in each of the associated COs in the assessment instruments (midterm tests, assignments, mini projects, reports and presentations etc. as mapped with the COs)

#### **Example**

Mid-term test 1 addresses C202.1 and C202.2. Out of the maximum 20 marks for this test 12 marks are associated with C202.1 and 8 marks are associated with C202.2.

Examples related to attainment levels Vs. targets:

Attainment Level 1: **60%** students scoring more than 60% marks out of the relevant maximum marks.

Attainment Level 2: **70%** students scoring more than 60% marks out of the relevant maximum marks.

Attainment Level 3: **80%** students scoring more than 60% marks out of the relevant maximum marks.

- Attainment is measured in terms of actual percentage of students getting set percentage of marks.
- If targets are achieved then the C202.1 and C202.2 are attained for that year. Program is expected to set higher targets for the following years as a part of continuous improvement.

- If targets are not achieved the program should put in place an action plan to attain the target in subsequent years.

Similar targets and achievement are to be stated for the other midterm tests/internal assessment instruments.

#### Course Outcome Attainment:

For example:

Attainment through University Examination: Substantial i.e. 3

Attainment through Internal Assessment: Moderate i.e. 2

Assuming 80% weightage to University examination and 20% weightage to Internal assessment, the attainment calculations will be (80% of University level) + (20% of Internal level ) i.e. 80% of 3 + 20% of 2 = 2.4 + 0.4 = 2.8.

#### TARGET & ATTAINMENT LEVELS OF CO'S FOR INTERNAL ASSESSMENT FOR THE BATCH 2013-17

Table 3.2.2.1: Target & Attainment Levels Of CO's for Internal Assessment for the Batch 2013-17

SUBJECT CATEGORY	COURSE NAME & CODE	TARGET SET (MARKS) <i>Stated in terms of number of students scoring greater than or equal to the respective marks in the internal assessment for a maximum mark of 25.</i>	TARGET ATTAINMENT LEVEL (PERCENTAGE) <i>Respective percentage of the students scoring greater than or equal to the respective marks in the internal assessment is set as an attainment level and if the targets are achieved then all the course outcomes of the respective subject are attained for that year.</i>
Basic sciences and humanities	Engineering Mathematics I, II & III, IV (10MAT11, 21, 31, 41)	$\geq 17$	74%
	Engineering Physics (10PHY12)	$\geq 20$	70%
	Engineering Chemistry (10CHE22)		
	Constitution of India & Professional Ethics (10CIP18)	$\geq 16$	80%
	Environmental Sciences (10CIV28)	$\geq 16$	80%
Associated engineering sciences	Elements of Civil Engineering (10CIV13)	$\geq 16$	70%
	Elements of Mechanical Engineering (10EME14)	$\geq 18$	80%
	Computer Concepts & C programming (10CCP23)	$\geq 16$	70%
	Computer Aided Engineering Drawing (10CAED24)	$\geq 16$	80%



	<b>Basic Electronics</b> (10ELN25)	<b><math>\geq 16</math></b>	<b>70%</b>
<b>Fundamentals of Electrical &amp; Electronics</b>	<b>Basic Electrical Engineering</b> (10ELE15)	<b><math>\geq 16</math></b>	<b>75%</b>
	<b>Analog Electronic Circuits</b> (10ES32) <b>Network Analysis</b> (10ES34) <b>Control Systems</b> (10ES43) <b>Field Theory</b> (10EE44)	<b><math>\geq 16</math></b>	
	<b>Logic Design</b> (10ES33)	<b><math>\geq 17</math></b>	<b>70%</b>
	<b>Electrical and Electronic Measurements And Instrumentation</b> (10EE35)	<b><math>\geq 18</math></b>	<b>76%</b>
	<b>Electric Power Generation</b> (10EE36)	<b><math>\geq 20</math></b>	<b>82%</b>
	<b>Modern Control theory</b> (10EE55)	<b><math>\geq 18</math></b>	<b>70%</b>
	<b>Linear IC's and Applications</b> (10EE56)	<b><math>\geq 17</math></b>	<b>75%</b>
	<b>Electric Motors &amp; Generators</b>	<b>Transformers and Induction Machines</b> (10EE46)	<b><math>\geq 18</math></b>
<b>D.C. Machines and Synchronous Machines</b> (10EE54)		<b><math>\geq 18</math></b>	<b>70%</b>
<b>Electrical Machine Design</b> (10EE63)		<b><math>\geq 16</math></b>	<b>65%</b>
<b>E- CADD</b> (10EE65)		<b><math>\geq 20</math></b>	<b>75%</b>
<b>Embedded</b>	<b>Microcontrollers</b> (10ES42)	<b><math>\geq 18</math></b>	<b>72%</b>
	<b>Power Electronics</b> (10EE45)	<b><math>\geq 17</math></b>	<b>75%</b>
<b>Statistics / management / computer science subjects</b>	<b>Management and Entrepreneurship</b> (10AL51) <b>Object Oriented Programming using C++</b> (10EE664)	<b><math>\geq 18</math></b>	<b>80%</b>
<b>Signal Processing</b>	<b>Signals and Systems</b> (10EE52)	<b><math>\geq 17</math></b>	<b>74%</b>
	<b>Digital Signal Processing</b> (10EE64)	<b><math>\geq 18</math></b>	<b>80%</b>
<b>Power System-Generation-Transmission-Distribution</b>	<b>Transmission and Distribution</b> (10EE53) <b>Power System Analysis and Stability</b> (10EE61) <b>Power System Planning</b> (10EE761) <b>High Voltage Engineering</b> (10EE73)	<b><math>\geq 17</math></b>	<b>80%</b>
			<b>75%</b>

Electric System Design/Planning, Testing, Protection, Control & Analysis	Switchgear & Protection (10EE62) Computer Techniques in Power System Analysis (10EE71) Industrial Drives and Applications (10EE74) Testing and Commissioning of Electrical Equipment (10EE756) Electrical Design, Estimation and Costing (10EE81)	$\geq 18$	85%
	Power System Operation and Control (10EE82)	$\geq 17$	85%
Electric Generic-Utilization, Renewable Energy, Energy Auditing	Electrical Power Utilization (10EE72)	$\geq 17$	75%
	Renewable Energy Sources (10EE836)	$\geq 18$	85%
	Energy Auditing & Demand Side Management (10EE842)	$\geq 20$	90%
Project work	Project Work (10EEP75)	<i>Stated in terms of number of students scoring greater than or equal 84 marks in the internal assessment for a maximum mark of 100.</i>	<i>85% of the students scoring greater than or equal to the 84 marks in the internal assessment is set as an attainment level and if the targets are achieved then all the course outcomes are attained for that year.</i>
Seminar	Seminar (10EES86)	<i>Stated in terms of number of students scoring greater than or equal 38 marks in the internal assessment for a maximum mark of 50.</i>	<i>90% of the students scoring greater than or equal to the 38 marks in the internal assessment are set as and attainment level and if the targets are achieved then all the course outcomes are attained for that year.</i>
Laboratories	Workshop Lab (10WSL16) Engineering Physics Lab (10PHYL17) Engineering Chemistry Lab (10CHEL27) Computer Programming Lab (10CPL26)	<i>Stated in terms of number of students scoring greater than or equal 18 marks in the internal assessment for a maximum mark of 25.</i>	<i>80% of the students scoring greater than or equal to the 18 marks in the internal assessment is set as an attainment level and if the targets are achieved then all</i>

	<b>Analog Electronics Lab</b> (10ESL37) <b>Logic Design Lab</b> (10ESL38) <b>Microcontrollers Lab</b> (10ESL47) <b>Power Electronics Lab</b> (10EEL48) <b>Measurements and Circuit Simulation Laboratory</b> (10EEL57) <b>Transformers and Induction Machines Laboratory</b> (10EEL58) <b>D.C. Machines and Synchronous Machines Laboratory</b> (10EEL67) <b>Control Systems Laboratory</b> (10EEL68) <b>Relay and High Voltage Laboratory</b> (10EEL77) <b>Power System Simulation Laboratory</b> (10EEL78)	<p><i>Stated in terms of number of students scoring greater than or equal 20 marks in the internal assessment for a maximum mark of 25.</i></p>	<p><i>the course outcomes are attained for that year.</i></p>
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**TARGET & ATTAINMENT LEVELS OF COS USING INTERNAL ASSESSMENT (INTERNAL EXAMS) FOR BATCH 2013-2017**

**Table 3.2.2.2: Target & Attainment Levels Of COs Using Internal Assessment (Internal Exams) for Batch 2013-2017**

Course	INTERNAL ASSESSMENTS (COLLEGE EXAMS)											
	Targeted Percentage of COs						Attainment Percentage of COs					
	CO1	CO2	CO3	CO4	CO5	CO6	CO1	CO2	CO3	CO4	CO5	CO6
<b>I Semester</b>												
<b>10MAT11</b>	74	74	74	74	74	74	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>
<b>10CHE12</b>	70	70	70	70	70	70	<b>54</b>	<b>54</b>	<b>54</b>	<b>54</b>	<b>54</b>	<b>54</b>
<b>10CCP13</b>	70	70	70	70	70	70	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>
<b>10CAED14</b>	80	80	80	80	80	80	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>
<b>10ELN15</b>	70	70	70	70	70	70	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>
<b>10CPL16</b>	80	80	80	80	80	80	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>
<b>10CHEL17</b>	80	80	80	80	80	80	<b>87</b>	<b>87</b>	<b>87</b>	<b>87</b>	<b>87</b>	<b>87</b>
<b>10CIV18</b>	80	80	80	80	80	80	<b>97</b>	<b>97</b>	<b>97</b>	<b>97</b>	<b>97</b>	<b>97</b>
<b>II Semester</b>												
<b>10MAT21</b>	74	74	74	74	74	74	<b>87</b>	<b>87</b>	<b>87</b>	<b>87</b>	<b>87</b>	<b>87</b>
<b>10PHY22</b>	70	70	70	70	70	70	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>
<b>10CIV23</b>	70	70	70	70	70	70	<b>81</b>	<b>81</b>	<b>81</b>	<b>81</b>	<b>81</b>	<b>81</b>

<b>10EME24</b>	80	80	80	80	80	80	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>
<b>10ELE25</b>	75	75	75	75	75	75	<b>88</b>	<b>88</b>	<b>88</b>	<b>88</b>	<b>88</b>	<b>88</b>
<b>10WSL26</b>	80	80	80	80	80	80	<b>83</b>	<b>83</b>	<b>83</b>	<b>83</b>	<b>83</b>	<b>83</b>
<b>10PHYL27</b>	80	80	80	80	80	80	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>
<b>10CIP28</b>	80	80	80	80	80	80	<b>96</b>	<b>96</b>	<b>96</b>	<b>96</b>	<b>96</b>	<b>96</b>
<b>III Semester</b>												
<b>10MAT31</b>	74	74	74	74	74	74	<b>78</b>	<b>78</b>	<b>78</b>	<b>78</b>	<b>78</b>	<b>78</b>
<b>10ES32</b>	75	75	75	75	75	75	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>
<b>10ES33</b>	70	70	70	70	70	70	<b>70</b>	<b>70</b>	<b>70</b>	<b>70</b>	<b>70</b>	<b>70</b>
<b>10ES34</b>	75	75	75	75	75	75	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>
<b>10EE35</b>	76	76	76	76	76	76	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>
<b>10EE 36</b>	82	82	82	82	82	82	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>
<b>10ESL37</b>	80	80	80	80	80	80	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>
<b>10ESL38</b>	80	80	80	80	80	80	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>
<b>IV Semester</b>												
<b>10MAT41</b>	74	74	74	74	74	74	<b>81</b>	<b>81</b>	<b>81</b>	<b>81</b>	<b>81</b>	<b>81</b>
<b>10ES42</b>	72	72	72	72	72	72	<b>77</b>	<b>77</b>	<b>77</b>	<b>77</b>	<b>77</b>	<b>77</b>
<b>10ES43</b>	75	75	75	75	75	75	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>
<b>10EE44</b>	75	75	75	75	75	75	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>
<b>10EE45</b>	75	75	75	75	75	75	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>	<b>72</b>
<b>10EE46</b>	70	70	70	70	70	70	<b>71</b>	<b>71</b>	<b>71</b>	<b>71</b>	<b>71</b>	<b>71</b>
<b>10EEL47</b>	80	80	80	80	80	80	<b>78</b>	<b>78</b>	<b>78</b>	<b>78</b>	<b>78</b>	<b>78</b>
<b>10EEL48</b>	80	80	80	80	80	80	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>
<b>V Semester</b>												
<b>10AL51</b>	80	80	80	80	80	80	<b>88</b>	<b>88</b>	<b>88</b>	<b>88</b>	<b>88</b>	<b>88</b>
<b>10EE52</b>	74	74	74	74	74	74	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>	<b>79</b>
<b>10EE53</b>	80	80	80	80	80	80	<b>54</b>	<b>54</b>	<b>54</b>	<b>54</b>	<b>54</b>	<b>54</b>
<b>10EE54</b>	70	70	70	70	70	70	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>	<b>69</b>
<b>10EE55</b>	70	70	70	70	70	70	<b>73</b>	<b>73</b>	<b>73</b>	<b>73</b>	<b>73</b>	<b>73</b>
<b>10EE56</b>	75	75	75	75	75	75	<b>61</b>	<b>61</b>	<b>61</b>	<b>61</b>	<b>61</b>	<b>61</b>
<b>10EEL57</b>	80	80	80	80	80	80	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>
<b>10EEL58</b>	80	80	80	80	80	80	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>

VI Semester												
<b>10EE61</b>	80	80	80	80	80	80	75	75	75	75	75	75
<b>10EE62</b>	85	85	85	85	85	85	83	83	83	83	83	83
<b>10EE63</b>	65	65	65	65	65	65	62	62	62	62	62	62
<b>10EE64</b>	80	80	80	80	80	80	84	84	84	84	84	84
<b>10EE65</b>	75	75	75	75	75	75	89	89	89	89	89	89
<b>10EE664</b>	80	80	80	80	80	80	82	82	82	82	82	82
<b>10EEL67</b>	80	80	80	80	80	80	80	80	80	80	80	80
<b>10EEL68</b>	80	80	80	80	80	80	67	67	67	67	67	67
VII Semester												
<b>10EE71</b>	85	85	85	85	85	85	87	87	87	87	87	87
<b>10EE72</b>	75	75	75	75	75	75	67	67	67	67	67	67
<b>10EE73</b>	75	75	75	75	75	75	64	64	64	64	64	64
<b>10EE74</b>	85	85	85	85	85	85	89	89	89	89	89	89
<b>10EE756</b>	85	85	85	85	85	85	85	85	85	85	85	85
<b>10EE761</b>	80	80	80	80	80	80	72	72	72	72	72	72
<b>10EEL77</b>	80	80	80	80	80	80	73	73	73	73	73	73
<b>10EEL78</b>	80	80	80	80	80	80	93	93	93	93	93	93
VIII Semester												
<b>10EE81</b>	85	85	85	85	85	85	81	81	81	81	81	81
<b>10EE82</b>	85	85	85	85	85	85	59	59	59	59	59	59
<b>10EE836</b>	85	85	85	85	85	85	77	77	77	77	77	77
<b>10EE842</b>	90	90	90	90	90	90	96	96	96	96	96	96
<b>10EEP85</b>	85	85	85	85	85	85	86	86	86	86	86	86
<b>10EES86</b>	90	90	90	90	90	90	93	93	93	93	93	93

## ATTAINMENT LEVELS VS TARGETS FOR INTERNAL ASSESSMENT

Table 3.2.2.3: Attainment Levels vs Targets for Internal Assessment

<p><b>For subjects whose internal assessment target set is greater than or equal to X(<math>\geq</math>X) in the internal assessment for a maximum marks of 25</b></p>	<p><b>EXAMPLE</b>  <b>In Energy Auditing &amp; Demand Side Management (10EE842), set internal assessment target is <math>\geq</math>20 for a maximum marks of 25</b>  <b>Target attainment in percentage is 90%</b>  <b>Attainment Percentage is 96%</b></p>
<p><b>Attainment Level 1: Is set when the target is lower than 20% or less is obtained out of the relevant maximum marks.</b></p>	<p><b>Attainment Level 1:</b> Not applicable</p>
<p><b>Attainment Level 2: Is set when the target lie between 10% - 20 % out of the relevant maximum marks.</b></p>	<p><b>Attainment Level 2:</b> Not applicable</p>
<p><b>Attainment Level 3: Is set when the target is equal to or more is obtained out of the relevant maximum marks.</b></p>	<p><b>Attainment Level 3: Is set, as 96% students scored <math>\geq</math>20 marks out of the relevant maximum marks.</b></p>

The bar chart of internal direct assessment of the entire subject from first semester to eighth semester of 2013-2017 batch are shown in Figures 3.2.2.1-3.2.2.8.

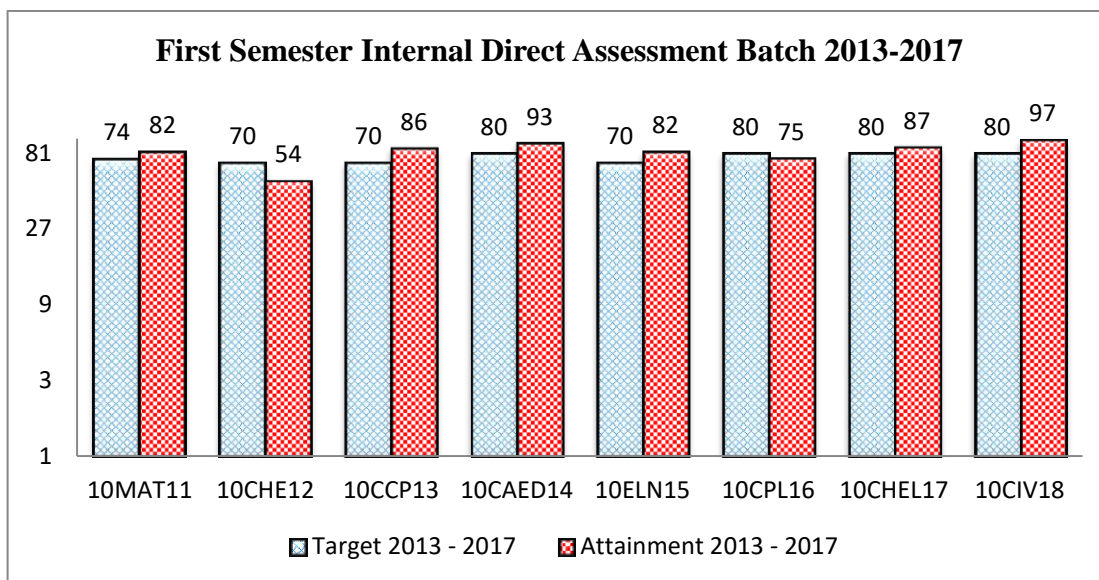


Figure 3.2.2.1: First Semester Internal Direct Assessment

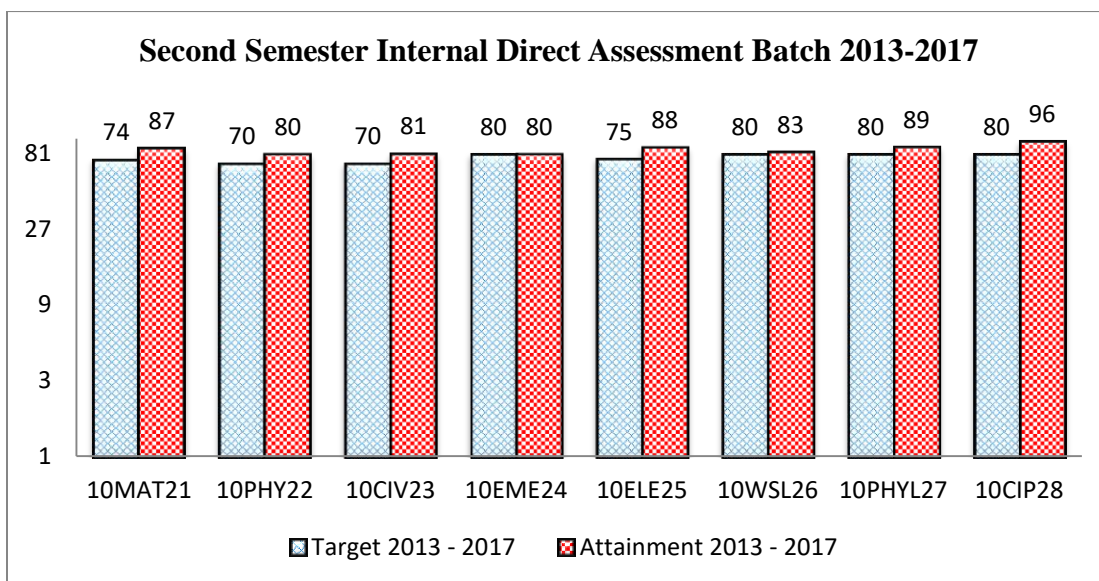


Figure 3.2.2.2: Second Semester Internal Direct Assessment

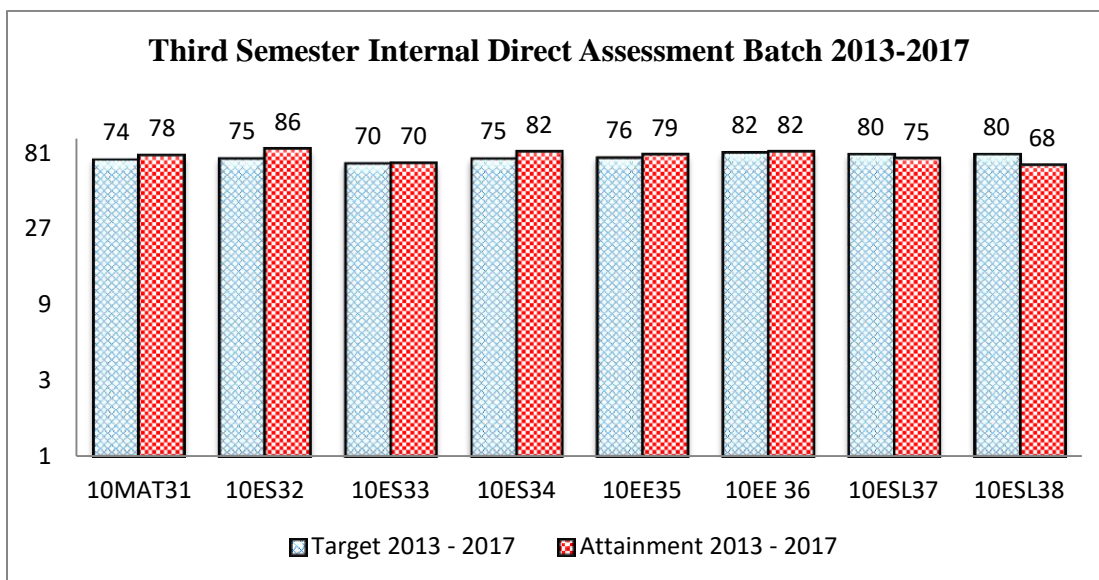


Figure 3.2.2.3: Third Semester Internal Direct Assessment

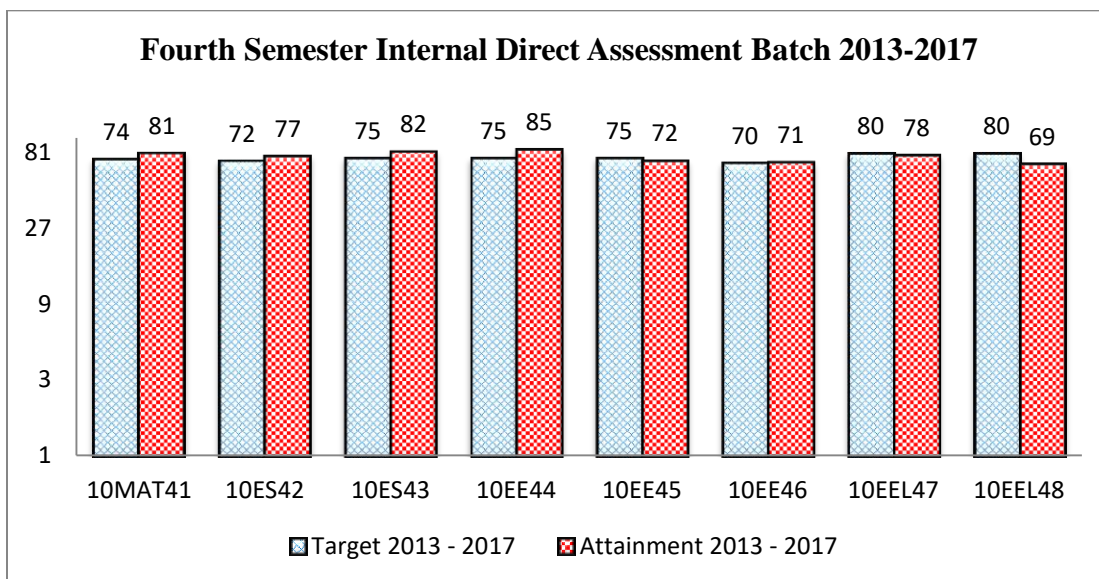


Figure 3.2.2.4: Fourth Semester Internal Direct Assessment



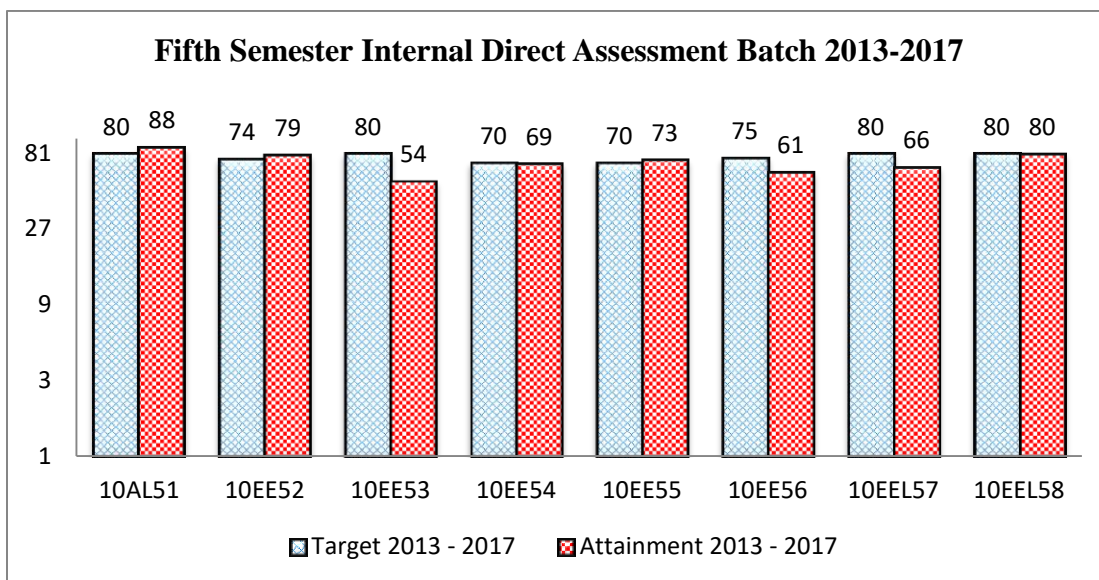


Figure 3.2.2.5: Fifth Semester Internal Direct Assessment

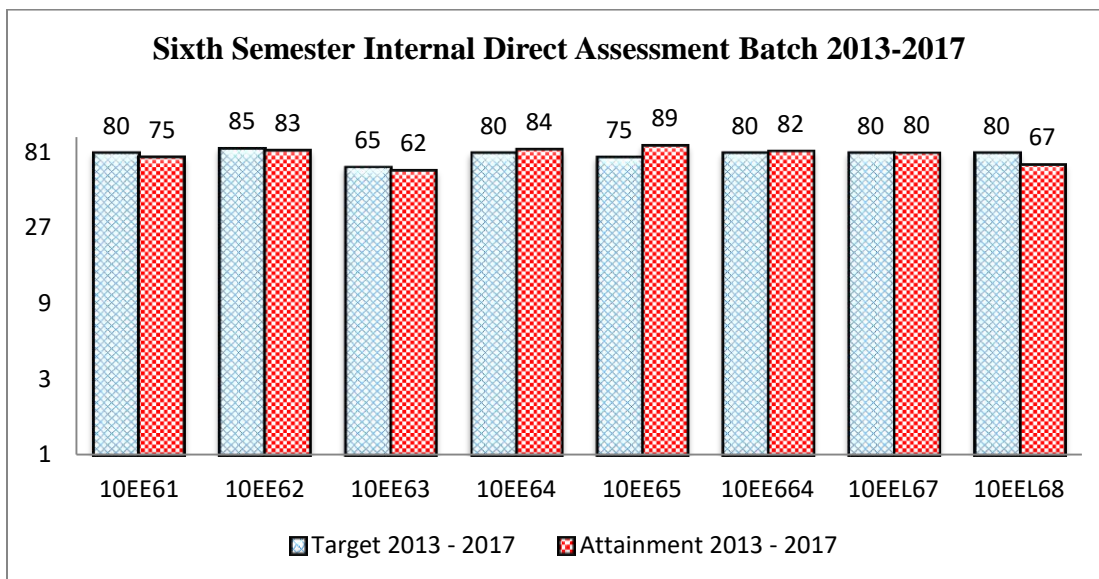


Figure 3.2.2.6: Sixth Semester Internal Direct Assessment

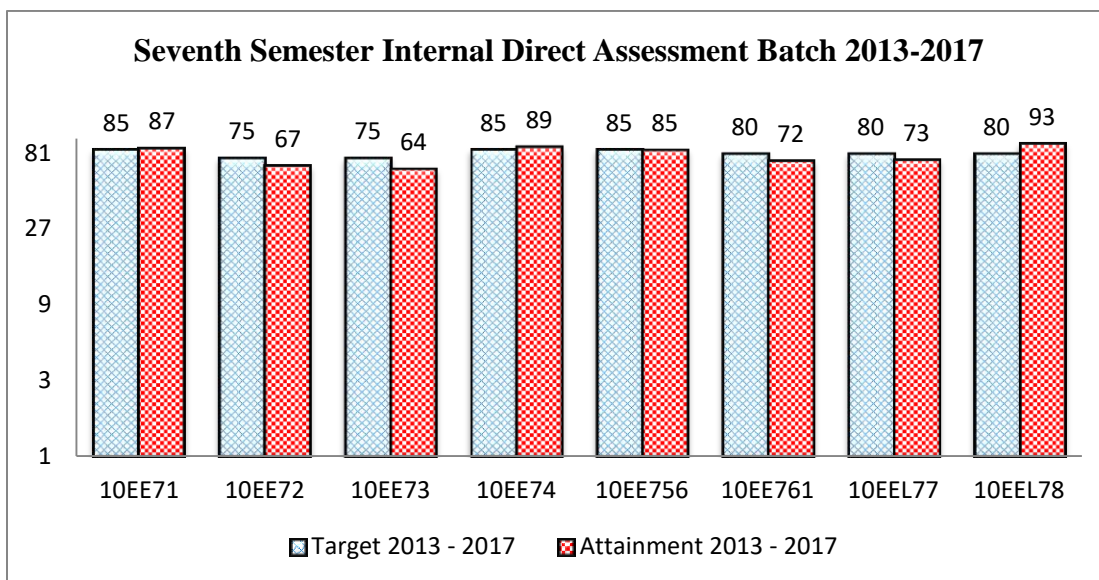


Figure 3.2.2.7: Seventh Semester Internal Direct Assessment

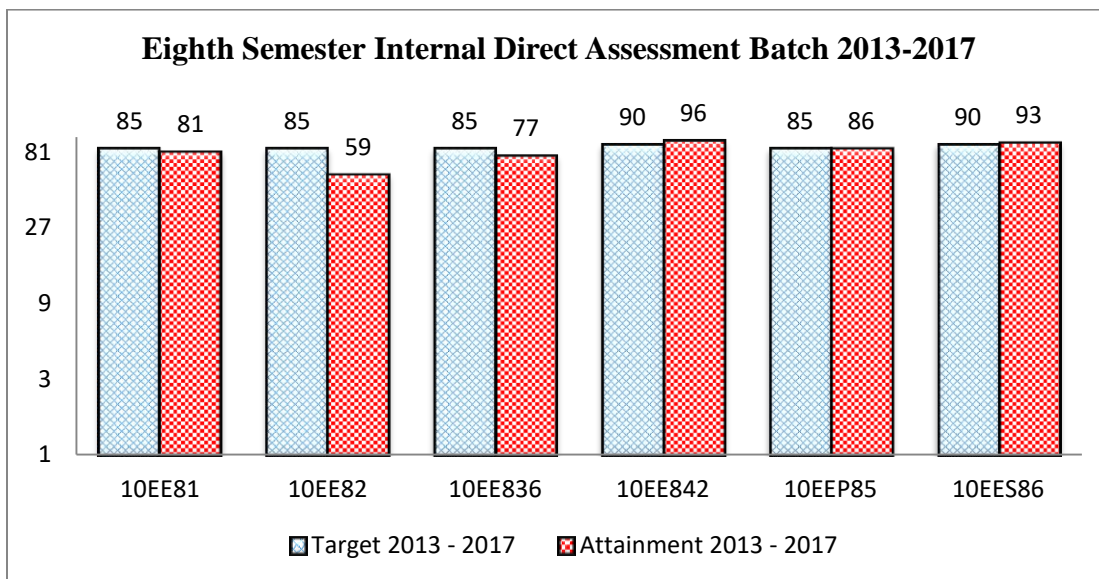


Figure 3.2.2.8: Eighth Semester Internal Direct Assessment

**TARGET & ATTAINMENT LEVELS OF CO'S FOR EXTERNAL ASSESSMENT FOR  
BATCH 2013-17**

**Table 3.2.2.4: Target & Attainment Levels Of CO's For External Assessment For The Batch 2013-17**

<b>SUBJECT CATEGORY</b>	<b>COURSE NAME &amp; CODE</b>	<b>TARGET SET (MARKS)</b>	<b>TARGET ATTAINMENT LEVEL (PERCENTAGE)</b>
<b>Basic sciences and humanities</b>	<b>Engineering Mathematics I, II &amp; III, IV</b> (10MAT11, 21, 31, 41)	<i>Stated in terms of number of students scoring greater than or equal to the 40 (&gt;=40) marks in the external assessment exam, conducted for a maximum mark of 100.</i>	<i>75% of the students scoring greater than or equal 40marks in the external assessment exam is set as an attainment level and if the target is achieved then all the course outcomes are attained for that year.</i>
	<b>Engineering Physics</b> (10PHY12)		
	<b>Engineering Chemistry</b> (10CHE22)		
	<b>Constitution of India &amp; Professional Ethics</b> (10CIP18)		
	<b>Environmental Sciences</b> (10CIV28)		
<b>Associated engineering sciences</b>	<b>Elements of Civil Engineering</b> (10CIV13)	-do-	-do-
	<b>Elements of Mechanical Engineering</b> (10EME14)		
	<b>Computer Concepts &amp; C programming</b> (10CCP23)		
	<b>Computer Aided Engineering Drawing</b> (10CAED24)		
	<b>Basic Electronics</b> (10ELN25)		
<b>Fundamentals of Electrical &amp; Electronics</b>	<b>Basic Electrical Engineering</b> (10ELE15)	-do-	-do-
	<b>Analog Electronic Circuits</b> (10ES32)		
	<b>Network Analysis</b> (10ES34)		
	<b>Control Systems</b> (10ES43)		
	<b>Field Theory</b> (10EE44)		
	<b>Logic Design</b> (10ES33)		
	<b>Electrical and Electronic Measurements And Instrumentation</b> (10EE35)		
<b>Electric Power Generation</b> (10EE36)			
<b>Modern Control theory</b> (10EE55)			
<b>Linear IC's and Applications</b> (10EE56)			

<b>Electric Motors &amp; Generators</b>	<b>Transformers and Induction Machines (10EE46)</b>	-do-	-do-
	<b>D.C. Machines and Synchronous Machines (10EE54)</b>		
	<b>Electrical Machine Design (10EE63)</b>		
	<b>E- CADD (10EE65)</b>		
<i>Embedded</i>	<b>Microcontrollers (10ES42)</b>	-do-	-do-
	<b>Power Electronics (10EE45)</b>		
<i>Statistics / management / computer science subjects</i>	<b>Management and Entrepreneurship (10AL51)</b> <b>Object Oriented Programming using C++ (10EE664)</b>	-do-	-do-
<i>Signal Processing</i>	<b>Signals and Systems (10EE52)</b>	-do-	-do-
	<b>Digital Signal Processing (10EE64)</b>		
<i>Power System-Generation-Transmission-Distribution</i>	<b>Transmission and Distribution (10EE53)</b> <b>Power System Analysis and Stability (10EE61)</b> <b>Power System Planning (10EE761)</b> <b>High Voltage Engineering(10EE73)</b>	-do-	-do-
<b>Electric System Design/Planning, Testing, Protection, Control &amp; Analysis</b>	<b>Switchgear &amp; Protection (10EE62)</b> <b>Computer Techniques in Power System Analysis (10EE71)</b> <b>Industrial Drives and Applications (10EE74)</b> <b>Testing and Commissioning of Electrical Equipment (10EE756)</b> <b>Electrical Design, Estimation and Costing (10EE81)</b>	-do-	-do-
	<b>Power System Operation and Control (10EE82)</b>		
<i>Electric Generic-Utilization, Renewable Energy, Energy Auditing</i>	<b>Electrical Power Utilization (10EE72)</b>	-do-	-do-
	<b>Renewable Energy Sources (10EE836)</b>		
	<b>Energy Auditing &amp; Demand Side Management (10EE842)</b>		
<i>Project work</i>	<b>Project Work (10EEP75)</b>	<i>Stated in terms of number of students scoring greater than or equal 85 marks in the external assessment for a maximum mark of 100.</i>	<i>90% of the students scoring greater than or equal to the 85 marks in the external assessment is set as an attainment level and if the targets are achieved then all the course outcomes are attained for that year.</i>

<b>Laboratories</b>	<b>Workshop Lab (10WSL16)</b> <b>Engineering Physics Lab (10PHYL17)</b> <b>Engineering Chemistry Lab (10CHEL27)</b> <b>Computer Programming Lab (10CPL26)</b> <b>Analog Electronics Lab (10ESL37)</b> <b>Logic Design Lab (10ESL38)</b> <b>Microcontrollers Lab (10EEL47)</b> <b>Power Electronics Lab (10EEL48)</b> <b>Measurements and Circuit Simulation Laboratory (10EEL57)</b> <b>Transformers and Induction Machines Laboratory (10EEL58)</b> <b>D.C. Machines and Synchronous Machines Laboratory (10EEL67)</b> <b>Control Systems Laboratory (10EEL68)</b> <b>Relay and High Voltage Laboratory (10EEL77)</b> <b>Power System Simulation Laboratory (10EEL78)</b>	<p><i>Stated in terms of number of students scoring greater than or equal 30 marks in the external assessment for a maximum mark of 50.</i></p>	<p><i>90% of the students scoring greater than or equal to the 30 marks in the external assessment is set as attainment level and if the targets are achieved then all the course outcomes are attained for that year.</i></p>
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### TARGET & ATTAINMENT LEVELS OF COS USING EXTERNAL ASSESSMENTS (EXTERNAL EXAMS) FOR BATCH 2013-2017

**Table 3.2.2.5: Target & Attainment Levels Of COs Using External Assessments (External Exams) For Batch 2013-2017**

Course	EXTERNAL ASSESSMENTS (UNIVERSITY EXAMS)											
	Targeted Percentage of COs						Attainment Percentage of COs					
	CO1	CO2	CO3	CO4	CO5	CO6	CO1	CO2	CO3	CO4	CO5	CO6
<b>I Semester</b>												
<b>10MAT11</b>	75	75	75	75	75	75	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>
<b>10CHE12</b>	75	75	75	75	75	75	<b>70</b>	<b>70</b>	<b>70</b>	<b>70</b>	<b>70</b>	<b>70</b>
<b>10CCP13</b>	75	75	75	75	75	75	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>
<b>10CAED14</b>	75	75	75	75	75	75	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>
<b>10ELN15</b>	75	75	75	75	75	75	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>
<b>10CPL16</b>	90	90	90	90	90	90	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>10CHEL17</b>	90	90	90	90	90	90	<b>99</b>	<b>99</b>	<b>99</b>	<b>99</b>	<b>99</b>	<b>99</b>
<b>10CIV18</b>	75	75	75	75	75	75	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

II Semester												
10MAT21	75	75	75	75	75	75	91	91	91	91	91	91
10PHY22	75	75	75	75	75	75	86	86	86	86	86	86
10CIV23	75	75	75	75	75	75	93	93	93	93	93	93
10EME24	75	75	75	75	75	75	91	91	91	91	91	91
10ELE25	75	75	75	75	75	75	94	94	94	94	94	94
10WSL26	90	90	90	90	90	90	100	100	100	100	100	100
10PHYL27	90	90	90	90	90	90	99	99	99	99	99	99
10CIP28	75	75	75	75	75	75	94	94	94	94	94	94
III Semester												
10MAT31	75	75	75	75	75	75	88	88	88	88	88	88
10ES32	75	75	75	75	75	75	41	41	41	41	41	41
10ES33	75	75	75	75	75	75	62	62	62	62	62	62
10ES34	75	75	75	75	75	75	52	52	52	52	52	52
10EE35	75	75	75	75	75	75	73	73	73	73	73	73
10EE 36	75	75	75	75	75	75	90	90	90	90	90	90
10ESL37	90	90	90	90	90	90	92	92	92	92	92	92
10ESL38	90	90	90	90	90	90	82	82	82	82	82	82
IV Semester												
10MAT41	75	75	75	75	75	75	84	84	84	84	84	84
10ES42	75	75	75	75	75	75	37	37	37	37	37	37
10ES43	75	75	75	75	75	75	77	77	77	77	77	77
10EE44	75	75	75	75	75	75	58	58	58	58	58	58
10EE45	75	75	75	75	75	75	70	70	70	70	70	70
10EE46	75	75	75	75	75	75	55	55	55	55	55	55
10EEL47	90	90	90	90	90	90	82	82	82	82	82	82
10EEL48	90	90	90	90	90	90	92	92	92	92	92	92
V Semester												
10AL51	75	75	75	75	75	75	94	94	94	94	94	94
10EE52	75	75	75	75	75	75	63	63	63	63	63	63
10EE53	75	75	75	75	75	75	84	84	84	84	84	84
10EE54	75	75	75	75	75	75	70	70	70	70	70	70
10EE55	75	75	75	75	75	75	88	88	88	88	88	88
10EE56	75	75	75	75	75	75	56	56	56	56	56	56
10EEL57	90	90	90	90	90	90	95	95	95	95	95	95
10EEL58	90	90	90	90	90	90	89	89	89	89	89	89

VI Semester												
<b>10EE61</b>	75	75	75	75	75	75	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>
<b>10EE62</b>	75	75	75	75	75	75	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>
<b>10EE63</b>	75	75	75	75	75	75	<b>83</b>	<b>83</b>	<b>83</b>	<b>83</b>	<b>83</b>	<b>83</b>
<b>10EE64</b>	75	75	75	75	75	75	<b>61</b>	<b>61</b>	<b>61</b>	<b>61</b>	<b>61</b>	<b>61</b>
<b>10EE65</b>	75	75	75	75	75	75	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>10EE664</b>	75	75	75	75	75	75	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>
<b>10EEL67</b>	90	90	90	90	90	90	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>
<b>10EEL68</b>	90	90	90	90	90	90	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>
VII Semester												
<b>10EE71</b>	75	75	75	75	75	75	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>
<b>10EE72</b>	75	75	75	75	75	75	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>
<b>10EE73</b>	75	75	75	75	75	75	<b>78</b>	<b>78</b>	<b>78</b>	<b>78</b>	<b>78</b>	<b>78</b>
<b>10EE74</b>	75	75	75	75	75	75	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>
<b>10EE756</b>	75	75	75	75	75	75	<b>96</b>	<b>96</b>	<b>96</b>	<b>96</b>	<b>96</b>	<b>96</b>
<b>10EE761</b>	75	75	75	75	75	75	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>
<b>10EEL77</b>	90	90	90	90	90	90	<b>99</b>	<b>99</b>	<b>99</b>	<b>99</b>	<b>99</b>	<b>99</b>
<b>10EEL78</b>	90	90	90	90	90	90	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>
VIII Semester												
<b>10EE81</b>	75	75	75	75	75	75	<b>97</b>	<b>97</b>	<b>97</b>	<b>97</b>	<b>97</b>	<b>97</b>
<b>10EE82</b>	75	75	75	75	75	75	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>
<b>10EE836</b>	75	75	75	75	75	75	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>10EE842</b>	75	75	75	75	75	75	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>
<b>10EEP85</b>	90	90	90	90	90	90	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>

## ATTAINMENT LEVELS VS TARGETS FOR EXTERNAL ASSESSMENT

Table 3.2.2.6: Attainment Levels vs Targets for External Assessment

<p><b>For subjects whose internal assessment target set is greater than or equal to X(<math>\geq</math>X) in the external assessment for a maximum marks of 100</b></p>	<p><b>EXAMPLE</b>  <b>In Energy Auditing &amp; Demand Side Management (10EE842), set internal assessment target is <math>\geq</math>40 for a maximum marks of 100</b>  <b>Target attainment in percentage is 75%</b>  <b>Attainment Percentage is 92%</b></p>
<p><b>Attainment Level 1: Is set when the target is lower than 20% or less is obtained out of the relevant maximum marks.</b></p>	<p><b>Attainment Level 1:</b> Not applicable</p>
<p><b>Attainment Level 2: Is set when the target lie between 10% - 20 % out of the relevant maximum marks.</b></p>	<p><b>Attainment Level 2:</b> Not applicable</p>
<p><b>Attainment Level 3: Is set when the target is equal to or more is obtained out of the relevant maximum marks.</b></p>	<p><b>Attainment Level 3: Is set, as 92% students scored <math>\geq</math>40 marks out of the relevant maximum marks.</b></p>

The bar chart of external direct assessment of the entire subject from first semester to eighth semester of 2013-2017 batch are shown in Figures 3.2.2.9-3.2.2.15.



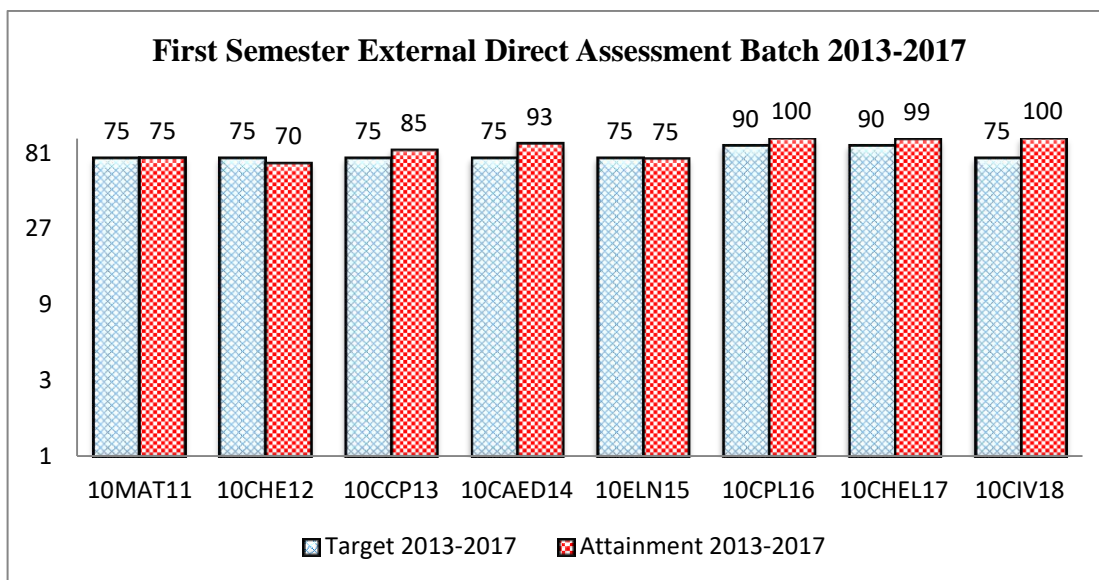


Figure 3.2.2.9: First Semester External Direct Assessment

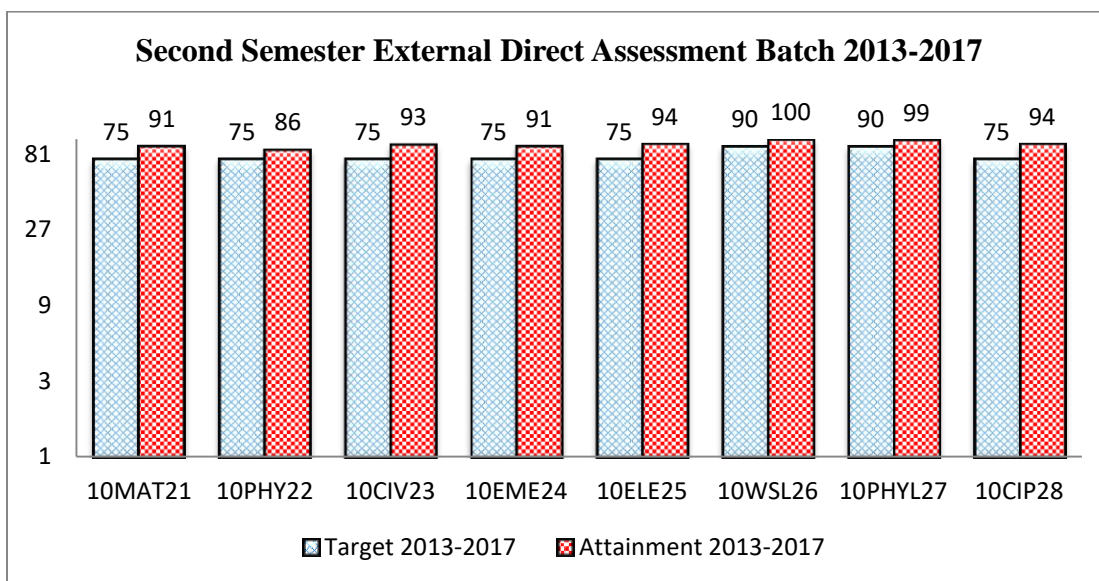


Figure 3.2.2.10: Second Semester External Direct Assessment

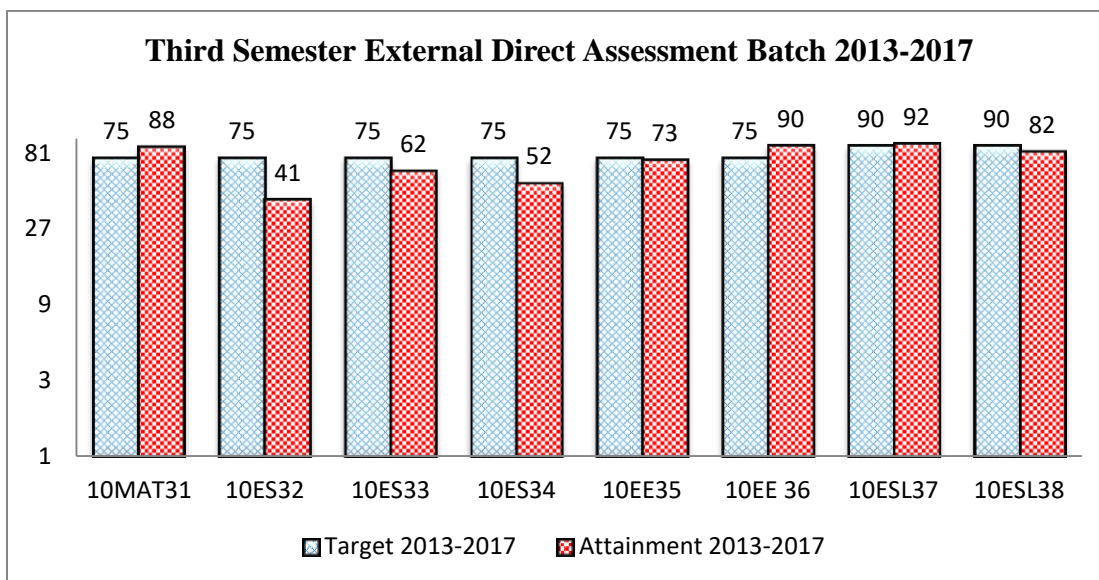


Figure 3.2.2.11: Third Semester External Direct Assessment

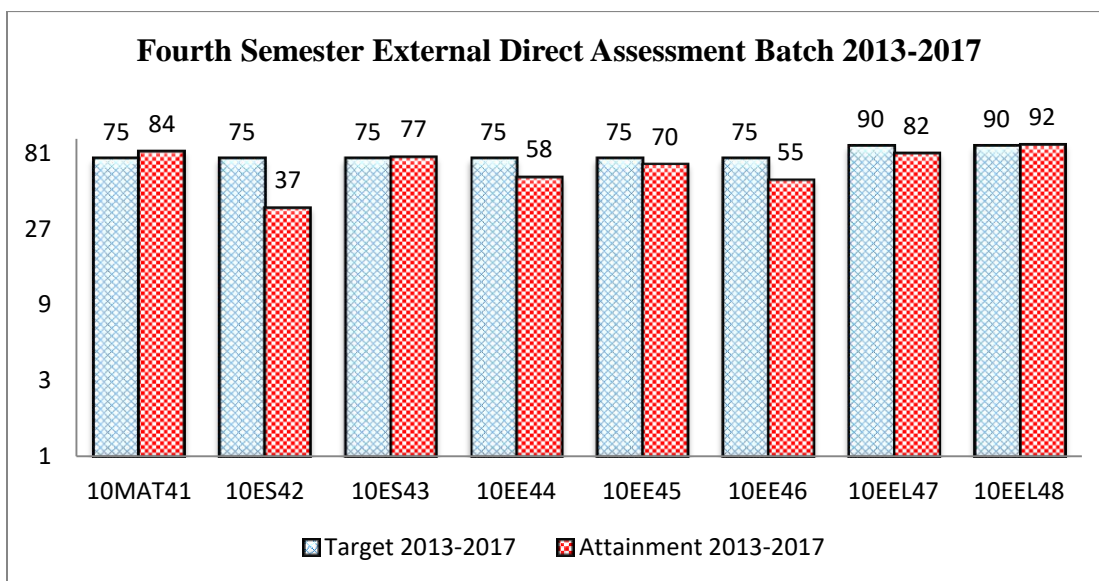


Figure 3.2.2.12: Fourth Semester External Direct Assessment

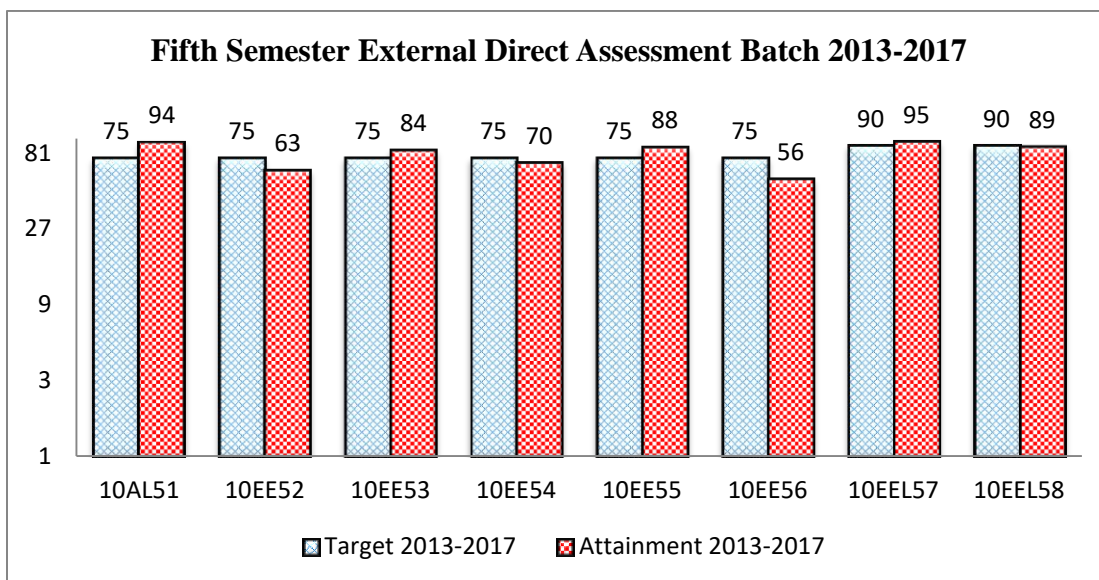


Figure 3.2.2.13: Fifth Semester External Direct Assessment

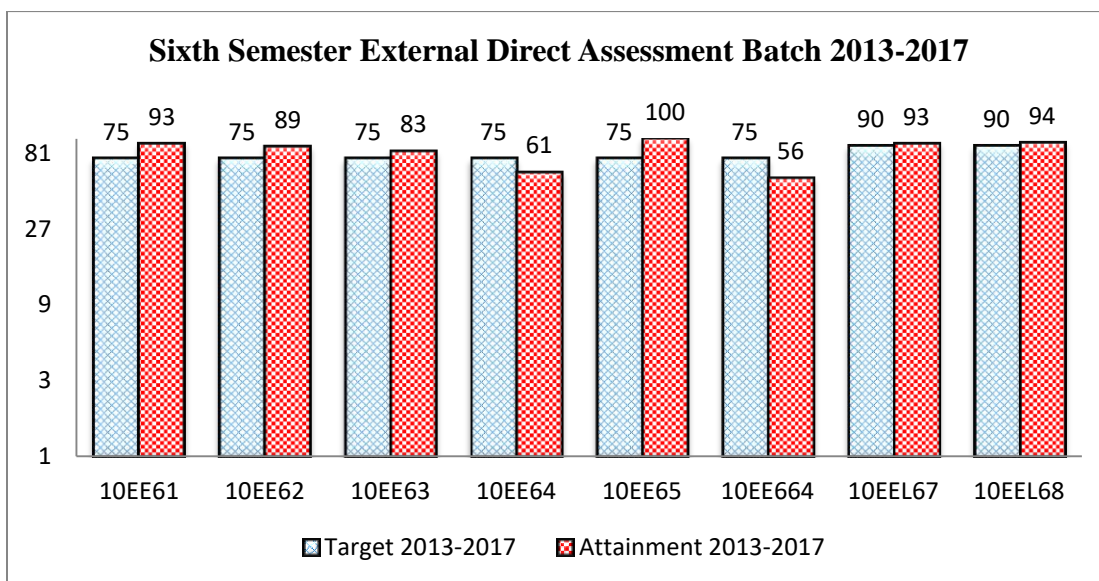


Figure 3.2.2.14: Sixth Semester External Direct Assessment

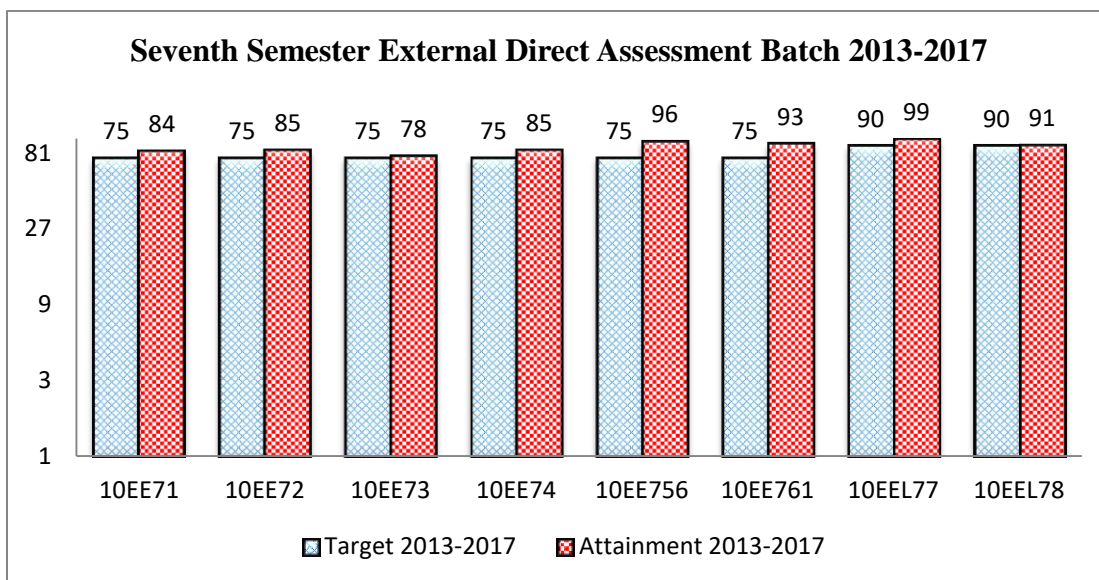


Figure 3.2.2.15: Seventh Semester External Direct Assessment

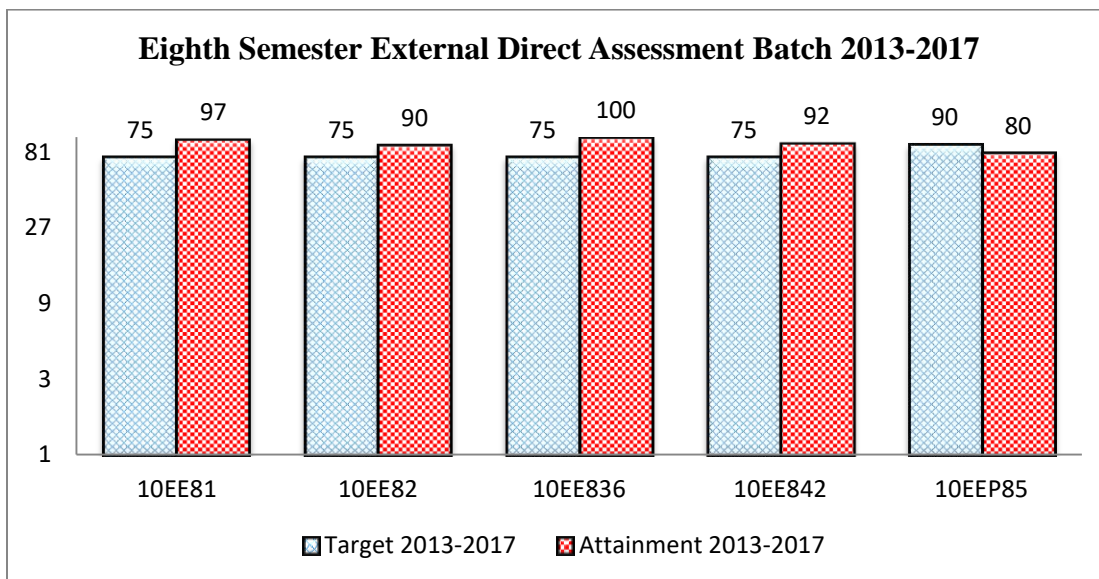


Figure 3.2.2.15: Eighth Semester External Direct Assessment

## COURSE OUTCOMES ATTAINMENT LEVELS FOR BATCH 2013-2017

Table 3.2.2.7: Course Outcomes Attainment Levels for Batch 2013-2017

Course	EXTERNAL ASSESSMENTS (UNIVERSITY EXAMS)												CO attainment Level All Cos	
	Attainment levels of COs - Internal exams						Attainment levels of COs - External exams							
	CO1	CO2	CO3	CO4	CO5	CO6	CO1	CO2	CO3	CO4	CO5	CO6		
<b>I Semester</b>														
10MAT11	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10CHE12	1	1	1	1	1	1	2	2	2	2	2	2	2	1.8
10CCP13	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10CAED14	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10ELN15	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10CPL16	2	2	2	2	2	2	3	3	3	3	3	3	3	2.8
10CHEL17	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10CIV18	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
<b>II Semester</b>														
10MAT21	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10PHY22	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10CIV23	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10EME24	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10ELE25	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10WSL26	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10PHYL27	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10CIP28	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
<b>III Semester</b>														
10MAT31	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10ES32	3	3	3	3	3	3	1	1	1	1	1	1	1	1.4
10ES33	3	3	3	3	3	3	1	1	1	1	1	1	1	1.4
10ES34	3	3	3	3	3	3	1	1	1	1	1	1	1	1.4
10EE35	3	3	3	3	3	3	2	2	2	2	2	2	2	2.2
10EE 36	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10ESL37	2	2	2	2	2	2	3	3	3	3	3	3	3	2.8
10ESL38	1	1	1	1	1	1	2	2	2	2	2	2	2	1.8
<b>IV Semester</b>														
10MAT41	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10ES42	3	3	3	3	3	3	1	1	1	1	1	1	1	1.4
10ES43	3	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10EE44	3	3	3	3	3	3	1	1	1	1	1	1	1	1.4
10EE45	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0
10EE46	3	3	3	3	3	3	1	1	1	1	1	1	1	1.4
10EEL47	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0
10EEL48	1	1	1	1	1	1	3	3	3	3	3	3	3	2.6

V Semester													
10AL51	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10EE52	3	3	3	3	3	3	1	1	1	1	1	1	1.4
10EE53	1	1	1	1	1	1	3	3	3	3	3	3	2.6
10EE54	3	3	3	3	3	3	2	2	2	2	2	2	2.2
10EE55	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10EE56	1	1	1	1	1	1	1	1	1	1	1	1	1.0
10EEL57	1	1	1	1	1	1	3	3	3	3	3	3	2.6
10EEL58	3	3	3	3	3	3	2	2	2	2	2	2	2.2
VI Semester													
10EE61	2	2	2	2	2	2	3	3	3	3	3	3	2.8
10EE62	2	2	2	2	2	2	3	3	3	3	3	3	2.8
10EE63	2	2	2	2	2	2	3	3	3	3	3	3	2.8
10EE64	3	3	3	3	3	3	1	1	1	1	1	1	1.4
10EE65	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10EE664	3	3	3	3	3	3	1	1	1	1	1	1	1.4
10EEL67	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10EEL68	1	1	1	1	1	1	3	3	3	3	3	3	2.6
VII Semester													
10EE71	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10EE72	2	2	2	2	2	2	3	3	3	3	3	3	2.8
10EE73	1	1	1	1	1	1	3	3	3	3	3	3	2.6
10EE74	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10EE756	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10EE761	2	2	2	2	2	2	3	3	3	3	3	3	2.8
10EEL77	2	2	2	2	2	2	3	3	3	3	3	3	2.8
10EEL78	3	3	3	3	3	3	3	3	3	3	3	3	3.0
VIII Semester													
10EE81	2	2	2	2	2	2	3	3	3	3	3	3	2.8
10EE82	1	1	1	1	1	1	3	3	3	3	3	3	2.6
10EE836	2	2	2	2	2	2	3	3	3	3	3	3	2.8
10EE842	3	3	3	3	3	3	3	3	3	3	3	3	3.0
10EEP85	3	3	3	3	3	3	2	2	2	2	2	2	2.2
10EEP86	3	3	3	3	3	3	-	-	-	-	-	-	0.6

**3.3. Attainment of Program Outcomes and Program Specific Outcomes (50)****3.3.1. Describe Assessment Tools and Processes Used for Measuring the Attainment of Each of the Program Outcomes and Program Specific Outcomes (10)**

(Describe the assessment tools and processes used to gather the data upon which the evaluation of each of the Program Outcomes and Program Specific Outcomes is based indicating the frequency with which these processes are carried out. Describe the assessment processes that demonstrate the degree to which the Program Outcomes and Program Specific Outcomes are attained and document the attainment levels).

❖ **Direct Assessment Tool:** To know the effectiveness of the delivery internal assessment (IA) mark is conducted on a regular basis. The IA marks includes internal tests, laboratory tests, assignments and industrial visits.

❖ **Indirect Assessment Tools:**

- Graduate Survey
- Alumni Feedback
- Employer Survey Feedback

✓ Graduate Survey form:

**NEW HORIZON COLLEGE OF ENGINEERING**  
Ring Road, Kadubisanahalli, Bellandur Post, Near Marathalli, Bangalore -560103  
Permanently affiliated to VTU, Accredited by NAAC with 'A' Grade, Approved by AICTE & ISO 9001:2008 certified.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

**GRADUATE SURVEY FORM**

Name : Manisha USN: 1N04136C029 Year: 2017(VI)

Sl.	Program Outcomes/ Program Specific Outcomes	Excellent	Very Good	Good	Satisfactory	Poor
		(5)	(4)	(3)	(2)	(1)
1	<b>Engineering Knowledge:</b> Were you able to apply the knowledge of Mathematics, Science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems		✓			
2	<b>Problem analysis :</b> Were you comfortable in identifying, formulating, reviewing, research literature and analyzing complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.		✓			
3	<b>Design / Development of Solutions:</b> Were you able to design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural, societal.		✓			
4.	<b>Conduct investigations of complex problems:</b> Was it easy to use research – based knowledge and research methods, including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.		✓			
5	<b>Modern tool usage:</b> Were you able to create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.			✓		
6	<b>The engineer and society:</b> Did you apply reasoning informed by the contextual knowledge to assess societal, health, safety legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice				✓	
7	<b>Environment and sustainability</b> Did you understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			✓		
8	<b>Ethics:</b> Were you able to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.		✓			
9	<b>Individual and team work:</b> Did you function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings		✓			
10	<b>Communication:</b> Did you communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			✓		
11	<b>Project management and finance:</b> Did you demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi-disciplinary environments.			✓		
12	<b>Life – long learning:</b> How far you recognize the need for , and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change				✓	
13	Were you able to solve real life problems of power system and power Electronics using MiPower, PSPICE and MATLAB software tools and hardware?	✓				
14	Were you able to develop and support systems based on Renewable and sustainable Energy sources?		✓			



✓ **Alumni Feedback form:****NEW HORIZON COLLEGE OF ENGINEERING**

Ring Road, Kadubisanahalli, Bellandur Post, Near Marathalli, Bangalore -560103  
 Permanently affiliated to VTU, Accredited by NAAC with 'A' Grade, Approved by AICTE & ISO 9001:2008 certified.

**ALUMNI SURVEY FORM**

We shall be thankful to and appreciate you, if you can spare some of your valuable time to fill up this survey form and give us your valuable suggestion for further improvement of the Institution programme. Your valuable input will be of great use to improve the quality of our academic program and enhance the credibility of the Institute.

Sd/-  
 PRINCIPAL

Name of the Alumni	Rohit Kumar Tiwari			USN:	
Degree	BE ✓	M. Tech	MBA	MCA	
Programme	AUTO / BT/ CIVIL / CSE / EC / ✓EEE/ IS / ME				
Year of Graduation	2015				
Name of the organization where you are working	Century link				
Designation	Software Engineering trainee				

S l.	Graduate Attributes	POs/ PSOs	Assessment				
			Excellent (5)	Very Good (4)	Good (3)	Satisfactory (2)	Poor (1)
1.	Extent of usefulness of Basic Science and Engineering Science courses in understanding Problems you solved so far in your career	PO1	✓				
2.	Publication of research papers, white papers, promotion in organizations	PO2 PO4		✓			
3.	Ability to design and develop system components & processes	PO3 PSO1,2		✓			
4.	New tools learnt during job and its applications	PO5 PSO1,2	✓				
5.	Ability to factor in sustainability, ethical, health, public safety, and environmental issues in the solutions developed by you	PO6 PO7 PO8 PSO1,2		✓			
6.	Level of comfort in working in groups-initially and at present	PO9	✓				
7.	Communication skills (level of acquisition during the program, usefulness in the job, additional acquisitions during work etc.)	PO10	✓				
8.	Extent of application of projects, management principles in the projects handled/ being handled by you	PO11 PSO1,2	✓				
9.	Enhancement of qualifications (higher degrees, certificate courses etc.), knowledge, skills etc. (workshops, training programs etc.)	PO12 PSO1,2	✓				

[PTO]

## 1. Relevance of Curriculum in your Job.

Since I studied core branch & I am working in software Engineering field there is no co-relation.

## 2. Need any change in curriculum and Syllabi.

For the both IT & core, can be able to manage that kind of syllabi is required

## 3. Improvement in teaching learning process.

Its not required since every semester it will be updated

## 4. Have you learned the basic concepts through your projects.

Yes

## 5. Any other suggestions / Comments.

class hours should be less, project, practical hours should be more.

  
NAME & SIGNATURE

✓ *Employer Survey- Questionnaire:***NEW HORIZON COLLEGE OF ENGINEERING**

Ring Road, Kadubisanahalli, Bellandur Post, Near Marathalli, Bangalore - 560103  
 Permanently affiliated to VTU, Accredited by NAAC with 'A' Grade, Approved by AICTE & ISO 9001:2008 certified.

**SURVEY QUESTIONNAIRE TO EMPLOYER**

Sir/Madam,

Our Institute is following outcome based education in continuity with the international practices (as per Washington Accord). The assessment of the outcome has to be through a survey (such as Program Exit survey, Alumni survey, parent feedback, employer survey etc.). The following questions need your valued consideration. Please find some time and send in your answers to the following questions. This report will be kept confidential.

Sd/-  
PRINCIPAL

Company Name : Tata Consultancy Services		
Mailing Address : Tata Consultancy Services, VYDEHI RC-1 BLOCK 82, EPIP, Whitefield		
City: Bangalore	State:Karnataka	Pin Code :560066
Employment Details	Year:2017	Email :benjin.s@tcs.com

Sl	Questions	Graduate Attributes	Program Outcomes	Excellent	Very Good	Good	Satisfactory	Poor
				(5)	(4)	(3)	(2)	(1)
1	Your views on strengths of our graduates?	i) Engineering Knowledge ii) Ethics iii) Individual & Team Work iv) Communication v) Project Management & Finance vi) Life Long Learning	PO1 PO8 PO9 PO10 PO11 PO12		4			
2	How do you find our student in applying the knowledge of maths, science in the solution of complying engineering problems?	i) Engineering Knowledge ii) Design & Development of solution iii) Conduct Investigations of complex problems iv) Modern tool usage v) The engineer & Society	PO1 PO3 PO4 PO5 PO6		4			
3	How do you found our student with respect to technical skills?	i) Problem Analysis ii) Design & Development of solution iii) conduct Investigations of complex problems	PO2 PO3 PO4		4			
4	How do you rate our student with respect to their ethical and moral values?	i) Ethics	PO8		4			
5	How do you rate our students with respect to work?	i) Ethics ii) Individual & Team Work	PO8 PO9		4			
6	How do you find our curriculum with respect to industry?	i) Life Long Learning	PO12	5				
7	Were you happy with the support you received from the college during placement drive?	NA	NA	5				
8	How do you rate our student with respect to communication skills?	i) Communication	PO10		4			
9	How do you rate our student with respect to being open to new ideas and learning new technologies	i) Lifelong learning	PO12		4			
10	How do you rate our student with respect overall performance in terms of percentage contribution to your organization?	Adheres to all 12 Graduate Attributes	PO1 to PO12		4			
11	How do you rate the capability of our students in the area of Modern software tools usage?		PSO1	5				
12	Level of involvement in design and development of Renewable and sustainable Energy Systems.		PSO2	5				

NA: Not Applicable. List of PSO's and PO's is appended for your reference. Your detailed comments on our graduate employee

Technically Sound, Good at Communication and articulation and positive Attitude

Students have an open mind towards learning

**PO1 – ASSESSMENT PROCESS**  
**Table 3.3.1.1: PO1 – Assessment Process**

<b>Programme Outcome 1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems in Electrical and Electronics Engineering.</b>						
<b>Courses Considered</b>			<b>Asses sment Tool</b>	<b>Target Performance</b>		<b>Frequency of Assessment Process</b>
<b>Course Code</b>	<b>Course Name</b>	<b>COs</b>		<b>Internal Assessment</b>	<b>External Exams</b>	
<b>10MAT31</b>	Engineering Mathematics III	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10ES32</b>	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	"
<b>10ES33</b>	Logic Design	CO1-CO6	IA	70%	75%	"
<b>10ES34</b>	Network Analysis	CO1-CO6	IA	74%	75%	"
<b>10EE35</b>	Electrical and Electronic Measurements And Instrumentation	CO1-CO6	IA	76%	75%	"
<b>10EE36</b>	Electric Power Generation	CO1-CO6	IA	80%	75%	"
<b>10ESL37</b>	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
<b>10ESL38</b>	Logic Design Lab	CO1-CO6	IA	90%	75%	"
<b>10MAT41</b>	Engineering Mathematics-IV	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10ES42</b>	Microcontrollers	CO1-CO6	IA	70%	75%	"
<b>10ES43</b>	Control Systems	CO1-CO6	IA	74%	75%	"
<b>10EE44</b>	Field Theory	CO1-CO6	IA	74%	75%	"
<b>10EE45</b>	Power Electronics	CO1-CO6	IA	68%	75%	"
<b>10EE46</b>	Transformers and Induction Machines	CO1-CO6	IA	70%	75%	"
<b>10EEL47</b>	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
<b>10EEL48</b>	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
<b>10AL51</b>	Management and Entrepreneurship	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10EE52</b>	Signals and Systems	CO1-CO6	IA	70%	75%	"
<b>10EE53</b>	Transmission and Distribution	CO1-CO6	IA	50%	75%	"
<b>10EE54</b>	D.C. Machines and Synchronous Machines	CO1-CO6	IA	64%	75%	"
<b>10EE55</b>	Modern Control Theory	CO1-CO6	IA	70%	75%	"
<b>10EE56</b>	Linear IC's and Applications	CO1-CO6	IA	60%	75%	"

10EEL57	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO1-CO6	IA	70%	75%	"
10EE62	Switch gear & Protection	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
10EE65	E-CADD	CO1-CO6	IA	84%	75%	"
10EE664	Object Oriented Programming using C++	CO1-CO6	IA	80%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"
10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO1-CO6	IA	70%	75%	"
10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>

10EEP85	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				70%		<i>End of the Programme</i>
<i>Alumni Feedback</i>				60%		<i>Annually</i>
<i>Employer Feedback</i>				50%		<i>Annually</i>

## PO2 – ASSESSMENT PROCESS

Table 3.3.1.2: PO2 – Assessment Process

**Programme Outcome 2: Identify, formulate, review research literature, and analyze complex engineering problems in Electrical and Electronics Engineering reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.**

Courses Considered			Assessment Tool	Target Performance		Frequency of Assessment Process
Course Code	Course Name	COs		Internal Assessment	External Exams	
10MAT31	Engineering Mathematics III	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES32	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	"
10ES33	Logic Design	CO1-CO6	IA	70%	75%	"
10ES34	Network Analysis	CO1-CO6	IA	74%	75%	"
10EE35	Electrical and Electronic Measurements And Instrumentation	CO1-CO6	IA	76%	75%	"
10EE36	Electric Power Generation	CO1-CO6	IA	80%	75%	"
10ESL37	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
10ESL38	Logic Design Lab	CO1-CO6	IA	90%	75%	"
10MAT41	Engineering Mathematics-IV	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES42	Microcontrollers	CO1-CO6	IA	70%	75%	"
10ES43	Control Systems	CO1-CO6	IA	74%	75%	"
10EE44	Field Theory	CO1-CO6	IA	74%	75%	"
10EE45	Power Electronics	CO1-CO6	IA	68%	75%	"
10EE46	Transformers and Induction Machines	CO1-CO6	IA	70%	75%	"
10EEL47	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"

10EEL48	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
10AL51	Management and Entrepreneurship	CO1-CO6	IA	80%	85%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE52	Signals and Systems	CO1-CO6	IA	70%	75%	"
10EE53	Transmission and Distribution	CO1-CO6	IA	50%	75%	"
10EE54	D.C. Machines and Synchronous Machines	CO1-CO6	IA	64%	75%	"
10EE55	Modern Control Theory	CO1-CO6	IA	70%	75%	"
10EE56	Linear IC's and Applications	CO1-CO6	IA	60%	75%	"
10EEL57	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO1-CO6	IA	70%	75%	"
10EE62	Switchgear & Protection	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
10EE65	E-CADD	CO1-CO6	IA	84%	75%	"
10EE664	Object Oriented Programming using C++	CO1-CO6	IA	80%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"
10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO1-CO6	IA	70%	75%	"

10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP85	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				70%		<i>End of the programme</i>
<i>Alumni Feedback</i>				60%		<i>Annually</i>
<i>Employer Feedback</i>				50%		<i>Annually</i>

**PO3 – ASSESSMENT PROCESS**  
**Table 3.3.1.3: PO3 – Assessment Process**

**Programme Outcome 3: Design solutions for complex engineering problems and design system components or processes of Electrical and Electronics Engineering that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.**

Course Code	Courses Considered		Assessment Tool	Target Performance		Frequency of Assessment Process
	Course Name	COs		Internal Assessment	External Exams	
10MAT31	Engineering Mathematics III	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES32	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	"
10ES33	Logic Design	CO1-CO6	IA	70%	75%	"
10ES34	Network Analysis	CO1-CO6	IA	74%	75%	"
10EE35	Electrical and Electronic Measurements And Instrumentation	CO1-CO6	IA	76%	75%	"
10EE36	Electric Power Generation	CO1-CO6	IA	80%	75%	"
10ESL37	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
10ESL38	Logic Design Lab	CO1-CO6	IA	90%	75%	"
10MAT41	Engineering Mathematics-IV	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester</i>



						<i>&amp; Externals – End of Semester</i>
10ES42	Microcontrollers	CO1-CO6	IA	70%	75%	"
10ES43	Control Systems	CO1-CO6	IA	74%	75%	"
10EE44	Field Theory	CO1-CO6	IA	74%	75%	"
10EE45	Power Electronics	CO1-CO6	IA	68%	75%	"
10EE46	Transformers and Induction Machines	CO1-CO6	IA	70%	75%	"
10EEL47	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
10EEL48	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
10AL51	Management and Entrepreneurship	CO3	IA	80%	85%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE52	Signals and Systems	CO1-CO6	IA	70%	75%	"
10EE53	Transmission and Distribution	CO1-CO6	IA	50%	75%	"
10EE54	D.C. Machines and Synchronous Machines	CO1-CO6	IA	64%	75%	"
10EE55	Modern Control Theory	CO1-CO6	IA	70%	75%	"
10EE56	Linear IC's and Applications	CO1-CO6	IA	60%	75%	"
10EEL57	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE62	Switchgear & Protection	CO1-CO6	IA	80%	75%	"
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
10EE65	E-CADD	CO1-CO6	IA	84%	75%	"
10EE664	Object Oriented Programming using C++	CO1-CO6	IA	80%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"
10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>

10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO1-CO6	IA	70%	75%	"
10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP85	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				70%		<i>End of the programme</i>
<i>Alumni Feedback</i>				60%		<i>Annually</i>
<i>Employer Feedback</i>				50%		<i>Annually</i>

**PO4 – ASSESSMENT PROCESS**  
**Table 3.3.1.4: PO4 – Assessment Process**

<b>Programme Outcome 4: Use research-based knowledge and research methods including design of experiments in Electrical and Electronics Engineering, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.</b>						
Courses Considered			Assessment Tool	Target Performance		Frequency of Assessment Process
Course Code	Course Name	COs		Internal Assessment	External Exams	
10MAT31	Engineering Mathematics III	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES32	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	"
10ES33	Logic Design	CO1-CO6	IA	70%	75%	"
10ES34	Network Analysis	CO1-CO6	IA	74%	75%	"
10EE35	Electrical and Electronic Measurements And Instrumentation	CO1-CO6	IA	76%	75%	"

10EE36	Electric Power Generation	CO1-CO6	IA	80%	75%	"
10ESL37	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
10ESL38	Logic Design Lab	CO1-CO6	IA	90%	75%	"
10MAT41	Engineering Mathematics-IV	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES42	Microcontrollers	CO1-CO6	IA	70%	75%	"
10ES43	Control Systems	CO1-CO6	IA	74%	75%	"
10EE44	Field Theory	CO1-CO6	IA	74%	75%	"
10EE45	Power Electronics	CO1-CO6	IA	68%	75%	"
10EE46	Transformers and Induction Machines	CO1-CO6	IA	70%	75%	"
10EEL47	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
10EEL48	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
10EE52	Signals and Systems	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE53	Transmission and Distribution	CO1-CO6	IA	50%	75%	"
10EE54	D.C. Machines and Synchronous Machines	CO1-CO6	IA	64%	75%	"
10EE55	Modern Control Theory	CO1-CO6	IA	70%	75%	"
10EE56	Linear IC's and Applications	CO1-CO6	IA	60%	75%	"
10EEL57	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO1-CO6	IA	70%	75%	"

10EE62	Switchgear & Protection	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
10EE65	E-CADD	CO1-CO6	IA	84%	75%	"
10EE664	Object Oriented Programming using C++	CO1-CO6	IA	80%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"
10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO1-CO6	IA	70%	75%	"
10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP85	Project Work	CO1-CO6	IA	75%	75%	"

10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				70%		<i>End of the programme</i>
<i>Alumni Feedback</i>				60%		<i>Annually</i>
<i>Employer Feedback</i>				50%		<i>Annually</i>

**PO5 – ASSESSMENT PROCESS**  
**Table 3.3.1.5: PO5 – Assessment Process**

Programme Outcome 5: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities in Electrical and Electronics Engineering with an understanding of the limitations.						
Courses Considered			Assessment Tool	Target Performance		Frequency of Assessment Process
Course Code	Course Name	COs		Internal Assessment	External Exams	
10MAT31	Engineering Mathematics III	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES32	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	"
10ES33	Logic Design	CO1-CO6	IA	70%	75%	"
10ES34	Network Analysis	CO1-CO6	IA	74%	75%	"
10EE35	Electrical and Electronic Measurements And Instrumentation	CO1-CO6	IA	76%	75%	"
10EE36	Electric Power Generation	CO1-CO6	IA	80%	75%	"
10ESL37	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
10ESL38	Logic Design Lab	CO1-CO6	IA	90%	75%	"
10MAT41	Engineering Mathematics-IV	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES42	Microcontrollers	CO1-CO6	IA	70%	75%	"
10ES43	Control Systems	CO1-CO6	IA	74%	75%	"
10EE44	Field Theory	CO1-CO6	IA	74%	75%	"
10EE45	Power Electronics	CO1-CO6	IA	68%	75%	"
10EE46	Transformers and Induction Machines	CO1-CO6	IA	70%	75%	"
10EEL47	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
10EEL48	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
10AL51	Management and Entrepreneurship	CO1-CO6	IA	80%	85%	"
10EE52	Signals and Systems	CO1-CO6	IA	70%	75%	"
10EE53	Transmission and Distribution	CO1-CO6	IA	50%	75%	"

10EE54	D.C. Machines and Synchronous Machines	CO1-CO6	IA	64%	75%	"
10EE55	Modern Control Theory	CO1-CO6	IA	70%	75%	"
10EE56	Linear IC's and Applications	CO1-CO6	IA	60%	75%	"
10EEL57	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO1-CO6	IA	70%	75%	"
10EE62	Switchgear & Protection	CO2-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
10EE65	E-CADD	CO1-CO6	IA	84%	75%	"
10EE664	Object Oriented Programming using C++	CO1-CO6	IA	80%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO2-CO6	IA	64%	75%	"
10EE73	High Voltage Engineering	CO2-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO1-CO6	IA	70%	75%	"
10EEL77	Relay and High Voltage Laboratory	CO2-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp;</i>

						<i>Externals – End of Semester</i>
<b>10EEP85</b>	Project Work	CO1-CO6	IA	75%	75%	"
<b>10EES86</b>	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				<b>70%</b>		<b><i>End of the programme</i></b>
<i>Alumni Feedback</i>				<b>60%</b>		<b><i>Annually</i></b>
<i>Employer Feedback</i>				<b>50%</b>		<b><i>Annually</i></b>

**PO6 – ASSESSMENT PROCESS**  
**Table 3.3.1.6: PO6 – Assessment Process**

**Programme Outcome 6: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice in Electrical and Electronics Engineering.**

Course Code	Courses Considered		Assessment Tool	Target Performance		Frequency of Assessment Process
	Course Name	COs		Internal Assessment	External Exams	
<b>10ES32</b>	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	<b><i>Internals – Thrice in a semester &amp; Externals – End of Semester"</i></b>
<b>10ES33</b>	Logic Design	CO1-CO6	IA	70%	75%	"
<b>10ES34</b>	Network Analysis	CO1-CO6	IA	74%	75%	"
<b>10EE35</b>	Electrical and Electronic Measurements And Instrumentation	CO1-CO6	IA	76%	75%	"
<b>10EE36</b>	Electric Power Generation	CO1-CO6	IA	80%	75%	"
<b>10ESL37</b>	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
<b>10ESL38</b>	Logic Design Lab	CO1-CO6	IA	90%	75%	"
<b>10ES42</b>	Microcontrollers	CO1-CO6	IA	70%	75%	<b><i>Internals – Thrice in a semester &amp; Externals – End of Semester</i></b>
<b>10ES43</b>	Control Systems	CO1-CO2, CO4-CO6	IA	74%	75%	"
<b>10EE44</b>	Field Theory	CO1-CO6	IA	74%	75%	"
<b>10EE45</b>	Power Electronics	CO1-CO2, CO4-CO6	IA	68%	75%	"
<b>10EE46</b>	Transformers and Induction Machines	CO1-CO6	IA	70%	75%	"
<b>10EEL47</b>	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
<b>10EEL48</b>	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
<b>10AL51</b>	Management and Entrepreneurship	CO2-CO6	IA	80%	75%	<b><i>Internals – Thrice in a semester &amp;</i></b>

						<i>Externals – End of Semester</i>
10EE52	Signals and Systems	CO1-CO6	IA	70%	75%	"
10EE53	Transmission and Distribution	CO1-CO6	IA	50%	75%	"
10EE54	D.C. Machines and Synchronous Machines	CO3, CO4, CO6	IA	64%	75%	"
10EE55	Modern Control Theory	CO1-CO6	IA	70%	75%	"
10EE56	Linear IC 's and applications	CO2-CO6	IA	70%	75%	"
10EEL57	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO1-CO6	IA	70%	75%	"
10EE62	Switchgear & Protection	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO3-CO6	IA	80%	75%	"
10EE65	E-CADD	CO1-CO6	IA	84%	75%	"
10EE664	Object Oriented Programming using C++	CO1,CO3	IA	80%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"
10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO1-CO6	IA	70%	75%	"
10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"



10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP85	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				<b>70%</b>		<b><i>End of the programme</i></b>
<i>Alumni Feedback</i>				<b>60%</b>		<b><i>Annually</i></b>
<i>Employer Feedback</i>				<b>50%</b>		<b><i>Annually</i></b>

**PO7 – ASSESSMENT PROCESS**  
**Table 3.3.1.7: PO7 – Assessment Process**

<b>Programme Outcome 7: Understand the impact of the professional engineering solutions of Electrical and Electronics Engineering in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.</b>						
<b>Courses Considered</b>			<b>Assessment Tool</b>	<b>Target Performance</b>		<b>Frequency of Assessment Process</b>
<b>Course Code</b>	<b>Course Name</b>	<b>COs</b>		<b>Internal Assessment</b>	<b>External Exams</b>	
10ES32	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES33	Logic Design	CO1-CO6	IA	70%	75%	"
10ES34	Network Analysis	CO1-CO6	IA	74%	75%	"
10EE35	Electrical and Electronic Measurements And Instrumentation	CO1-CO3, CO5-CO6	IA	76%	75%	"
10EE36	Electric Power Generation	CO1-CO6	IA	80%	75%	"
10ESL37	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
10ESL38	Logic Design Lab	CO1-CO6	IA	90%	75%	"
10ES42	Microcontrollers	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp;</i>

						<i>Externals – End of Semester</i>
10ES43	Control Systems	CO1-CO6	IA	74%	75%	"
10EE44	Field Theory	CO1-CO6	IA	74%	75%	"
10EE45	Power Electronics	CO1-CO2 CO4-CO6	IA	68%	75%	"
10EE46	Transformers and Induction Machines	CO1-CO2 CO4-CO5	IA	70%	75%	"
10EEL47	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
10EEL48	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
10AL51	Management and Entrepreneurship	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE52	Signals and Systems	CO2-CO6	IA	70%	75%	"
10EE53	Transmission and Distribution	CO1-CO6	IA	50%	75%	"
10EE54	D.C. Machines and Synchronous Machines	CO3,CO4, CO6	IA	64%	75%	"
10EE55	Modern Control theory	CO1-CO6	IA	70%	75%	"
10EE56	Linear IC and applications	CO1-CO6	IA	70%	75%	"
10EEL57	Measurements and Circuit Simulation Laboratory	CO5	IA	90%	75%	"
10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE62	Switchgear & Protection	CO1-CO6	IA	80%	75%	"
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO3-CO6	IA	80%	75%	"
10EE65	E-CADD	CO1-CO6	IA	84%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO2-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"

10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO1-CO6	IA	70%	75%	"
10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO2-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO2-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP75	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				70%		<i>End of the programme</i>
<i>Alumni Feedback</i>				60%		<i>Annually</i>
<i>Employer Feedback</i>				50%		<i>Annually</i>

**PO8 – ASSESSMENT PROCESS**  
**Table 3.3.1.8: PO8 – Assessment Process**

<b>Programme Outcome 8: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</b>						
<b>Courses Considered</b>			<b>Assessment Tool</b>	<b>Target Performance</b>		<b>Frequency of Assessment Process</b>
<b>Course Code</b>	<b>Course Name</b>	<b>COs</b>		<b>Internal Assessment</b>	<b>External Exams</b>	
10ES32	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp;</i>

						<i>Externals – End of Semester</i>
<b>10ES33</b>	Logic Design	CO2-CO4, CO6	IA	70%	75%	"
<b>10ES34</b>	Network Analysis	CO3,CO4, CO6	IA	74%	75%	"
<b>10EE35</b>	Electrical and Electronic Measurements And Instrumentation	CO2,CO4, CO5	IA	76%	75%	"
<b>10EE36</b>	Electric Power Generation	CO1-CO6	IA	80%	75%	"
<b>10ESL37</b>	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
<b>10ESL38</b>	Logic Design Lab	CO1-CO6	IA	90%	75%	"
<b>10ES42</b>	Microcontrollers	CO3,CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10ES43</b>	Control Systems	CO1-CO2 CO4-CO6	IA	74%	75%	"
<b>10EE44</b>	Field Theory	CO1-CO6	IA	74%	75%	"
<b>10EE45</b>	Power Electronics	CO2, CO5	IA	68%	75%	"
<b>10EE46</b>	Transformers and Induction Machines	CO1, CO4	IA	70%	75%	"
<b>10EEL47</b>	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
<b>10EEL48</b>	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
<b>10AL51</b>	Management and Entrepreneurship	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10EE52</b>	Signals and Systems	CO1, CO6	IA	70%	75%	"
<b>10EE53</b>	Transmission and Distribution	CO1-CO6	IA	50%	75%	"
<b>10EE54</b>	D.C. Machines	CO6	IA	64%	75%	"

	and Synchronous Machines					
<b>10EE55</b>	Modern Control theory	CO2,CO3, CO6	IA	70%	75%	"
<b>10EE56</b>	Linear IC's and Applications	CO3, CO4	IA	60%	75%	"
<b>10EEL57</b>	Measurements and Circuit Simulation Laboratory	CO2,CO5	IA	90%	75%	"
<b>10EEL58</b>	Transformers and Induction Machines Laboratory	CO1-CO3	IA	90%	75%	"
<b>10EE61</b>	Power System Analysis and Stability	CO2-CO6	IA	70%	75%	"
<b>10EE62</b>	Switchgear & Protection	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10EE63</b>	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
<b>10EE64</b>	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
<b>10EE65</b>	E- CADD	CO1-CO6	IA	84%	75%	"
<b>10EEL67</b>	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
<b>10EEL68</b>	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
<b>10EE71</b>	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
<b>10EE72</b>	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"
<b>10EE73</b>	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>

10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO2-CO6	IA	70%	75%	"
10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP75	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				70%		<i>End of the programme</i>
<i>Alumni Feedback</i>				60%		<i>Annually</i>
<i>Employer Feedback</i>				50%		<i>Annually</i>

**PO9 – ASSESSMENT PROCESS**  
**Table 3.3.1.9: PO9 – Assessment Process**

<b>Programme Outcome 9: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.</b>						
<b>Courses Considered</b>			<b>Assessment Tool</b>	<b>Target Performance</b>		<b>Frequency of Assessment Process</b>
<b>Course Code</b>	<b>Course Name</b>	<b>COs</b>		<b>Internal Assessment</b>	<b>External Exams</b>	
10MAT31	Engineering Mathematics III	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester</i>

						<i>&amp; Externals – End of Semester</i>
<b>10ES32</b>	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	"
<b>10ES33</b>	Logic Design	CO1-CO6	IA	70%	75%	"
<b>10ES34</b>	Network Analysis	CO1-CO6	IA	74%	75%	"
<b>10EE35</b>	Electrical and Electronic Measurements And Instrumentation	CO1-CO6	IA	76%	75%	"
<b>10EE36</b>	Electric Power Generation	CO1-CO6	IA	80%	75%	"
<b>10ESL37</b>	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
<b>10ESL38</b>	Logic Design Lab	CO1-CO6	IA	90%	75%	"
<b>10MAT41</b>	Engineering Mathematics - IV	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10ES42</b>	Microcontrollers	CO3, CO6	IA	70%	75%	"
<b>10ES43</b>	Control Systems	CO1-CO2 CO4-CO6	IA	74%	75%	"
<b>10EE44</b>	Field Theory	CO1-CO6	IA	74%	75%	"
<b>10EE45</b>	Power Electronics	CO1-CO6	IA	68%	75%	"
<b>10EE46</b>	Transformers and Induction Machines	CO1-CO6	IA	70%	75%	"
<b>10EEL47</b>	Microcontrollers Lab	CO1- CO6	IA	90%	75%	"
<b>10EEL48</b>	Power Electronics Lab	CO2- CO6	IA	90%	75%	"
<b>10AL51</b>	Management and Entrepreneurship	CO1- CO4,CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10EE52</b>	Signals and Systems	CO1-CO6	IA	70%	75%	"
<b>10EE53</b>	Transmission and Distribution	CO1-CO6	IA	50%	75%	"
<b>10EE54</b>	D.C. Machines and Synchronous Machines	CO1-CO6	IA	64%	75%	"
<b>10EE55</b>	Modern Control theory	CO1-CO6	IA	70%	75%	"
<b>10EE56</b>	Linear IC's and Applications	CO1-CO6	IA	60%	75%	"
<b>10EEL57</b>	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"

10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO2-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE62	Switchgear & Protection	CO1-CO6	IA	80%	75%	"
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
10EE65	E- CADD	CO1-CO6	IA	84%	75%	"
10EE664	Object Oriented Programming using C++	CO1-CO6	IA	80%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"
10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO2-CO6	IA	70%	75%	"
10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"



10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP75	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				70%		<i>End of the programme</i>
<i>Alumni Feedback</i>				60%		<i>Annually</i>
<i>Employer Feedback</i>				50%		<i>Annually</i>

**PO10 – ASSESSMENT PROCESS**  
**Table 3.3.1.10: PO10 – Assessment Process**

<b>Programme Outcome 10: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.</b>						
<b>Courses Considered</b>			<b>Assessment Tool</b>	<b>Target Performance</b>		<b>Frequency of Assessment Process</b>
<b>Course Code</b>	<b>Course Name</b>	<b>COs</b>		<b>Internal Assessment</b>	<b>External Exams</b>	
10MAT31	Engineering Mathematics III	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES32	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	"
10ES33	Logic Design	CO1-CO6	IA	70%	75%	"
10ES34	Network Analysis	CO1-CO6	IA	74%	75%	"
10EE35	Electrical and Electronic Measurements And Instrumentation	CO1-CO6	IA	76%	75%	"
10EE36	Electric Power Generation	CO1-CO6	IA	80%	75%	"
10ESL37	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
10ESL38	Logic Design Lab	CO1-CO6	IA	90%	75%	"
10MAT41	Engineering Mathematics - IV	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester</i>

						<i>&amp; Externals – End of Semester</i>
<b>10ES42</b>	Microcontrollers	CO1-CO6	IA	70%	75%	"
<b>10ES43</b>	Control Systems	CO1-CO6	IA	74%	75%	"
<b>10EE44</b>	Field Theory	CO1-CO6	IA	74%	75%	"
<b>10EE45</b>	Power Electronics	CO1-CO6	IA	68%	75%	"
<b>10EE46</b>	Transformers and Induction Machines	CO1-CO6	IA	70%	75%	"
<b>10EEL47</b>	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
<b>10EEL48</b>	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
<b>10AL51</b>	Management and Entrepreneurship	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10EE52</b>	Signals and Systems	CO1-CO6	IA	70%	75%	"
<b>10EE53</b>	Transmission and Distribution	CO2-CO6	IA	50%	75%	"
<b>10EE54</b>	D.C. Machines and Synchronous Machines	CO1-CO6	IA	64%	75%	"
<b>10EE55</b>	Modern Control theory	CO1-CO6	IA	70%	75%	"
<b>10EE56</b>	Linear IC's and Applications	CO1-CO6	IA	60%	75%	"
<b>10EEL57</b>	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"
<b>10EEL58</b>	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
<b>10EE61</b>	Power System Analysis and Stability	CO1-CO6	IA	70%	75%	"
<b>10EE62</b>	Switchgear & Protection	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10EE64</b>	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
<b>10EE65</b>	E- CADD	CO1-CO6	IA	84%	75%	"
<b>10EE664</b>	Object Oriented Programming using C++	CO1-CO6	IA	80%	75%	"
<b>10EEL67</b>	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
<b>10EEL68</b>	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"

10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"
10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO1-CO6	IA	70%	75%	"
10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO2-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP75	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				70%		<i>End of the programme</i>
<i>Alumni Feedback</i>				60%		<i>Annually</i>
<i>Employer Feedback</i>				50%		<i>Annually</i>

## PO11 – ASSESSMENT PROCESS

Table 3.3.1.11: PO11 – Assessment Process

Programme Outcome 11: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
Courses Considered	Assessment Tool	Target Performance	Frequency of

Course Code	Course Name	COs		Internal Assessment	External Exams	Assessment Process
10ES32	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES33	Logic Design	CO2, CO4-CO6	IA	70%	75%	"
10ES34	Network Analysis	CO3, CO4, CO6	IA	74%	75%	"
10EE35	Electrical and Electronic Measurements And Instrumentation	CO2, CO4	IA	76%	75%	"
10EE36	Electric Power Generation	CO1-CO6	IA	80%	75%	"
10ESL37	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
10ESL38	Logic Design Lab	CO1-CO6	IA	90%	75%	"
10ES42	Microcontrollers	CO2, CO3, CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES43	Control Systems	CO1 CO4-CO6	IA	74%	75%	
10EE45	Power Electronics	CO2-CO6	IA	68%	75%	"
10EE46	Transformers and Induction Machines	CO1,CO3, CO5	IA	70%	75%	"
10EEL47	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
10EEL48	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
10AL51	Management and Entrepreneurship	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE52	Signals and Systems	CO2-CO5	IA	70%	75%	"
10EE53	Transmission and Distribution	CO2-CO6	IA	50%	75%	"
10EE54	D.C. Machines and Synchronous Machines	CO3, CO4, CO6	IA	64%	75%	"
10EE55	Modern Control theory	CO2, CO3, CO6	IA	70%	75%	"
10EE56	Linear IC's and Applications	CO3, CO4	IA	60%	75%	"

10EEL57	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO2-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE62	Switchgear & Protection	CO1-CO6	IA	80%	75%	"
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
10EE65	E- CADD	CO1- CO6	IA	84%	75%	"
10EE664	Object Oriented Programming using C++	CO1-CO6	IA	80%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"
10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO2-CO6	IA	70%	75%	"
10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO2-CO6	IA	74%	75%	"

10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP75	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				70%		<i>End of the programme</i>
<i>Alumni Feedback</i>				60%		<i>Annually</i>
<i>Employer Feedback</i>				50%		<i>Annually</i>

## PO12 – ASSESSMENT PROCESS

Table 3.3.1.12: PO12 – Assessment Process

Programme Outcome 12: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.						
Courses Considered			Assessment Tool	Target Performance		Frequency of Assessment Process
Course Code	Course Name	COs		Internal Assessment	External Exams	
10MAT31	Engineering Mathematics III	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES32	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	"
10ES33	Logic Design	CO1-CO6	IA	70%	75%	"
10ES34	Network Analysis	CO1-CO6	IA	74%	75%	"
10EE35	Electrical and Electronic Measurements And Instrumentation	CO1-CO6	IA	76%	75%	"
10EE36	Electric Power Generation	CO1-CO6	IA	80%	75%	"
10ESL37	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
10ESL38	Logic Design Lab	CO1-CO6	IA	90%	75%	"
10MAT41	Engineering Mathematics - IV	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>

10ES42	Microcontrollers	CO1-CO6	IA	70%	75%	"
10ES43	Control Systems	CO1-CO6	IA	74%	75%	"
10EE44	Field Theory	CO1-CO6	IA	74%	75%	"
10EE45	Power Electronics	CO1-CO6	IA	68%	75%	"
10EE46	Transformers and Induction Machines	CO1-CO6	IA	70%	75%	"
10EEL47	Microprocessor & Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
10EEL48	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
10AL51	Management and Entrepreneurship	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE52	Signals and Systems	CO1-CO6	IA	70%	75%	"
10EE53	Transmission and Distribution	CO1-CO6	IA	50%	75%	"
10EE54	D.C. Machines and Synchronous Machines	CO1-CO6	IA	64%	75%	"
10EE55	Modern Control theory	CO1-CO6	IA	70%	75%	"
10EE56	Linear IC's and Applications	CO1-CO6	IA	60%	75%	"
10EEL57	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO1-CO6	IA	70%	75%	"
10EE62	Switchgear & Protection	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
10EE65	E- CADD	CO1-CO6	IA	84%	75%	"
10EE664	Object Oriented Programming using C++	CO1-CO6	IA	80%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"

10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO1-CO6	IA	70%	75%	"
10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP75	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				70%		<i>End of the programme</i>
<i>Alumni Feedback</i>				60%		<i>Annually</i>
<i>Employer Feedback</i>				50%		<i>Annually</i>

### PSO1 – ASSESSMENT PROCESS

Table 3.3.1.13: PSO1 – Assessment Process

<b>Program Specific Outcomes 1: Graduates will be able to solve real life problems of Power system and Power Electronics using MiPower, PSPICE and MATLAB software tools and hardware.</b>						
Courses Considered			Assessment Tool	Target Performance		Frequency of Assessment Process
Course Code	Course Name	COs		Internal Assessment	External Exams	
10MAT31	Engineering Mathematics III	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester</i>



						<i>&amp; Externals – End of Semester</i>
<b>10ES32</b>	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	"
<b>10ES33</b>	Logic Design	CO1-CO6	IA	70%	75%	"
<b>10ES34</b>	Network Analysis	CO1-CO6	IA	74%	75%	"
<b>10EE35</b>	Electrical and Electronic Measurements And Instrumentation	CO1-CO6	IA	76%	75%	"
<b>10EE36</b>	Electric Power Generation	CO1-CO6	IA	80%	75%	"
<b>10ESL37</b>	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
<b>10ESL38</b>	Logic Design Lab	CO1-CO6	IA	90%	75%	"
<b>10MAT41</b>	Engineering Mathematics - IV	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10ES42</b>	Microcontrollers	CO1-CO6	IA	70%	75%	"
<b>10ES43</b>	Control Systems	CO1-CO6	IA	74%	75%	"
<b>10EE44</b>	Field Theory	CO1-CO6	IA	74%	75%	"
<b>10EE45</b>	Power Electronics	CO1-CO6	IA	68%	75%	"
<b>10EE46</b>	Transformers and Induction Machines	CO1-CO6	IA	70%	75%	"
<b>10EEL47</b>	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
<b>10EEL48</b>	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
<b>10AL51</b>	Management and Entrepreneurship	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
<b>10EE52</b>	Signals and Systems	CO1-CO6	IA	70%	75%	"

10EE53	Transmission and Distribution	CO1-CO6	IA	50%	75%	"
10EE54	D.C. Machines and Synchronous Machines	CO1-CO6	IA	64%	75%	"
10EE55	Modern Control theory	CO1-CO6	IA	70%	75%	"
10EE56	Linear IC's and Applications	CO1-CO6	IA	60%	75%	"
10EEL57	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO1-CO6	IA	70%	75%	"
10EE62	Switchgear & Protection	CO1-CO6	IA	80%	75%	<i>Internals – Thrive in a semester &amp; Externals – End of Semester</i>
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
10EE65	E- CADD	CO1-CO6	IA	84%	75%	"
10EE664	Object Oriented Programming using C++	CO1-CO6	IA	80%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"
10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrive in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO1-CO6	IA	70%	75%	"

10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP75	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				70%		<i>End of the programme</i>
<i>Alumni Feedback</i>				60%		<i>Annually</i>
<i>Employer Feedback</i>				50%		<i>Annually</i>

### PSO2 – ASSESSMENT PROCESS

Table 3.3.1.14: PSO2 – Assessment Process

**Program Specific Outcomes 2: Graduates will be able to develop and support systems based on renewable and sustainable Energy sources.**

Courses Considered			Assessment Tool	Target Performance		Frequency of Assessment Process
Course Code	Course Name	COs		Internal Assessment	External Exams	
10MAT31	Engineering Mathematics III	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES32	Analog Electronic Circuits	CO1-CO6	IA	74%	75%	"
10ES33	Logic Design	CO1-CO6	IA	70%	75%	"
10ES34	Network Analysis	CO1-CO6	IA	74%	75%	"
10EE35	Electrical and Electronic Measurements And Instrumentation	CO1-CO6	IA	76%	75%	"
10EE36	Electric Power Generation	CO1-CO6	IA	80%	75%	"
10ESL37	Analog Electronics Lab	CO1-CO6	IA	90%	75%	"
10ESL38	Logic Design Lab	CO1-CO6	IA	90%	75%	"

10MAT41	Engineering Mathematics - IV	CO1-CO6	IA	74%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10ES42	Microcontrollers	CO1-CO6	IA	70%	75%	"
10ES43	Control Systems	CO1-CO6	IA	74%	75%	"
10EE44	Field Theory	CO1-CO6	IA	74%	75%	"
10EE45	Power Electronics	CO1-CO6	IA	68%	75%	"
10EE46	Transformers and Induction Machines	CO1-CO6	IA	70%	75%	"
10EEL47	Microcontrollers Lab	CO1-CO6	IA	90%	75%	"
10EEL48	Power Electronics Lab	CO1-CO6	IA	90%	75%	"
10AL51	Management and Entrepreneurship	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE52	Signals and Systems	CO1-CO6	IA	70%	75%	"
10EE53	Transmission and Distribution	CO1-CO6	IA	50%	75%	"
10EE54	D.C. Machines and Synchronous Machines	CO1-CO6	IA	64%	75%	"
10EE55	Modern Control theory	CO1-CO6	IA	70%	75%	"
10EE56	Linear IC's and Applications	CO1-CO6	IA	60%	75%	"
10EEL57	Measurements and Circuit Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EEL58	Transformers and Induction Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EE61	Power System Analysis and Stability	CO1-CO6	IA	70%	75%	"
10EE62	Switchgear & Protection	CO1-CO6	IA	80%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE63	Electrical Machine Design	CO1-CO6	IA	60%	75%	"
10EE64	Digital Signal Processing	CO1-CO6	IA	80%	75%	"
10EE65	E- CADD	CO1-CO6	IA	84%	75%	"
10EE664	Object Oriented Programming using C++	CO1-CO6	IA	80%	75%	"
10EEL67	D.C. Machines and Synchronous Machines Laboratory	CO1-CO6	IA	90%	75%	"
10EEL68	Control Systems Laboratory	CO1-CO6	IA	90%	75%	"
10EE71	Computer Techniques in Power System Analysis	CO1-CO6	IA	80%	75%	"
10EE72	Electrical Power Utilization	CO1-CO6	IA	64%	75%	"
10EE73	High Voltage Engineering	CO1-CO6	IA	70%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EE74	Industrial Drives and Applications	CO1-CO6	IA	80%	75%	"
10EE756	Testing and Commissioning of Electrical Equipment	CO1-CO6	IA	80%	75%	"
10EE761	Power System Planning	CO1-CO6	IA	70%	75%	"

10EEL77	Relay and High Voltage Laboratory	CO1-CO6	IA	90%	75%	"
10EEL78	Power System Simulation Laboratory	CO1-CO6	IA	90%	75%	"
10EE81	Electrical Design, Estimation and Costing	CO1-CO6	IA	80%	75%	"
10EE82	Power System Operation and Control	CO1-CO6	IA	55%	75%	"
10EE836	Renewable Energy Sources	CO1-CO6	IA	74%	75%	"
10EE842	Energy Auditing & Demand Side Management	CO1-CO6	IA	94%	75%	<i>Internals – Thrice in a semester &amp; Externals – End of Semester</i>
10EEP75	Project Work	CO1-CO6	IA	75%	75%	"
10EES86	Seminar	CO1-CO6	IA	90%	-	"
<i>Graduate Survey</i>				<b>70%</b>		<i>End of the programme</i>
<i>Alumni Feedback</i>				<b>60%</b>		<i>Annually</i>
<i>Employer Feedback</i>				<b>50%</b>		<i>Annually</i>

### 3.3.2. Provide Results of Evaluation of Each PO & PSO

(40)

Program shall set Program Outcome attainment levels for all POs & PSOs.

(The attainment levels by direct (student performance) and indirect (surveys) are to be presented through Program level Course –PO & PSO matrix as indicated).

**Note:** Similar table is to be prepared for PSOs

C101, C102 are indicative courses in the first year. Similarly, C409 is final year course. First numeric digit indicates year of study and remaining two digits indicate course nos. in the respective year of study.

- ✚ Direct attainment level of a PO & PSO is determined by taking average across all courses addressing that PO and/or PSO. Fractional numbers may be used for example 1.55.
- ✚ Indirect attainment level of PO & PSO is determined based on the student exit surveys, employer surveys, co-curricular activities, extracurricular activities etc.

#### Example:

1. It is assumed that a particular PO has been mapped to four courses C201, C302, C303 and C401.
2. The attainment level for each of the four courses will be as per the examples shown in 3.2.2.
3. PO attainment level will be based on attainment levels of direct assessment and indirect assessment.
4. For affiliated, non-autonomous colleges, it is assumed that while deciding on overall attainment level 80% weightage may be given to direct assessment and 20% weightage to indirect assessment through surveys from students (largely), employers (to some extent). Program may have different weightages with appropriate justification.
5. Assuming following actual attainment levels:

**Direct Assessment**

C201 –High (3)

C302 – Medium (2)

C303 – Low (1)

C401 – High (3)

Attainment level will be summation of levels divided by no. of courses  $3+2+1+3/4= 9/4=2.25$

**Indirect Assessment**

Surveys, Analysis, customized to an average value as per levels 1, 2 & 3. Assumed level - 2

4. PO Attainment level will be 80% of direct assessment + 20% of indirect assessment i.e.  $1.8 + 0.4 = 2.2$ .

**1. Note: Similarly for PSOs****POs Attainment Levels:****PO ATTAINMENT POINTS****Table 3.3.2.1: PO Attainment Points**

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>I Semester</b>												
10MAT11	2.67	2.83	2.00	2.00	2.00	-	-	-	1.50	1.50	-	1.50
10CHE12	1.70	1.70	1.80	1.30	1.20	0.60	0.60	0.96	1.20	-	-	1.20
10CCP13	1.67	1.83	1.67	2.17	1.83	2.33	2.00	1.40	1.67	-	-	2.00
10CAED14	3.00	2.00	2.00	2.00	2.83	1.00	-	-	-	-	-	2.00
10ELN15	3.00	2.83	2.00	1.00	1.00	1.83	1.67	1.00	2.17	1.00	1.25	2.00
10CPL16	1.24	1.40	1.71	1.87	1.40	2.05	1.40	-	1.87	-	-	1.31
10CHEL17	3.00	3.00	2.00	2.00	1.00	-	1.00	2.00	2.00	-	-	2.00
10CIV18	1.17	2.00	2.00	1.75	1.67	2.00	1.80	1.25	1.50	2.00	2.00	2.00
<b>II Semester</b>												
10MAT21	2.67	2.83	2.00	2.00	2.00	-	-	-	1.50	1.50	-	1.50
10PHY22	3.00	3.00	3.00	1.00	-	-	1.00	-	2.33	1.00	-	2.00
10CIV23	3.00	2.83	2.67	3.00	2.00	2.00	3.00	2.00	2.00	1.00	3.00	1.50
10EME24	2.67	2.17	2.00	2.17	2.00	1.00	1.00	-	-	-	-	2.17
10ELE25	3.00	3.00	1.67	1.67	2.67	2.00	1.00	1.00	1.67	1.67	2.00	2.00
10WSL26	2.83	2.00	3.00	2.17	-	1.00	1.00	-	2.50	1.17	1.00	1.50
10PHYL27	3.00	2.20	2.20	1.00	-	-	1.00	-	3.00	1.00	-	2.00
10CIP28	-	-	-	-	-	1.00	1.00	3.00	1.00	2.00	-	1.00

III Semester												
10MAT31	2.67	2.83	2.00	2.00	2.00	-	-	-	1.50	1.50	-	1.50
10ES32	1.32	1.09	1.01	1.17	0.78	0.93	0.62	0.62	0.62	0.47	0.62	0.93
10ES33	1.40	1.24	1.32	1.09	0.70	0.62	0.62	0.70	0.62	0.62	0.70	0.62
10ES34	1.40	1.17	1.17	0.78	0.70	0.47	0.47	0.62	0.54	0.47	0.47	0.93
10EE35	2.20	0.98	1.10	1.10	0.86	0.98	0.88	1.22	0.98	0.86	1.83	1.47
10EE 36	3.00	2.50	2.17	2.50	1.00	1.67	2.33	2.00	2.17	2.33	2.50	3.00
10ESL37	2.80	2.80	2.80	2.80	2.80	0.93	0.93	0.93	1.87	1.87	0.93	1.87
10ESL38	1.80	1.80	1.80	1.80	1.80	0.60	0.60	0.60	1.20	1.20	0.60	1.40
IV Semester												
10MAT41	2.83	2.50	2.33	2.33	2.33	-	-	-	1.50	1.83	-	1.33
10ES42	1.40	0.93	1.01	0.86	0.93	0.47	0.70	0.47	0.93	0.62	0.78	0.93
10ES43	3.00	2.83	2.83	1.83	1.83	1.00	1.83	1.00	1.40	1.83	1.50	2.00
10EE44	1.40	1.40	1.24	0.78	1.32	1.40	0.86	0.47	0.47	0.47	-	0.93
10EE45	2.00	2.00	1.44	1.56	1.22	1.20	1.20	1.00	0.89	0.78	1.33	1.33
10EE46	1.40	1.09	1.24	1.09	0.78	0.78	0.93	0.47	0.78	0.78	0.78	0.78
10EEL47	2.00	2.00	2.00	2.00	2.00	0.67	0.67	0.67	1.33	1.33	0.67	1.33
10EEL48	2.60	2.60	2.60	2.60	2.60	0.87	0.87	0.87	1.73	1.73	0.87	1.73
V Semester												
10AL51	1.00	1.00	1.00	-	1.00	2.00	1.50	2.00	1.40	3.00	3.00	2.00
10EE52	1.40	1.40	0.93	1.24	0.78	1.24	0.47	0.47	0.93	1.32	0.47	0.93
10EE53	2.60	2.60	2.17	2.02	2.17	1.73	1.44	1.59	1.16	1.39	1.56	1.73
10EE54	2.20	2.20	0.98	1.47	1.47	0.98	0.98	0.73	1.10	1.10	0.73	1.47
10EE55	3.00	3.00	3.00	2.33	2.00	1.67	1.00	1.00	1.50	2.00	1.00	2.00
10EE56	1.00	1.00	1.00	0.44	0.78	0.67	0.72	0.50	0.33	0.56	0.33	0.67
10EEL57	2.60	2.60	2.60	2.60	2.60	1.30	1.73	1.73	0.87	0.87	0.87	1.73
10EEL58	2.20	2.20	2.20	2.20	2.20	2.20	1.47	0.73	0.73	1.47	1.47	1.47
VI Semester												
10EE61	2.80	2.80	2.80	1.71	1.71	2.18	1.87	1.49	1.87	1.87	1.87	2.80
10EE62	2.80	2.49	2.33	1.87	0.93	2.80	2.80	2.80	0.93	0.93	1.71	2.80
10EE63	2.80	2.64	2.64	2.64	2.49	0.93	1.87	0.93	1.87	2.64	0.93	2.80
10EE64	1.40	1.24	1.24	1.09	0.86	0.93	0.93	0.47	0.78	1.01	0.47	1.40
10EE65	3.00	2.83	3.00	3.00	3.00	1.00	2.00	1.00	2.00	2.83	1.00	3.00
10EE664	0.93	1.40	1.09	0.93	1.40	0.47	-	-	0.93	0.47	0.93	1.40
10EEL67	3.00	3.00	3.00	3.00	1.00	3.00	2.00	2.00	3.00	3.00	3.00	3.00
10EEL68	2.60	2.60	2.60	2.60	2.60	1.73	1.73	0.87	2.60	1.73	1.73	2.60
VII Semester												
10EE71	3.00	3.00	2.67	3.00	2.83	1.83	2.20	1.50	2.00	1.83	2.17	3.00
10EE72	2.80	2.49	2.33	1.87	0.93	2.80	2.80	2.80	0.93	0.93	1.71	2.80
10EE73	2.60	2.31	2.17	1.73	0.87	2.60	2.60	2.60	0.87	0.87	1.59	2.60
10EE74	3.00	2.83	2.83	2.83	1.17	1.17	1.33	2.00	2.00	2.00	2.00	3.00

<b>10EE756</b>	3.00	3.00	2.00	3.00	1.17	2.00	2.00	3.00	3.00	3.00	3.00	3.00
<b>10EE761</b>	2.80	2.80	2.80	1.71	1.56	2.18	1.87	1.49	1.87	1.87	1.87	2.80
<b>10EEL77</b>	2.80	2.49	2.33	1.87	0.93	2.80	2.80	2.80	2.80	2.80	1.87	2.80
<b>10EEL78</b>	3.00	3.00	2.67	3.00	2.83	1.83	2.20	1.50	3.00	3.00	2.00	3.00
<b>VIII Semester</b>												
<b>10EE81</b>	2.80	2.64	2.64	2.64	2.49	0.93	1.87	0.93	1.87	2.64	0.93	2.80
<b>10EE82</b>	2.60	2.60	2.31	2.60	2.46	1.59	1.91	1.30	1.73	1.59	1.88	2.60
<b>10EE836</b>	2.80	2.80	2.33	2.18	2.33	1.87	1.56	1.71	1.24	1.49	1.68	1.87
<b>10EE842</b>	3.00	2.83	2.83	2.83	2.67	1.00	2.00	1.00	2.00	2.83	1.00	3.00
<b>10EEP85</b>	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
<b>10EES86</b>	0.60	0.60	0.40	0.60	0.40	0.40	0.40	0.60	0.60	0.60	0.20	0.60
<b>Points received (X)</b>	143.17	136.01	124.90	114.58	97.07	79.43	81.22	68.00	92.54	86.37	67.99	117.64
<b>No-of mapped subjects (Y)</b>	61.00	61.00	61.00	60.00	58.00	55.00	56.00	51.00	60.00	56.00	48.00	62.00

**POs ATTAINMENT LEVELS**  
**TABLE 3.3.2.2: POs Attainment Levels**

<b>Direct Attainment (X/Y)</b>	<b>2.35</b>	<b>2.23</b>	<b>2.05</b>	<b>1.91</b>	<b>1.67</b>	<b>1.44</b>	<b>1.45</b>	<b>1.33</b>	<b>1.54</b>	<b>1.54</b>	<b>1.42</b>	<b>1.90</b>
<b>Weightage (80%) – A</b>	<b>1.88</b>	<b>1.78</b>	<b>1.64</b>	<b>1.53</b>	<b>1.34</b>	<b>1.16</b>	<b>1.16</b>	<b>1.07</b>	<b>1.23</b>	<b>1.23</b>	<b>1.13</b>	<b>1.52</b>
<b>Indirect Attainment</b>	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
<b>Weightage (20%) – B</b>	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
<b>Attainment level (A+B)</b>	<b>2.48</b>	<b>2.38</b>	<b>2.24</b>	<b>2.13</b>	<b>1.94</b>	<b>1.76</b>	<b>1.76</b>	<b>1.67</b>	<b>1.83</b>	<b>1.83</b>	<b>1.73</b>	<b>2.12</b>



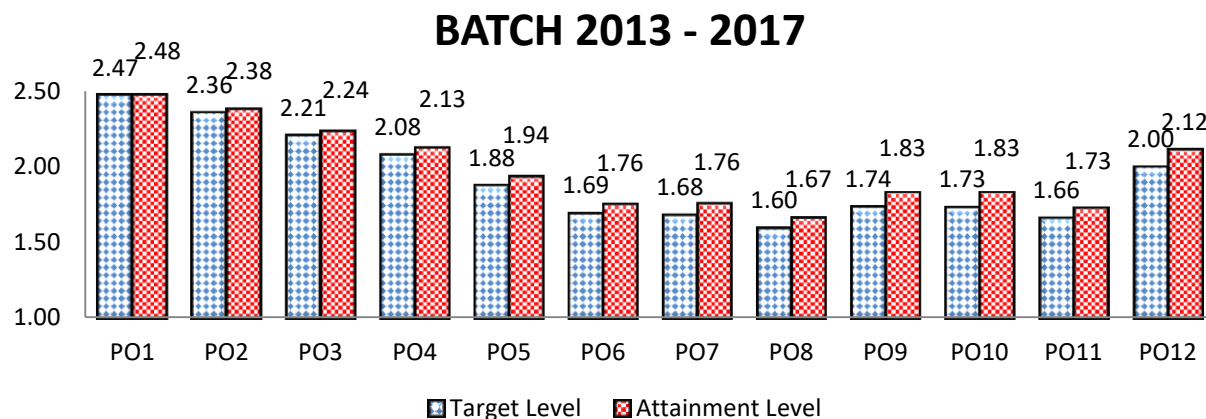


Figure 3.3.2.:1 PO attainment Points

**PSOs ATTAINMENT POINTS**

Table 3.3.2.3: PSOs Attainment Points

Course	PSO1	PSO2
<b>I SEMESTER</b>		
10 MAT11	1.00	1.00
10 PHY12	1.00	1.00
10 CIV13	-	1.00
10 EME14	-	1.00
10 ELE15	2.00	2.00
10 WSL16	-	1.00
10 PHL17	1.00	1.00
10 CIP18	-	1.00
<b>II SEMESTER</b>		
10 MAT21	1.00	-
10 CHE22	0.60	0.60
10 CCP23	2.00	1.00
10 CED24	3.00	1.00
10 ELN25	2.00	1.00
10 CPL26	0.93	0.93
10 CHEL27	1.00	1.00
10 CIV28	-	1.00
<b>III SEMESTER</b>		
10MAT31	1.00	-
10ES32	1.09	0.70

<b>10ES33</b>	1.01	0.78
<b>10ES34</b>	0.93	0.93
<b>10EE35</b>	1.71	1.71
<b>10EE 36</b>	3.00	3.00
<b>10ESL37</b>	2.80	1.87
<b>10ESL38</b>	1.80	0.60
<b>IV SEMESTER</b>		
<b>10MAT41</b>	1.00	0.00
<b>10ES42</b>	1.09	0.78
<b>10ES43</b>	3.00	2.00
<b>10EE44</b>	0.93	0.47
<b>10EE45</b>	2.00	1.44
<b>10EE46</b>	1.40	1.40
<b>10EEL47</b>	1.78	1.33
<b>10EEL48</b>	2.60	1.88
<b>V SEMESTER</b>		
<b>10AL51</b>	1.00	1.00
<b>10EE52</b>	0.93	0.47
<b>10EE53</b>	2.60	2.60
<b>10EE54</b>	2.20	2.20
<b>10EE55</b>	2.50	2.00
<b>10EE56</b>	1.00	0.67
<b>10EEL57</b>	2.60	1.59
<b>10EEL58</b>	2.20	2.20
<b>VI SEMESTER</b>		
<b>10EE61</b>	2.80	2.80
<b>10EE62</b>	2.80	2.80
<b>10EE63</b>	2.80	1.87
<b>10EE64</b>	1.40	1.32
<b>10EE65</b>	3.00	3.00
<b>10EE664</b>	0.93	0.47
<b>10EEL67</b>	3.00	3.00
<b>10EEL68</b>	2.60	2.60
<b>VII SEMESTER</b>		
<b>10EE71</b>	3.00	2.00
<b>10EE72</b>	1.87	2.80
<b>10EE73</b>	1.73	2.60

<b>10EE74</b>	3.00	3.00
<b>10EE756</b>	2.00	3.00
<b>10EE761</b>	2.80	2.80
<b>10EEL77</b>	1.87	2.80
<b>10EEL78</b>	3.00	2.00
<b>VIII SEMESTER</b>		
<b>10EE81</b>	2.80	2.80
<b>10EE82</b>	2.60	1.73
<b>10EE836</b>	2.80	2.80
<b>10EE842</b>	3.00	3.00
<b>10EEP85</b>	2.20	2.20
<b>10EES86</b>	0.47	0.47

### PSOs ATTAINMENT LEVELS

Table 3.3.2.4: PSOs Attainment Levels

<b>Direct Attainment (X/Y)</b>	<b>1.93</b>	<b>1.68</b>
Weightage (80%) – A	1.55	1.34
<b>Indirect Attainment</b>	3.00	3.00
Weightage (20%) – B	0.60	0.60
<b>Attainment level – A + B</b>	<b>2.15</b>	<b>1.94</b>

### BATCH 2013 - 2017

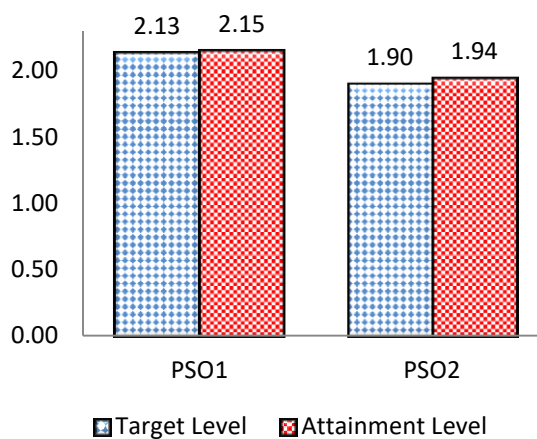


Figure 3.3.2.2: PSOs Attainment

CRITERION - 4

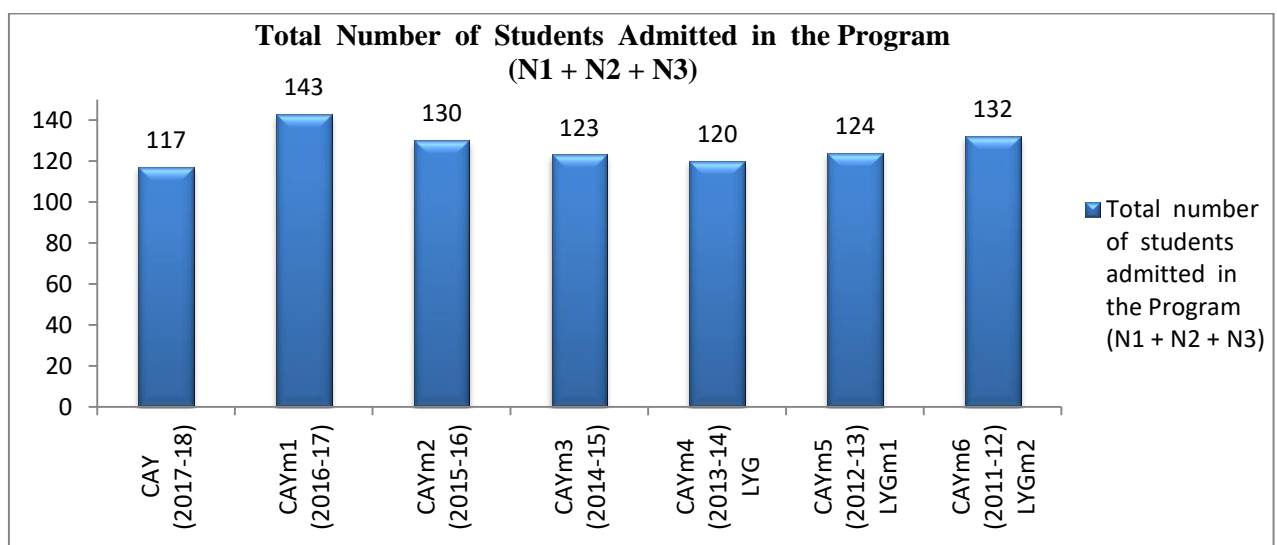
STUDENTS' PERFORMANCE

150

**4. STUDENTS' PERFORMANCE****(150)****Table 4.1:** Admission details for past six years

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	CAY (2017-18)	CAYm1 (2016-17)	CAYm2 (2015-16)	CAYm3 (2014-15)	CAYm4 (2013-14) LYG	CAYm5 (2012-13) LYGm1	CAYm6 (2011-12) LYGm2
Sanctioned intake of the program (N)	120	120	120	120	120	120	120
Total number of students admitted in first year minus number of students migrated to other programs/institutions plus no. of students migrated to this program (N1)	117	120	109	108	110	108	111
Number of students admitted in 2nd year in the same batch via lateral entry (N2)	-	23	21	15	10	16	21
Separate division students, if applicable (N3)	-	-	-	-	-	-	-
<b>Total number of students admitted in the Program (N1 + N2 + N3)</b>	<b>117*</b>	<b>143</b>	<b>130</b>	<b>123</b>	<b>120</b>	<b>124</b>	<b>132</b>

\*Only First Year Admission without Lateral Entry

**Figure 4.1:** Admission details for past six Years

**Table 4.2:** Number of students successfully graduated without backlogs

Year of entry	N1 + N2 + N3 (As defined above)	Number of students who have successfully graduated <b>without backlogs</b> in any semester/year of study (Without Backlog means no compartment or failures in any semester/year of study)			
		I Year	II Year	III Year	IV Year
CAY (2017-18)	117	-	-	-	-
CAYm1 (2016-17)	143	86	-	-	-
CAYm2 (2015-16)	130	94	92	-	-
CAYm3 (2014-15)	123	86	76	72	-
CAYm4 (2013-14) LYG	120	87	87	87	87
CAYm5 (2012-13) LYGm1	124	104	88	88	87
CAYm6 (2011-12) LYGm2	132	99	93	92	92

**Table 4.3:** Number of students graduated successfully

Year of entry	N1 + N2 + N3 (As defined above)	Number of students who have successfully graduated			
		I Year	II Year	III Year	IV Year
CAY (2017-18)	117	-	-	-	-
CAYm1 (2016-17)	143	98	-	-	-
CAYm2 (2015-16)	130	103	109	-	-
CAYm3 (2014-15)	123	105	93	93	-
CAYm4 (2013-14) LYG	120	109	108	98	92
CAYm5 (2012-13) LYGm1	124	108	117	107	93
CAYm6 (2011-12) LYGm2	132	111	124	119	116

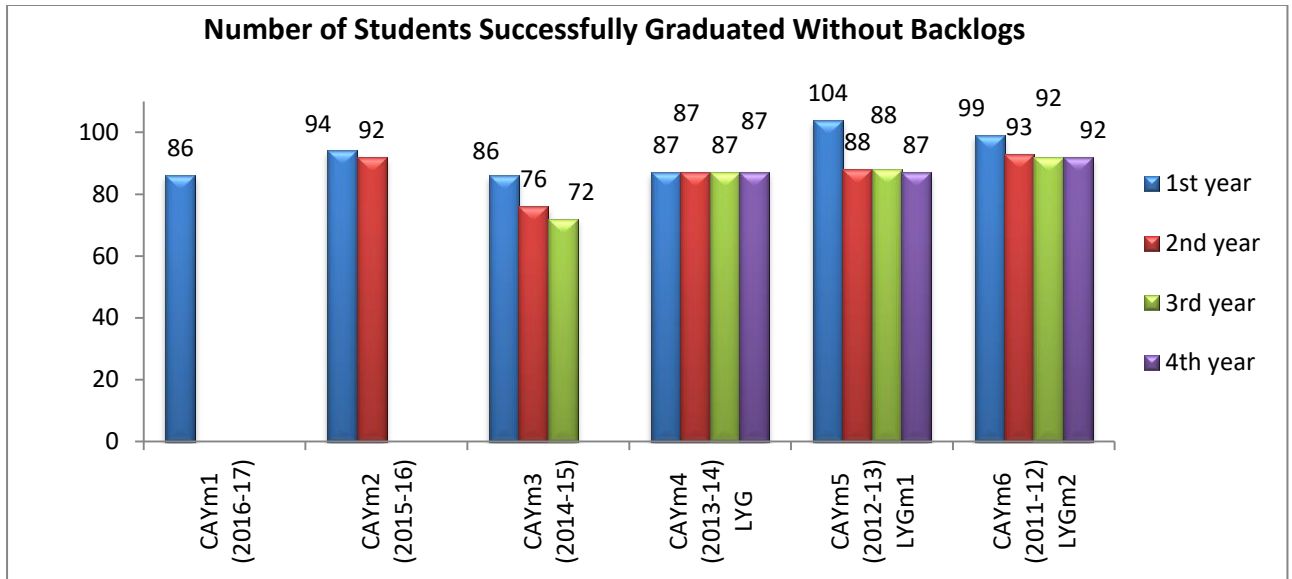


Figure 4.2: Number of students successfully graduated without backlogs

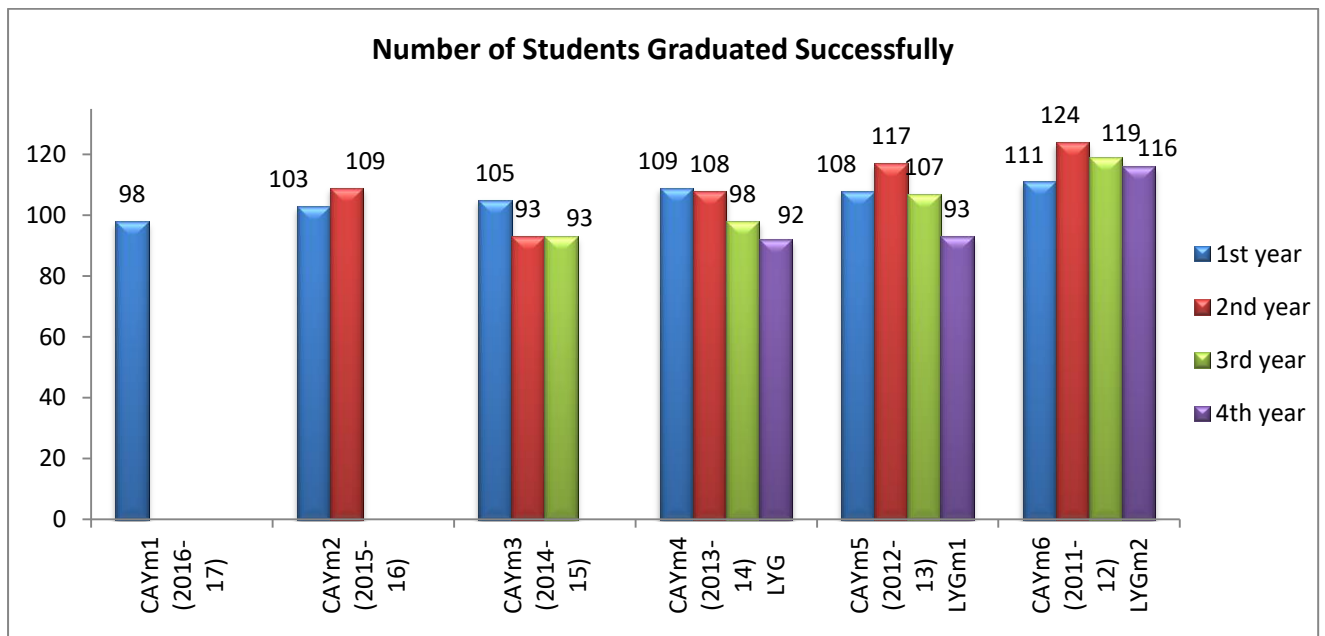
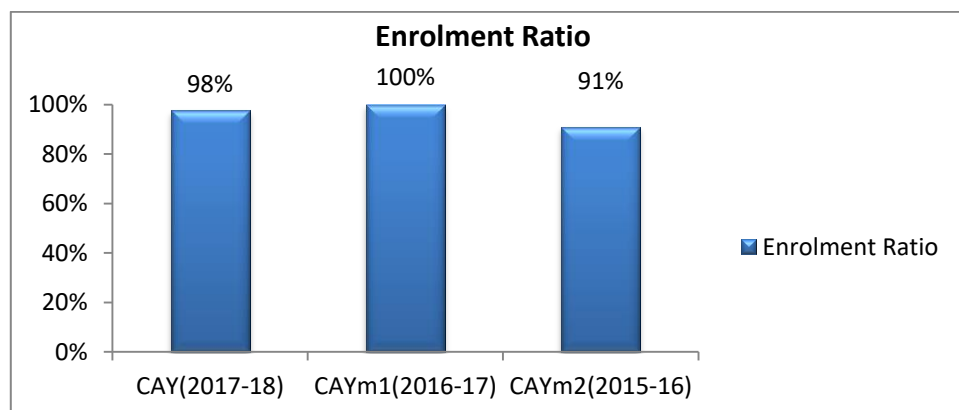


Figure 4.3: Number of students graduated successfully

**4.1 Enrolment Ratio****(20)**Enrolment Ratio =  $N1/N$ **Table 4.1.1:** Enrolment ratio

	<b>CAY (2017-18)</b>	<b>CAYm1 (2016-17)</b>	<b>CAYm2 (2015-16)</b>
Sanctioned intake of the program (N)	120	120	120
Total number of students admitted in first year minus number of students migrated to other programs/institutions plus no. of students migrated to this program (N1)	117	120	109
<b>Enrolment Ratio</b>	<b>97.5%</b>	<b>100%</b>	<b>90.83%</b>

**Figure 4.1.1:** Enrolment ratio

**4.2. Success Rate in the Stipulated Period of the Program (40)****4.2.1. Success Rate without Backlogs in any Semester/Year of Study (25)**

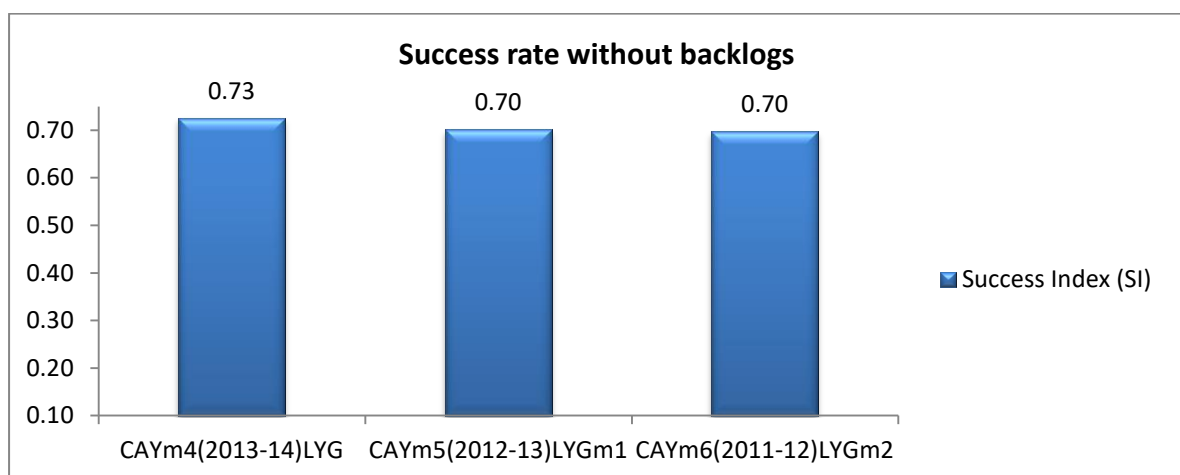
$SI = (\text{Number of students who have graduated from the program without backlog}) / (\text{Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry and separate division, if applicable}).$

*Average SI = Mean of Success Index (SI) for past three batches.*

*Success rate without backlogs in any year of study = Average SI × 25Average.*

**Table 4.2.1.1:** Success rate without backlogs

Item	Latest Year of Graduation, LYG (CAYm4) 2017 (2013-14)	Latest Year of Graduation minus 1, LYGm1 (CAYm5) 2016 (2012-13)	Latest Year of Graduation minus 2, LYGm2 (CAYm6) 2015 (2011-12)
Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry division, if applicable	120	124	132
Number of students who have graduated without backlogs in the stipulated period	87	87	92
<b>Success Index (SI)</b>	<b>0.73</b>	<b>0.70</b>	<b>0.70</b>
<b>Average SI</b>	<b>0.71</b>		



**Figure 4.2.1.1:** Success rate without backlogs



**4.2.2. Success Rate with backlogs in Stipulated Period of Study****(15)**

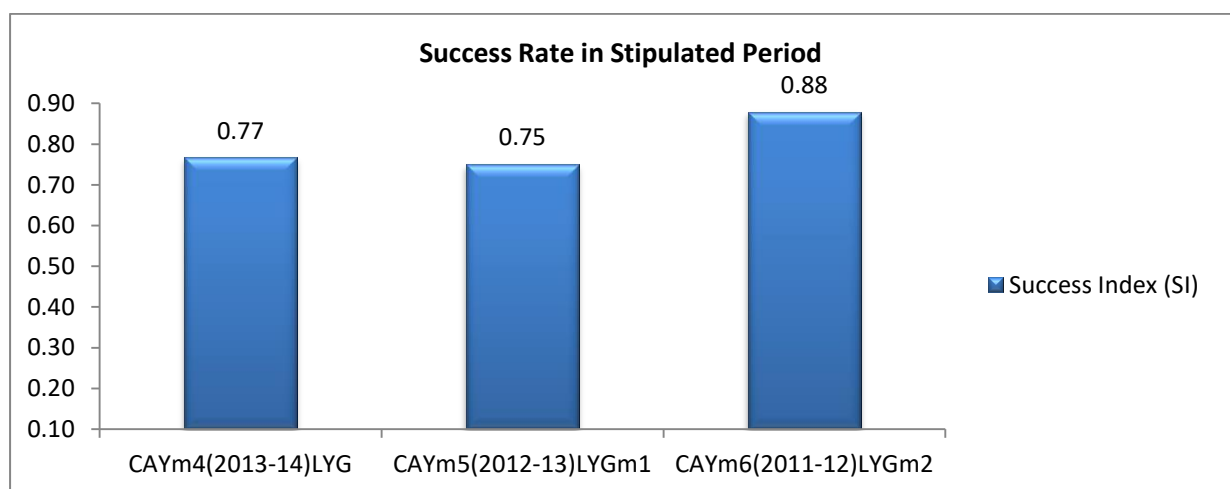
$SI = \frac{\text{(Number of students who graduated from the program in the stipulated period of course duration)}}{\text{(Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry and separate division, if applicable)}}$

Average SI = mean of Success Index (SI) for past three batches Success rate=15x Average SI.

Note: If 100% students clear without any backlog then also total marks scored will be 40 as both 4.2.1 & 4.2.2 will be applicable simultaneously.

**Table 4.2.2.1:** Success rate with backlogs in stipulated period

Item	Latest Year of Graduation, LYG (CAYm4) 2017 (2013-14)	Latest Year of Graduation minus 1, LYGm1 (CAYm5) 2016 (2012-13)	Latest Year of Graduation minus 2, LYGm2 (CAYm6) 2015 (2011-12)
Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry division, if applicable	120	124	132
Number of students who have graduated in the stipulated period	92	93	116
<b>Success Index (SI)</b>	<b>0.77</b>	<b>0.75</b>	<b>0.88</b>
<b>Average SI</b>	<b>0.80</b>		

**Figure 4.2.2.1:** Success rate in stipulated period

**4.3. Academic Performance in Third Year****(15)**

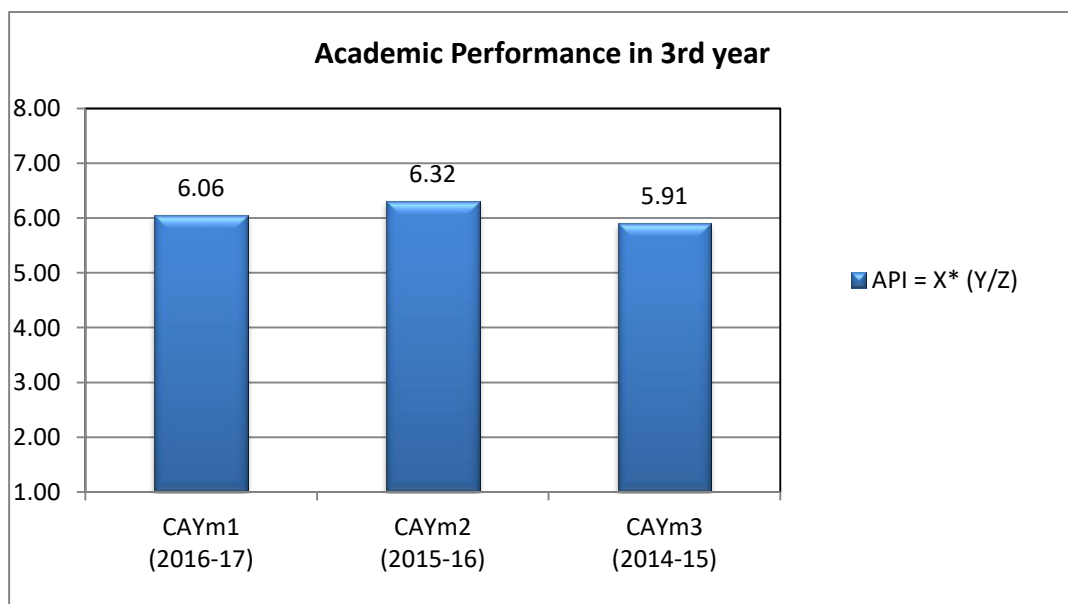
*Academic Performance = 1.5 \* Average API (Academic Performance Index)*

*API = ((Mean of 3rdYear Grade Point Average of all successful Students on a 10pointscale) or (Mean of the percentage of marks of all successful students in Third Year/10)) X(number of successful students/number of students appeared in the examination)*

*Successful students are those who are permitted to proceed to the final year.*

**Table 4.3.1:** Academic performance in 3rd year

Academic Performance	CAYm1 (2016-17)	CAYm2 (2015-16)	CAYm3 (2014-15)
Mean of CGPA or Mean Percentage of all successful students(X)	6.06	6.51	6.35
Total no. of successful students (Y)	93	98	107
Total no. of students appeared in the examination (Z)	93	101	115
<b>API = X* (Y/Z)</b>	<b>6.06</b>	<b>6.32</b>	<b>5.91</b>
<b>Average API = (AP1 + AP2 + AP3)/3</b>	<b>6.09</b>		

**Figure 4.3.1:** Academic performance in 3rd year

**4.4. Academic Performance in Second Year****(15)**

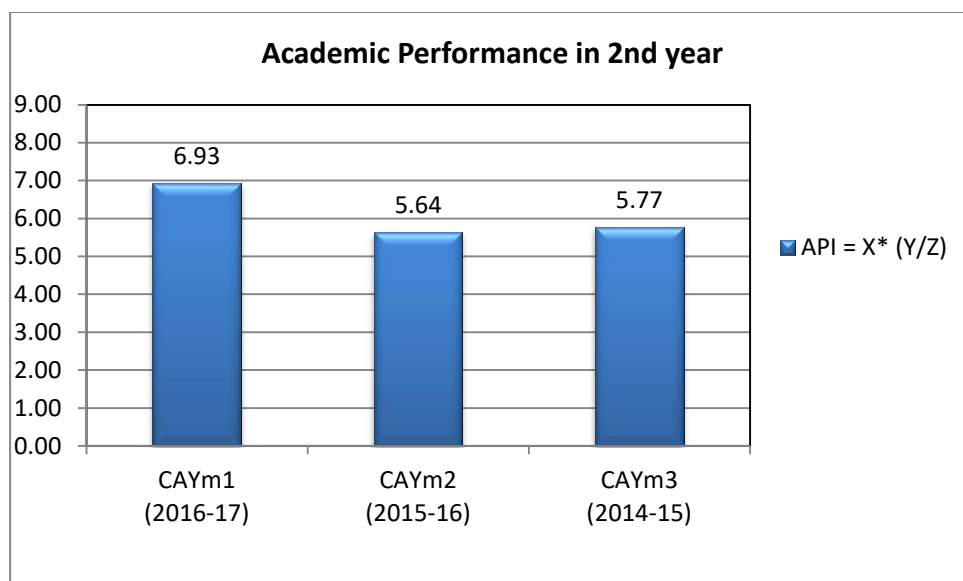
*Academic Performance Level = 1.5 \* Average API (Academic Performance Index)*

*API = ((Mean of 2ndYear Grade Point Average of all successful Students on a 10pointscale) or (Mean of the percentage of marks of all successful students in Second Year/10)) x (number of successful students/number of students appeared in the examination)*

*Successful students are those who are permitted to proceed to the Third year.*

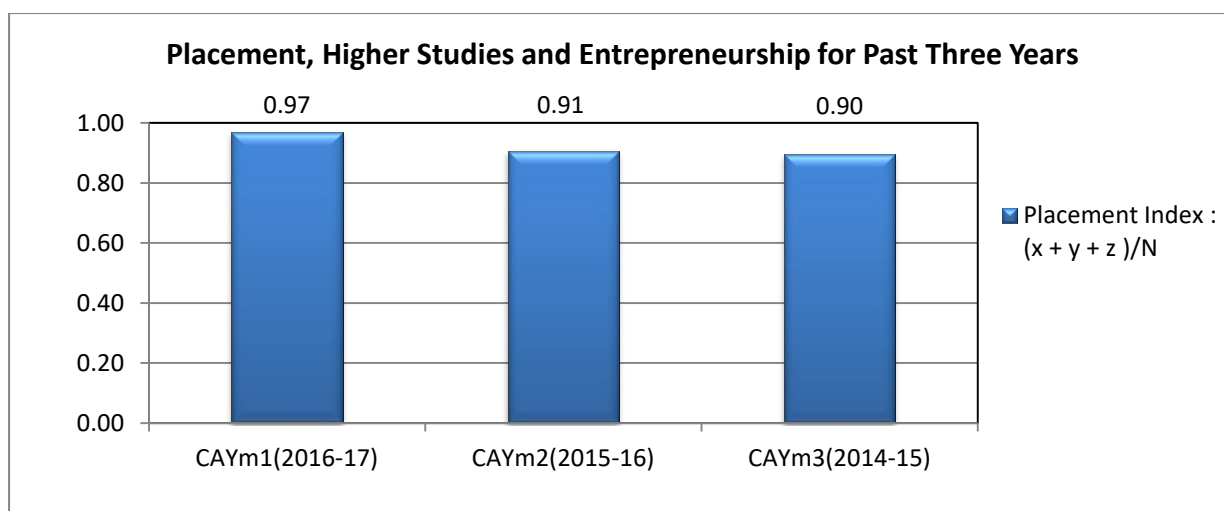
**Table 4.4.1:** Academic performance in 2nd year

Academic Performance	CAYm1 (2016-17)	CAYm2 (2015-16)	CAYm3 (2014-15)
Mean of CGPA or Mean Percentage of all successful students(X)	8.27	6.12	6.36
Total no. of successful students (Y)	109	93	108
Total no. of students appeared in the examination (Z)	130	101	119
<b>API = X* (Y/Z)</b>	<b>6.93</b>	<b>5.64</b>	<b>5.77</b>
<b>Average API = (AP1 + AP2 + AP3)/3</b>	<b>6.11</b>		

**Figure 4.4.1:** Academic performance in 2nd year

**4.5. Placement, Higher Studies and Entrepreneurship****(40)***Assessment Points = 40 × average placement***Table 4.5.1:** Placement, Higher studies and Entrepreneurship for past three years

Item	CAYm1 (2016-17)	CAYm2 (2015-16)	CAYm3 (2014-15)
Total No. of Final Year Students (N)	97	107	116
No. of students placed in companies or Government Sector (x)	87	91	99
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (y)	4	3	3
No. of students turned entrepreneur in engineering/technology (z)	3	3	2
$x + y + z =$	94	97	104
<b>Placement Index : <math>(x + y + z)/N</math></b>	<b>0.97</b>	<b>0.91</b>	<b>0.90</b>
<b>Average placement = <math>(P1 + P2 + P3)/3</math></b>	<b>0.92</b>		

**Figure 4.5.1:** Placement, Higher studies and Entrepreneurship for past three years**4.6. Professional Activities****(20)**

**4.6.1. Professional Societies/Chapters and Organizing Engineering Events****(5)****Table 4.6.1.1:** List of Professional Societies/Chapters

S.No	Professional Societies/chapters
1	Indian Society for Technical Education (ISTE)
2	Karnataka Renewable Energy Development Limited, Bangalore (KREDL)
3	Institute of Electrical and Electronics Engineers (IEEE)
4	Institution of Engineers India (IEI)

**Table 4.6.1.2:** List of Professional Societies/Chapters and Organizing Engineering Events in CAY (2017-18)

Sl. No	NAME OF PROFESSIONAL SOCIETIES / CHAPTERS	ORGANIZED EVENT AND TITLE	ORGANIZED PERIOD	NO. OF PARTICIPANTS/ ATTENDEES	NO. OF DAYS	OUTCOME
1	ISTE Chapter, NHCE , Bangalore	Workshop on Create your own design using Adobe Tools	16.03.2018	30	1	POs:1,2,3,4,5,7,9,10,11,1 2 PSOs:1
2	ISTE Chapter, NHCE , Bangalore	Hands on Training in PLC and SCADA	02.03.2018 to 03.03.2018	36	2	POs:1,2,3,4,5,7,9,10,11,1 2 PSOs:1
3	Institution of Engineers (India)	Workshop on Electrical AutoCAD	6.11.2017	60	1	POs:1,2,3,4,5,9,10,12 PSOs:1,2
4	ISTE Chapter, NHCE , Bangalore	Workshop on Android for Electrical Engineers	13.10.2017 to 14.10.2017	45	2	POs:1,2,3,4,5,9,10,11,12 PSOs:1,2
5	ISTE Chapter, NHCE , Bangalore	Workshop on Automation Using Mobile APP	06.10.2017 to 7.10.2017	50	2	POs:1,2,3,4,5,9,10,11,12 PSOs:1,2
6	Institute of Electrical and Electronics Engineers (IEEE)	Workshop on E-Digital Marketing	15-09-2017 to 16-09-2017	55	2	POs:1,2, 5,9,10,11,12 PSOs:1
7	KREDL , Bangalore	Energy Conservation Awareness Programme	09.03.2018	30	1	POs: 1,2,3,4,5,6,7,8, 9,10,11,12 PSOs:1,2
8	KREDL , Bangalore	Greenovate – Idea Presentation on Energy Conservation	13.03.2018	40	1	POs:1,2,3,4,5,6,7,8,9,10, 12 PSOs:1,2

**Table 4.6.1.3:** List of Professional Societies/Chapters and Organizing Engineering

## Events in CAY (2016-17)

Sl. No	NAME OF PROFESSIONAL SOCIETIES / CHAPTERS	ORGANIZED EVENT AND TITLE	ORGANIZED PERIOD	NO. OF PARTICIPANTS/ ATTENDEES	NO. OF DAYS	OUTCOME
1	ISTE Chapter, NHCE , Bangalore	Workshop on REVIT-MEP & PRIMAVERA	30.03.2017	40	1	POs:1,2,3,4,5,9, 10,12 PSOs:1,2
2	ISTE Chapter, NHCE , Bangalore	Hands on Training in Solar Energy Harnessing	24.03.2017	60	1	POs:1,2,3,4, 5,9,10,11,12 PSOs:1,2
3	ISTE Chapter, NHCE , Bangalore	Workshop on Industrial Automation	09.03.2017	45	1	POs:1,2,3,4,5,9,1 0,11,12 PSOs:1,2
4	ISTE Chapter, NHCE , Bangalore	Workshop on PLC Automation	02.03.2017	45	1	POs:1,2,3,4,5,7,9, 10,11,12 PSOs:1
5	ISTE Chapter, NHCE , Bangalore	Workshop on Electric Circuit Drafting Using Electrical AutoCAD	01.02.2017	50	1	POs:1,5,6 9,10,11,12 PSOs:1,2
6	ISTE Chapter, NHCE , Bangalore	Hands on Training in Aurdino	23-10-2016	55	1	POs:1,2,3,4,5,9, 10,12 PSOs:1,2
7	ISTE Chapter, NHCE , Bangalore	TECHORIZON 2017 – A Project Exhibition	27.05.2017	96	1	POs: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 PSOs:1,2
8	Institute of Electrical and Electronics Engineers	National Conference on Recent Technologies In Electrical and Electronics - TECHXELLECE - 2017	19.04.2017	90	1	POs: 1,2,3, 4, 5, 8, 9, 10, 11,12 PSOs:1,2
9	Institution of Engineers (India)	ELECTROHORIZON' 17 - National Technical FEST	13.04.2017	90	1	POs: 1,2,3, 4, 5, 8, 9, 10, 11,12 PSOs:1,2
10	KREDL , Bangalore	Energy Conservation Awareness Programme	20.02.2017 to 28.02.2017	80	6	POs: 1,2,3,4,5,6,7,8, 9,10,11,12 PSOs:1,2

Table 4.6.1.4: List of Professional Societies/Chapters and Organizing Engineering

## Events in CAYm2 (2015-16)

Sl. No	NAME OF PROFESSIONAL SOCIETIES / CHAPTERS	ORGANIZED EVENT AND TITLE	ORGANIZED PERIOD	NO. OF PARTICIPANTS / ATTENDEES	NO. OF DAYS	OUTCOME
1	ISTE Chapter, NHCE , Bangalore	Technical Training on PSIM	11.04.2016	55	1	POs:1,2,3,4,5,9, 10,12 PSOs:1,2
2	ISTE Chapter, NHCE , Bangalore	Technical Workshop on PLC/ SCADA	17.02.2016	45	1	POs:1,2,3,4, 5,9,10,11,12 PSOs:1,2
3	ISTE Chapter, NHCE , Bangalore	Workshop on ETAP- Electrical Power System Analysis Simulation Software	10.10.2015	55	1	POs:1,2,3,4,5,9,1 0,11,12 PSOs:1,2
4	Institute of Electrical and Electronics Engineers (IEEE)	Introduction to Maple Sim Software	07.11.2015	50	1	POs:1,2,3,4,5,7,9, 10,11,12 PSOs:1
5	ISTE Chapter, NHCE , Bangalore	REC Mechanism and RE Integration	04.11.15	60	1	POs:1,5,6 9,10,11,12 PSOs:1,2
6	ISTE Chapter, NHCE , Bangalore	TECHORIZON 2016 - A Project Exhibition	21.05.2016	96	1	POs: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 PSOs:1,2
7	KREDL & Institute of Electrical and Electronics Engineers	ELECTROGREEN 2016-National Tech Fest	27.02.2016	85	1	POs: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 PSOs:1,2
8	KREDL , Bangalore	Energy Conservation Awareness Programme	08.02.2016 - 13.02.2016	80	6	POs: 1,2,3,4,5,6,7,8, 9,10,11,12 PSOs:1,2

**Photo Gallery of the Engineering Events conducted by the Department**

**Figure 4.6.1.1:** Two day's Workshop on Digital Marketing on 15th and 16th September 2017



**Figure 4.6.1.2:** Two day's Workshop on Android for Electrical Engineers on 13<sup>th</sup> and 14<sup>th</sup> October 2017





Figure 4.6.1.3: Workshop on “REVITMEP AND PRIMEVERA” on 30th March 2017

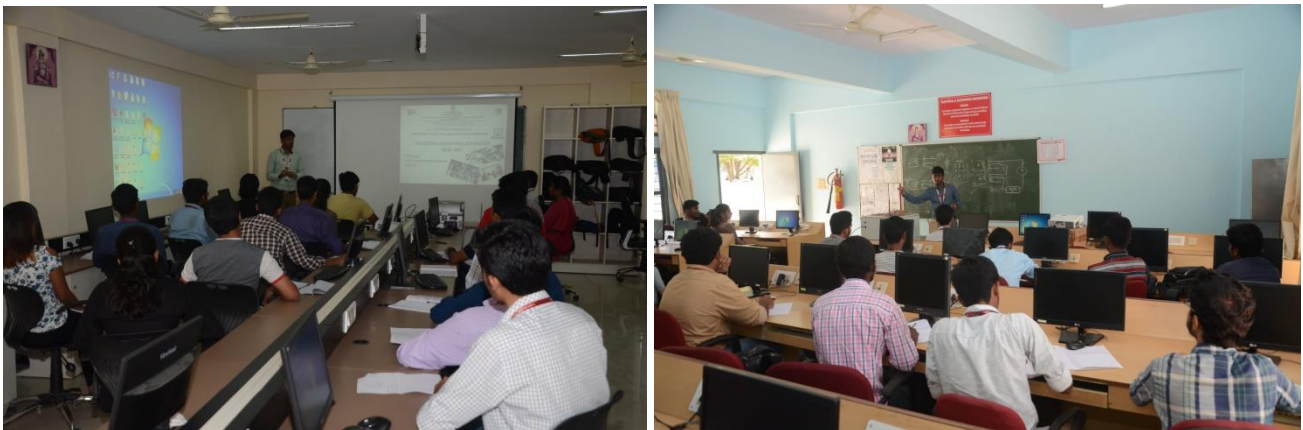
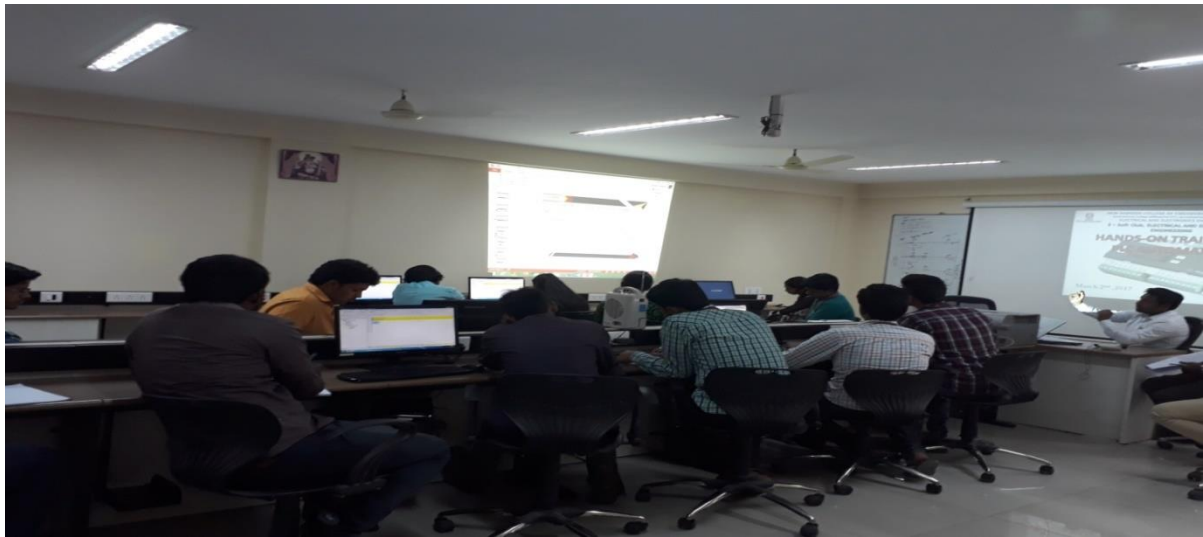


Figure 4.6.1.4: Workshop on “INDUSTRIAL AUTOMATION” on 09th March 2017



**Figure 4.6.1.5:** Hands on Training in “PLC Automation” on 2nd March 2017



**Department’s Green Energy Club organized one day work shop on “Solar Energy Harnessing”  
Department thanks, Roshni Sholapurwala(Alumni, EEE department) Stanford University, USA,  
Additional Director, ZEONICS SYSTEM DEFENCE & AEROSPACE ENGINEERING PVT LTD**

**Figure 4.6.1.6:** Workshop on Solar Energy Harnessing on 23<sup>rd</sup> March 2017

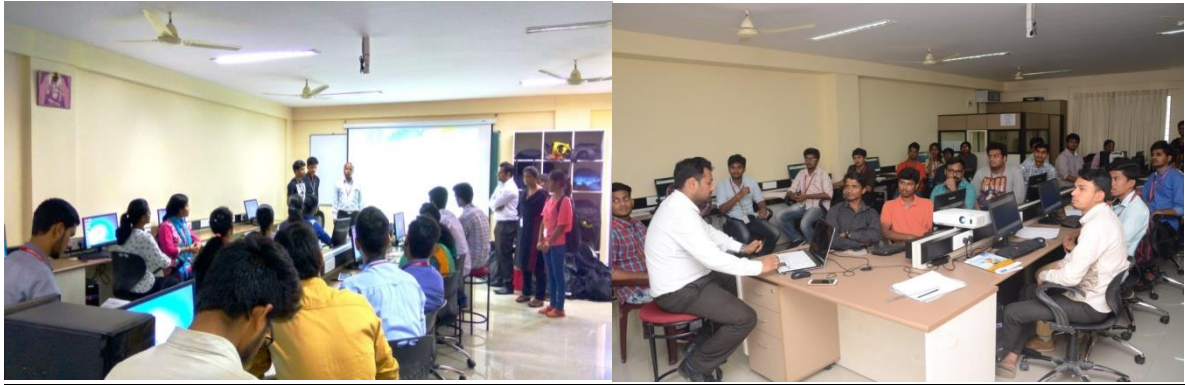


Figure 4.6.1.7: Workshop on “CIRCUIT DRAFTING USING ELECTRICAL AUTOCAD ON 1<sup>ST</sup> Feb 2017”



Figure 4.6.1.8: National Conference on Recent Technologies in Electrical and Electronics RTEE-2017 on 19.04.2017



**National Conference - TechXellence-2017**

Figure 4.6.1.9: National Conference on TechXellence 2017 on 5<sup>th</sup> May 2017

## 4.6.2 Publication of Technical Magazines, Newsletters

(5)

Table 4.6.2.1: List of Publication of Technical Magazines, Newsletters in CAYm2 (2015-16)

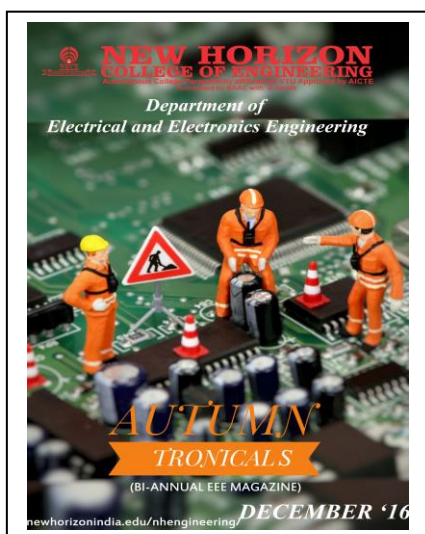
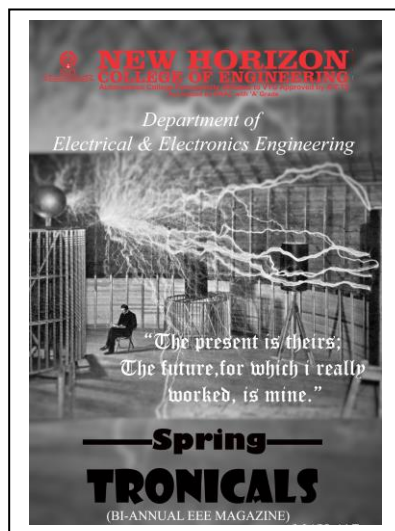
Sl. No	Year	Name of the Publication of Technical Magazines/Newsletters	Month of publication
<b>EEE Newsletters</b>			
1	2015-2016	Currents-Volume 5 Issue 2 (Bi annual EEE Newsletter)	Jun-16
2	2015-2016	Currents-Volume 5 Issue 1 (Bi annual EEE Newsletter)	Dec-15
<b>EEE Magazines</b>			
3	2015-2016	Spring Tronicals - May 2016 (Bi Annual EEE Magazine)	May-16
4	2015-2016	Autumn Tronicals - November 2015 (Bi Annual EEE Magazine)	Nov-15
<b>College Magazines</b>			
5	2015-2016	NH-Bytes - Volume -VI - Issue 6 (Monthly College Magazine)	Jun-16
6	2015-2016	NH-Bytes - Volume -VI - Issue 5 (Monthly College Magazine)	May-16
7	2015-2016	NH-Bytes - Volume -VI - Issue 4 (Monthly College Magazine)	Apr-16
8	2015-2016	NH-Bytes - Volume -VI - Issue 3 (Monthly College Magazine)	Mar-16
9	2015-2016	NH-Bytes - Volume -VI - Issue 2 (Monthly College Magazine)	Feb-16
10	2015-2016	NH-Bytes - Volume -VI - Issue 1 (Monthly College Magazine)	Jan-16

Table 4.6.2.2: List of Publication of Technical Magazines, Newsletters in CAYm1 (2016-17)

Sl. No	Year	Name of the Publication of Technical Magazines/Newsletters	Month of publication
<b>EEE Newsletters</b>			
1	2016-2017	NH-Currents-Volume 6 Issue 2 (Bi annual EEE Newsletter)	Jun-17
2	2016-2017	NH-Currents-Volume 6 Issue 1 (Bi annual EEE Newsletter)	Dec-16
<b>EEE Magazines</b>			
3	2016-2017	Spring Tronicals - May 2017 (Bi Annual EEE Magazine)	May-17
4	2016-2017	Autumn Tronicals - November 2016 (Bi Annual EEE Magazine)	Nov-16
<b>College Magazines</b>			
5	2016-2017	NH-Bytes - Volume -VII - Issue 6 (Monthly College Magazine)	Jun-17
6	2016-2017	NH-Bytes - Volume -VII - Issue 5 (Monthly College Magazine)	May-17
7	2016-2017	NH-Bytes - Volume -VII - Issue 4 (Monthly College Magazine)	Apr-17
8	2016-2017	NH-Bytes - Volume -VII - Issue 3 (Monthly College Magazine)	Mar-17
9	2016-2017	NH-Bytes - Volume -VII - Issue 2 (Monthly College Magazine)	Feb-17
10	2016-2017	NH-Bytes - Volume -VII - Issue 1 (Monthly College Magazine)	Jan-17
11	2016-2017	NH-Bytes - Volume -VI - Issue 12 (Monthly College Magazine)	Dec-16
12	2016-2017	NH-Bytes - Volume -VI - Issue 11 (Monthly College Magazine)	Nov-16
13	2016-2017	NH-Bytes - Volume -VI - Issue 10 (Monthly College Magazine)	Oct-16
14	2016-2017	NH-Bytes - Volume -VI - Issue 9 (Monthly College Magazine)	Sep-16
15	2016-2017	NH-Bytes - Volume -VI - Issue 8 (Monthly College Magazine)	Aug-16
16	2016-2017	NH-Bytes - Volume -VI - Issue 7 (Monthly College Magazine)	Jul-16

Table 4.6.2.3: List of Publication of Technical Magazines, Newsletters in CAY (2017-18)

Sl. No	Year	Name of the Publication of Technical Magazines/Newsletters	Month of publication
<b>EEE Newsletters</b>			
1	2017-2018	Currents-Volume 7 Issue 1 (Bi annual EEE Newsletter)	Dec-17
<b>EEE Magazines</b>			
2	2017-2018	Autumn Tronicals - November 2017 (Bi Annual EEE Magazine)	Nov-17
<b>College Magazines</b>			
3	2017-2018	NH-Bytes - Volume -VII - Issue 10 (Monthly College Magazine)	Oct-17
4	2017-2018	NH-Bytes - Volume -VII - Issue 9 (Monthly College Magazine)	Sep-17
5	2017-2018	NH-Bytes - Volume -VII - Issue 8 (Monthly College Magazine)	Aug-17
6	2017-2018	NH-Bytes - Volume -VII - Issue 7 (Monthly College Magazine)	Jul-17



## 4.6.3 Participation in inter-institute events by students of the program of study

(10)

Table 4.6.3.1: Participation in Inter-Institute events by students in CAY (2017-18)

SI NO	USN	NAME OF THE STUDENT	EVENT	PLACE	DATE	OUTCOME
1	1NH15EE027	KAUSTUV MAJUMDER	INTERNSHIP TRAINING	WEST BENGAL STATE ELECTRICITY TRANSMISSION CORPORATION LTD	18.12.2017 TO 08.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
2	1NH15EE723	MD SAAD	INTERNSHIP TRAINING	WEST BENGAL STATE ELECTRICITY TRANSMISSION CORPORATION LTD	18.12.2017 TO 08.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
3	1NH15EE736	PRATIM SIL	INTERNSHIP TRAINING	WEST BENGAL STATE ELECTRICITY TRANSMISSION CORPORATION LTD	18.12.2017 TO 08.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
4	1NH15EE736	PRATIM SIL	INTERNSHIP TRAINING	AIR TRAFFIC CONTROL	03.01.2018 TO 16.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
5	1NH15EE020	VIKAS G	INTERNSHIP TRAINING	I POWER TECHNOLOGY, BANGALORE	18.12.2017 TO 30.12.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
6	1NH15EE024	HARSHA T	INTERNSHIP TRAINING	I POWER TECHNOLOGY, BANGALORE	18.12.2017 TO 30.12.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
7	1NH15EE051	SHARATH M	INTERNSHIP TRAINING	I POWER TECHNOLOGY, BANGALORE	18.12.2017 TO 30.12.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
8	1NH15EE006	AMRUTHA HEGDE	INTERNSHIP TRAINING	I POWER TECHNOLOGY, BANGALORE	18.12.2017 TO 30.12.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
9	1NH15EE057	SUMA M	INTERNSHIP TRAINING	I POWER TECHNOLOGY, BANGALORE	18.12.2017 TO 30.12.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
10	1NH15EE060	SWAROOP H J	INTERNSHIP TRAINING	I POWER TECHNOLOGY, BANGALORE	18.12.2017 TO 30.12.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
11	1NH15EE746	SHASHI KIRAN V	INTERNSHIP IN DESIGN OF SUBSTATION AND ITS CONCERN TECHNICAL SPECIFICATION	KPTCL, AVENUE ROAD, BANGALORE	22.12.2017 TO 06.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
12	1NH15EE705	BHAVAN.N	INTERNSHIP IN DESIGN OF SUBSTATION AND ITS CONCERN TECHNICAL SPECIFICATION	KPTCL, AVENUE ROAD, BANGALORE	22.12.2017 TO 06.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2

13	1NH15EE716	HARSHITH.G	INTERNSHIP IN DESIGN OF SUBSTATION AND ITS CONCERN TECHNICAL SPECIFICATION	KPTCL, AVENUE ROAD, BANGALORE	22.12.2017 TO 06.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
14	1NH15EE727	NAVEEN KUMAR S	INTERNSHIP IN DESIGN OF SUBSTATION AND ITS CONCERN TECHNICAL SPECIFICATION	KPTCL, AVENUE ROAD, BANGALORE	22.12.2017 TO 06.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
15	1NH15EE738	RAJESH.V	INTERNSHIP IN DESIGN OF SUBSTATION AND ITS CONCERN TECHNICAL SPECIFICATION	KPTCL, AVENUE ROAD, BANGALORE	22.12.2017 TO 06.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
16	1NH15EE734	PRABHU K	INTERNSHIP IN DESIGN OF SUBSTATION AND ITS CONCERN TECHNICAL SPECIFICATION	KPTCL, AVENUE ROAD, BANGALORE	22.12.2017 TO 06.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
17	1NH15EE735	PRAMOD KUMAR	INTERNSHIP IN DESIGN OF SUBSTATION AND ITS CONCERN TECHNICAL SPECIFICATION	KPTCL, AVENUE ROAD, BANGALORE	22.12.2017 TO 06.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
18	1NH15EE749	SIREESH REDDY	INTERNSHIP IN DESIGN OF SUBSTATION AND ITS CONCERN TECHNICAL SPECIFICATION	KPTCL, AVENUE ROAD, BANGALORE	22.12.2017 TO 06.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
19	1NH15EE728	NIHARIKA	INTERNSHIP IN TRANSMISSION PLANNING	KPTCL, AVENUE ROAD, BANGALORE	21.12.2017 TO 04.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
20	1NH15EE733	POOJA R	INTERNSHIP IN TRANSMISSION PLANNING	KPTCL, AVENUE ROAD, BANGALORE	21.12.2017 TO 04.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
21	1NH15EE740	SAHANA.V	INTERNSHIP IN TRANSMISSION PLANNING	KPTCL, AVENUE ROAD, BANGALORE	21.12.2017 TO 04.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
22	1NH15EE753	TEJASV.L	INTERNSHIP IN TRANSMISSION PLANNING	KPTCL, AVENUE ROAD, BANGALORE	21.12.2017 TO 04.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
23	1NH15EE741	SAHELI ROY	INTERNSHIP IN TRANSMISSION PLANNING	KPTCL, AVENUE ROAD, BANGALORE	21.12.2017 TO 04.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
24	1NH15EE719	KAVYA L C	INTERNSHIP IN TRANSMISSION PLANNING	KPTCL, AVENUE ROAD, BANGALORE	21.12.2017 TO 04.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
25	1NH15EE039	NIKHIL DUBEY	INTERNSHIP IN TRANSMISSION PLANNING	KPTCL, AVENUE ROAD, BANGALORE	21.12.2017 TO 04.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2

26	1NH15EE713	SHARMILA D	INTERNSHIP IN TRANSMISSION PLANNING	KPTCL, AVENUE ROAD, BANGALORE	21.12.2017 TO 04.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
27	1NH14EE756	SANJAY S	INTERNSHIP TRAINING	HINDUSTAN AERONAUTICS LIMITED, BANGALORE	08.01.2018 TO 20.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
28	1NH14EE755	SAMARTH SHARMA	INTERNSHIP TRAINING	HINDUSTAN AERONAUTICS LIMITED, BANGALORE	08.01.2018 TO 20.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
29	1NH14EE741	AKSHAYA C R	INTERNSHIP TRAINING	HINDUSTAN AERONAUTICS LIMITED, BANGALORE	08.01.2018 TO 20.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
30	1NH14EE752	PRIYANKA PRAMOD WANI	INTERNSHIP TRAINING	HINDUSTAN AERONAUTICS LIMITED, BANGALORE	08.01.2018 TO 20.01.2018	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
31	1NH14EE005	AGEESH A	INTERNSHIP TRAINING IN RENEWABLE ENERGY	SCHNEIDER ELECTRIC INDIA, BANGALORE	13.09.2017 TO 25.09.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
32	1NH15EE717	ISHA GUPTA	INTERNSHIP AT MCAFFIENE	ONLINE	1.9.2017 TO 30.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
33	1NH15EE701	ABHISHEK KUMAR SINGH	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
34	1NH15EE705	BHAVAN.N	INDIAN TECHNOLOGY CONGRESS 2017	NIMHANS CONVENTION CENTRE	10.08.2017 TO 11.08.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
35	1NH15EE705	BHAVAN.N	SEMINAR ON CYBER SECURITY AND MALWARE ANALYSIS	THE OXFORD COLLEGE OF ENGINEERING BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
36	1NH15EE708	CHARUSHRIM	POPULATION OF REMOTE SENSING BASED MAPS AND GEOSPATIAL INFORMATION	ISRO, BANGALORE	11.8.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
37	1NH15EE710	CHINTAN DHAMECHA	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
38	1NH15EE715	GAURAV SHARMA	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
39	1NH15EE716	HARSHITH.G	POPULATION OF REMOTE SENSING BASED MAPS AND GEOSPATIAL INFORMATION	PEC UNIVERSITY OF TECHNOLOGY	11.8.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
40	1NH15EE716	HARSHITH.G	SEMINAR ON CYBER SECURITY AND MALWARE ANALYSIS	THE OXFORD COLLEGE OF ENGINEERING BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1



41	1NH15EE717	ISHA GUPTA	AUTOMATI-0 2017	LIVE WIRE, BANGALORE	1.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
42	1NH15EE718	K.P.JEEVAN BOPANNA	DIGITAL MARKETING WORKSHOP	LIVE WIRE, BANGALORE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
43	1NH15EE722	MANU.B.C	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
44	1NH15EE726	NAVEEN KUMAR N	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
45	1NH15EE727	NAVEEN KUMAR S	SEMINAR INDIAN TECHNOLOGY CONGRESS	NIMHANS CONVENTION CENTRE	10.8.2017 TO 11.8.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
46	1NH15EE727	NAVEEN KUMAR S	CYBER SECURITY AND MALWARE ANALYSIS	THE OXFORD COLLEGE OF ENGINEERING BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
47	1NH15EE728	NIHARIKA	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	30.10.2017 TO 01.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
48	1NH15EE729	NIKHIL PRAJAPATI	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	30.10.2017 TO 01.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
49	1NH15EE730	NIKHIL KUMAR	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
50	1NH15EE733	POOJA R	CYBER SECURITY AND MALWARE ANALYSIS	THE OXFORD COLLEGE OF ENGINEERING BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
51	1NH15EE734	PRABHU K	CYBER SECURITY AND MALWARE ANALYSIS	THE OXFORD COLLEGE OF ENGINEERING BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
52	1NH15EE735	PRAMOD KUMAR	CYBER SECURITY AND MALWARE ANALYSIS	THE OXFORD COLLEGE OF ENGINEERING BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
53	1NH15EE737	PRIYANAKA.S	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
54	1NH15EE738	RAJESH.V	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
55	1NH15EE740	SAHANA.V	CYBER SECURITY AND MALWARE ANALYSIS	THE OXFORD COLLEGE OF ENGINEERING BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
56	1NH15EE743	SAIPRIYA LAKSHMIPATH Y	CYBER SECURITY & MALWARE ANALYSIS	THE OXFORD COLLEGE OF ENGINEERING BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1

57	1NH15EE744	SANDHYA.M	POPULATION OF REMOTE SENSING BASED MAPS AND GEOSPATIAL INFORMATION	ISRO, BANGALORE	11.8.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
58	1NH15EE745	SANJAY	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
59	1NH15EE746	SHASHI KIRAN V	CYBER SECURITY AND MALWARE ANALYSIS	THE OXFORD COLLEGE OF ENGINEERING BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
60	1NH15EE747	SHILADITYA PAUL	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	1.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
61	1NH15EE748	SHUBHAM YADAV	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
62	1NH15EE749	SIREESH REDDY	POPULATION OF REMOTE SENSING BASED MAPS AND GEOSPATIAL INFORMATION	ISRO, BANGALORE	11.8.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
63	1NH15EE751	SUDESHNA HAZRA	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	31.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
64	1NH15EE753	TEJASV.L	SEMINAR INDIAN TECHNOLOGY CONGRESS	NIMHANS CONVENTION CENTRE	10.8.2017 TO 11.8.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
65	1NH15EE753	TEJASV.L	CYBER SECURITY AND MALWARE ANALYSIS	THE OXFORD COLLEGE OF ENGINEERING BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
66	1NH15EE754	THARUN.M	CUTTING EDGE SPACE TECHNOLOGIES	AMRITA SCHOOL OF ENGINEERING BANGALORE	28.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
67	1NH15EE756	VINAYAKA PATEL.S	CYBER SECURITY AND MALWARE ANALYSIS	THE OXFORD COLLEGE OF ENGINEERING BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
68	1NH15EE757	VISHNU PRASAD.M.P	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
69	1NH15EE758	VISHNU PRASAD. R	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
70	1NH15EE758	VISHNU PRASAD. R	MOOCS ON VIRTUALIZATION FOR BEGINNERS	VMWARE IT ACADEMY	11.5.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
71	1NH16EE700	AAKASH KUMAR	TECHTRANSFORM 2017 ,BMSIT	AVALAHALLI, DODDABALLAPUR ROAD	27.10.2017 TO 28.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
72	1NH16EE704	AGHIL BABU	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	30.10.2017 TO 1.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1

73	1NH16EE711	BIRENDER PRATAP SINGH	CUTTING EDGE SPACE TECHNOLOGIES	AMRITA SCHOOL OF ENGINEERING BANGALORE	28.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
74	1NH16EE718	HARSHA B S	CUTTING EDGE SPACE TECHNOLOGIES	AMRITA SCHOOL OF ENGINEERING BANGALORE	28.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
75	1NH16EE718	HARSHA B S	INSPIRON 17.0	UNIVERSITY VISVESVARAYA COLLEGE OF ENGINEERING, K R CIRCLE,BANGALORE	11.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
76	1NH16EE719	HEMANTH S	CUTTING EDGE SPACE TECHNOLOGIES	AMRITA SCHOOL OF ENGINEERING BANGALORE	28.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
77	1NH16EE721	VENKATA SATHISH	CUTTING EDGE SPACE TECHNOLOGIES	AMRITA SCHOOL OF ENGINEERING BANGALORE	28.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
78	1NH16EE722	JAVERIA FIRDOUS.K.R	CAD	CAD ONLINE	7.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
79	1NH16EE724	JOSHVA TOM JACOB	PARTICLE SWARM OPTIMIZATION	MATLAB ONLINE	10.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
80	1NH16EE729	N.G.HEMANTH KUMAR	CUTTING EDGE SPACE TECHNOLOGIES	AMRITA SCHOOL OF ENGINEERING BANGALORE	28.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
81	1NH16EE730	NETHRA.T	MATLAB & SIMULINK	MATLAB ONLINE	9.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
82	1NH16EE731	PATNAM VEERA SAI	CUTTING EDGE SPACE TECHNOLOGIES	AMRITA SCHOOL OF ENGINEERING BANGALORE	28.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
83	1NH16EE732	PAVAN S	CUTTING EDGE SPACE TECHNOLOGIES	AMRITA SCHOOL OF ENGINEERING BANGALORE	28.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
84	1NH16EE737	RAHUL.C.PASAR	MATLAB & SIMULINK	MATLAB ONLINE	5.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
85	1NH16EE738	RAJUNATH.J	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	30.10.2017 TO 1.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
86	1NH16EE739	RAMAN KUMAR	TECHTRANSFORM 2017,BMSIT	AVALAHALLI, DODDABALLAPUR ROAD	27.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
87	1NH16EE742	SANJITH KUMAR M S	MATLAB & SIMULINK	MATLAB ONLINE	5.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
88	1NH16EE742	SANJITH KUMAR M S	INSPIRON 17.0	UNIVERSITY VISVESVARAYA COLLEGE OF ENGINEERING, K R CIRCLE,BANGALORE	11.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1

89	1NH16EE742	SANJITH KUMAR M S	CUTTING EDGE SPACE TECHNOLOGIES	AMRITA SCHOOL OF ENGINEERING BANGALORE	28.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
90	1NH16EE743	SEEME PRAVEEN KUMAR	MATLAB & SIMULINK	MATLAB ONLINE	5.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
91	1NH16EE745	SHARATH BABU.M	INSPIRON 17.0	UNIVERSITY VISVESVARAYA COLLEGE OF ENGINEERING, K R CIRCLE,BANGALORE	11.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
92	1NH16EE745	SHARATH BABU.M	CUTTING EDGE SPACE TECHNOLOGIES	AMRITA SCHOOL OF ENGINEERING BANGALORE	28.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
93	1NH16EE745	SHARATH BABU.M	MATLAB & SIMULINK	MATLAB ONLINE	5.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
94	1NH16EE746	SIMRAN SHARMA	ELECTRICAL AUTOCAD	CAD ONLINE	6.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
95	1NH16EE748	SUPRIYA R	TECHNO CULTURAL FEST	PESIT BANGALORE SOUTH CAMPUS	03.11.2017 04.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
96	1NH16EE749	SOPROVO BANERJEE	ELECTRICAL AUTOCAD	LIVEWIRE	6.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
97	1NH16EE751	SWAROOP KULKARNI	WORKSHOP ON ANDROID	DREAM 360	13.10.2017 TO 14.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
98	1NH16EE751	SWAROOP KULKARNI	E-WEEK-2017	MANAGEMENT STUDIES, NHCE	23.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
99	1NH16EE752	THEJUS PRABHAKARAN	ELECTRICAL AUTOCAD	LIVEWIRE	6.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
100	1NH16EE753	UJJWAL KUMAR	ELECTRICAL AUTOCAD	LIVEWIRE	6.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
101	1NH16EE754	ULLAS.N	ELECTRICAL AUTOCAD	LIVEWIRE	6.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
102	1NH16EE756	VELU M	CUTTING EDGE SPACE TECHNOLOGIES	AMRITA SCHOOL OF ENGINEERING BANGALORE	28.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
103	1NH16EE757	VIJAY YADAV	ELECTRICAL AUTOCAD	LIVEWIRE	6.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
104	1NH16EE758	VIKRAM ANAND NARAYAN HEGDE	MICROCONTROLLERS AND C PROGRAMMING	ONLINE,UDEMY	13.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
105	1NH15EE007	ANUPAMA.B.T	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	15.09.2017 TO 16.09.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1

106	1NH15EE009	ARJUN J	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
107	1NH15EE010	ARUNKUMAR A	TCS TECH BYTES	SJBIT, BANGALORE	5.9.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
108	1NH15EE012	B MELWIN RAJAN	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
109	1NH15EE034	M MOHAMMED SAIF	COMMUNITIES OF THE FUTURE	CHRIST UNIVERSITY	9.11.2017 TO 09.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
110	1NH15EE037	N S ASHISH MUTHANNA	WORKSHOP ON ANDROID	DREAM 360	06.10.2017 TO 07.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
111	1NH15EE040	PORALLA BHARGAVI	SEMINAR CYBER SECURITY & MALWARE ANALYSIS	THE OXFORD COLLEGE OF SCIENCE, BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
112	1NH15EE044	R SUSHMA	CYBER SECURITY & MALWARE ANALYSIS	THE OXFORD COLLEGE OF SCIENCE, BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
113	1NH15EE045	ROOPA C	CYBER SECURITY & MALWARE ANALYSIS	THE OXFORD COLLEGE OF SCIENCE, BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
114	1NH15EE047	SAI DINESH.P	CYBER SECURITY & MALWARE ANALYSIS	THE OXFORD COLLEGE OF SCIENCE, BOMMANAHALLI, HOSUR ROAD BENGALURU	26.10.2017 TO 27.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
115	1NH15EE059	SURAJ PRASAD GUPTA	RNS INTER COLLEGIATE TOURNAMENT	RNS INSTITUTE OF TECHNOLOGY	27.02.2016 TO 29.02.2016	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
116	1NH15EE061	SYED UMAR AHMED	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	4.11.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
117	1NH15EE062	T. MUKHESH BABU	TCS TECH BYTES	SJBIT, BANGALORE	5.9.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
118	1NH15EE066	VIGNESH.B	CYBER SECURITY & MALWARE ANALYSIS	THE OXFORD COLLEGE OF SCIENCE, BENGALURU	26.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
119	1NH16EE411	P TARUN KUMAR	TCS TECH BYTES	SJBIT, BANGALORE	5.9.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
120	1NH16EE417	SINDHU CHAITANYA B S	CYBER SECURITY & MALWARE ANALYSIS	THE OXFORD COLLEGE OF SCIENCE, BENGALURU	26.10.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2

121	1NH14EE712	MADHU C	ELECTRICAL CAD	EDUCADD LEARNING SOLUTIONS, BANGALORE	17.05.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
122	1NH14EE720	RAJIV SAMPAT	ELECTRICAL CAD	EDUCADD LEARNING SOLUTIONS, BANGALORE	17.05.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
123	1NH14EE731	SUSHMITHA N	MASTER DIPLOMA IN ELECTRICAL , CAD	EDUCADD LEARNING SOLUTIONS, BANGALORE	17.05.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
124	1NH14EE733	THEJESH D REDDY	MASTER DIPLOMA IN ELECTRICAL , CAD	EDUCADD LEARNING SOLUTIONS, BANGALORE	17.05.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
125	1NH14EE707	DIPTIRANJAN MAHANTA	ELECTRICAL CAD	EDUCADD LEARNING SOLUTIONS, BANGALORE	17.05.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
126	1NH15EE016	DEEPKARAN SINGH	DIGITAL MARKETING WORKSHOP	DREAM 360	11.4.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
127	1NH15EE011	AVISHEK SINHA	DIGITAL MARKETING WORKSHOP	DREAM 360	15.09.2017 TO 16.09.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
128	1NH15EE011	AVISHEK SINHA	WORKSHOP ON AUTOMATION USING MOBILE APPS	DREAM 360	06.10.2017 TO 07.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
129	1NH15EE011	AVISHEK SINHA	AUTOMATI-0 2017	LIVE WIRE	10.7.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
130	1NH15EE003	ABHINAV ANAND	DIGITAL MARKETING WORKSHOP	DREAM 360	15-9-2017 TO 17-9-2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
131	1NH15EE013	BRUNDHA.G	POPULATION OF REMOTE SENSING BASED MAPS AND GEOSPATIAL INFORMATION	ISRO, BANGALORE	8.11.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
132	1NH16EE400	CHINTAMANI SANTOSH SHIVAPPA	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	11.4.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
133	1NH15EE024	HARSHA.T	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	15-09-2017 TO 16-9-2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
134	1NH15EE025	JAISHRIAM.K	DIGITAL MARKETING WORKSHOP	ELANCHOICE OFFICE	11.4.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
135	1NH15EE042	R.ARJUMANTH FARRAJ	DIGITAL MARKETING WORKSHOP	DREAM 360	15-9-2017 TO 16-9- 2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1
136	1NH15EE042	R.ARJUMANTH FARRAJ	ESOL INTERNATIONAL BUSINESS CERTIFICATE	CAMBRIDGE ENGLISH	24.08.2016	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1

137	1NH15EE042	R.ARJUMANTH FARRAJ	WORKSHOP ON AUTOMATION USING MOBILE APPS	DREAM 360	06.10.2017 TO 07.10.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
138	1NH15EE049	SHAHID ANSARI	AUTOMATI-0 2017	LIVE WIRE, BANGALORE	10.6.2017	POs:1,2,3,4,5,6, 7,8,9,10,11,12 PSOs:1,2
<b>Participation in Inter-Institute sports events by students</b>						
1	1NH14EE743	DIKSHYA HANDIQUE	ANNUAL INTERNATIONAL SPORTS FEST 2015	PES UNIVERSITY	27/10/2015 TO 30/10/2015	PO 9,10
2	1NH14EE743	DIKSHYA HANDIQUE	INTER COLLEGIATE INTER ZONE TOURNAMENTS	V P DR. P G HALAKATTI COLLEGE OF ENGG & TECH VIJAYAPURA	28/04/2015 TO 30/04/2015	PO 9,10
3	1NH14EE743	DIKSHYA HANDIQUE	10 TH DR. MS RAMAIAH MEMORIAL INTER ENGINEERING COLLEGES BASKET BALL MEN & WOMEN TOURNAMENT 2015- 16	M R RAMAIAH INSTITUTE OF TECHNOLOGY	03/10/2015 TO 06/10/2017	PO 9,10
4	1NH14EE753	RAVIKANT YADAV	ANNUAL INTERNATIONAL SPORTS FEST 2015	PES UNIVERSITY	27/10/2015 TO 30/10/2015	PO 9,10
5	1NH16EE034	MONIDEEPA RANA	BASKET BALL(W)	M.S RAMAIAH	20.09.2017 TO 22.09.2017	RUNNERS PO 9,10
6	1NH15EE039	NIKHIL DUBEY	CRICKET	AMC	07.10.2017 TO 10.10.2017	RUNNERS PO 9,10
7	1NH15EE039	NIKHIL DUBEY	CRICKET	AMC	15.10.2017 TO 16.10.2017	RUNNERS PO 9,10
8	1NH15EE039	NIKHIL DUBEY	CRICKET	PES	17.10.2017 TO 20.10.2017	RUNNERS PO 9,10
9	1NH15EE039	NIKHIL DUBEY	CRICKET	PES	23.10.2017 TO 25.10.2017	RUNNERS PO 9,10
10	1NH16EE405	HARASHA S	WRESTLING & JUDO	PESCE(VTU)	9.10.2017 TO 12.10.2017	BRONZE MEDEL PO 9,10
11	1NH15EE037	ASHISH MUTHANNA A	BASKETBALL(M)	CHRI-SPO-FEST	31.08.2017 TO 05.09.2017	PO 9,10
12	1NH15EE037	ASHISH MUTHANNA A	BASKETBALL(M)	ST.JOHN'S	16.09.2017 TO 19.09.2017	PO 9,10
13	1NH15EE037	ASHISH MUTHANNA A	BASKETBALL(M)	CMRIT(VTU)	27.09.2017 TO 28.09.2017	PO 9,10
14	1NH15EE037	ASHISH MUTHANNA A	BASKETBALL(M)	PESIT	11.10.2017 TO 14.10.2017	PO 9,10

15	1NH15EE037	ASHISH MUTHANNA A	BASKETBALL(M)	FIBA	22.10.2017 TO 28.10.2017	PO 9,10
16	1NH16EE034	MONIDEEPA RANA	BASKET BALL(W)	ST.JOHNS	15.09.2017 TO 18.09.2017	PO 9,10
17	1NH16EE034	MONIDEEPA RANA	BASKET BALL(W)	M.S RAMAIAH	20.09.2017 TO 22.09.2017	RUNNERS PO 9,10
18	1NH16EE034	MONIDEEPA RANA* (BEST PLAYER)	BASKET BALL(W)	PESIT	11.10.2017 TO 14.10.2017	PO 9,10
19	1NH16EE034	MONIDEEPA RANA	BASKET BALL(W)	FIBA	22.10.2017 TO 28.10.2017	PO 9,10
20	1NH14EE077	SUNIL KUMAR A	HOCKEY	CHRI-SPO-FEST	5.09.2017 TO 06.09.2017	PO 9,10
21	1NH16EE711	BIRENDER	FOOTBALL	PESIT	11.10.2017 TO 14.10.2017	PO 9,10
22	1NH16EE711	BIRENDER	FOOTBALL	VTU SELECTION	16.10.2017 TO 17.10.2017	PO 9,10
23	1NH16EE711	BIRENDER	FOOTBALL	RFYS	23.10.2017 TO 24.10.2017	PO 9,10
24	1NH16EE711	BIRENDER	FOOTBALL	RFYS	02.11.2017	PO 9,10
25	1NH16EE711	BIRENDER	FOOTBALL	RFYS	8.11.2017	PO 9,10
26	1NH16EE711	BIRENDER	FOOTBALL	RFYS	13.11.2017	PO 9,10
27	1NH15EE742	SAHIL KUMAR	FOOTBALL	CHRI-SPO-FEST	31.08.2017 TO 03.09.2017	PO 9,10
28	1NH15EE722	MANU C	HANDBALL	CHRI-SPO-FEST	28.08.2017 TO 30.08.2017	PO 9,10
29	1NH15EE722	MANU C	HANDBALL	VTU SELECTION	12.10.2017 TO 13.10.2017	PO 9,10
30	1NH15EE722	MANU C	NETBALL	GAT(VTU)	27.10.2017 TO 28.10.2017	PO 9,10
31	1NH15EE039	NIKHAIK DUBEY	SOFTBALL	AMC	07.10.2017 TO 10.10.2017	RUNNERS PO 9,10
32	1NH15EE039	NIKHAIK DUBEY	SOFTBALL	AMC	15.10.2017 TO 16.10.2017	PO 9,10
33	1NH15EE039	NIKHAIK DUBEY	CRICKET	AIT(VTU)	11.10.2017 TO 12.10.2017	RUNNERS PO 9,10
34	1NH15EE039	NIKHAIK DUBEY	CRICKET	PESIT	11.10.2017 TO 14.10.2017	RUNNERS PO 9,10
35	1NH15EE039	NIKHAIK DUBEY	CRICKET	PESIT	17.10.2017 TO 20.10.2017	PO 9,10



36	1NH15EE039	NIKHAIK DUBEY	CRICKET	PESIT	23.10.2017 TO 25.10.2017	PO 9,10
37	1NH15EE748	SHUBHAM YADAV	SOFTBALL	AIT(VTU)	11.10.2017 TO 12.10.2017	PO 9,10
38	1NH17EE405	GANGADHAR	KABADDI	ST.JOHN	18.09.2017 TO 20.09.2017	PO 9,10
39	1NH17EE405	GANGADHAR	KABADDI	PESIT	11.08.2017 TO 14.10.2017	PO 9,10
40	1NH16EE405	HARASHA S	WRESTLING & JUDO	PESCE(VTU)	09.10.2017 TO 12.10.2017	PO 9,10
41	1NH16EE019	GIRISH N	NETBALL	GAT(VTU)	27.10.2017 TO 28.10.2017	PO 9,10
42	1NH15EE745	SANJAY	NETBALL	GAT(VTU)	27.10.2017 TO 28.10.2017	PO 9,10
43	1NH17EE422	AMOGH	NETBALL	GAT(VTU)	27.10.2017 TO 28.10.2017	PO 9,10
44	1NH17EE413	VIKAS	KABADDI	ST.JOHN	18.09.2017 TO 20.09.2017	PO 9,10
45	1NH17EE413	VIKAS	KABADDI	PESIT	11.08.2017 TO 14.10.2017	PO 9,10
46	1NH16EE039	NITHISH	HANDBALL	CHRI-SPO-FEST	28.08.2017 TO 30.08.2017	PO 9,10
47	1NH16EE405	HARSHA S	JUDO	VTU	09.10.2017 TO 10.10.2017	THIRD PO 9,10

**Table 4.6.3.2:** Participation in inter-institute events by students in CAYm1 (2016-17)

SI NO	USN	NAME OF THE STUDENT	EVENT	PLACE	DATE	OUTCOME
1	1NH13EE035	PAVITHRA.N	INTERNSHIP TRAINING	KPTCL, HOODY, BANGALORE	09.01.2017 TO 31.01.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
2	1NH15EE706	BINAY KUMAR	INTERNSHIP AT SAIL	BOKARO STEEL PLANT	26.06.2017 TO 08.07.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
3	1NH16EE060	KRUTHI YERRAMSETTY	TRAINING IN EMBEDDED& ROBOTICS BASICS AND ADVANCED	HEWLETT PACKARD	26.06.2017 TO 08.07.2017	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1

4	1NH14EE701	AKSHAY KUMAR	INTERNSHIP IN MEASUREMENT ENGINEERING GROUP	GAS TURBINE RESEARCH ESTABLISHMENT , DRDO, BANGALORE	17.08.2017 TO 24.08.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
5	1NH15EE001	AAKARSH SAGAR	INTERNSHIP IN POWER TRANSMISSION AND MAINTENANCE OF SUBSTATION	KPTCL, AVENUE ROAD, BANGALORE	01.07.2017 TO 31-07-2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
6	1NH15EE042	R.ARJUMANTH FARRAJ	INTERNSHIP IN POWER TRANSMISSION AND MAINTENANCE OF SUBSTATION	KPTCL, AVENUE ROAD, BANGALORE	01.07.2017 TO 31-07-2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
7	1NH15EE702	ALLEN ANTONY MATHEW	INTERNSHIP IN POWER TRANSMISSION AND MAINTENANCE OF SUBSTATION	KPTCL, AVENUE ROAD, BANGALORE	01.07.2017 TO 31-07-2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
8	1NH15EE717	ISHA GUPTA	INTERNSHIP IN POWER TRANSMISSION AND MAINTENANCE OF SUBSTATION	KPTCL, AVENUE ROAD, BANGALORE	01.07.2017 TO 31-07-2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
9	1NH15EE007	ANUPAMA B.T	INTERNSHIP IN POWER TRANSMISSION AND MAINTENANCE OF SUBSTATION	KPTCL, AVENUE ROAD, BANGALORE	01.06.2017 TO 30.06.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
10	1NH15EE020	G.VIKAS	INTERNSHIP IN POWER TRANSMISSION AND MAINTENANCE OF SUBSTATION	KPTCL, AVENUE ROAD, BANGALORE	01.06.2017 TO 30.06.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
11	1NH15EE725	NAIMISH KUMAR BAREEK	INTERNSHIP IN POWER TRANSMISSION AND MAINTENANCE OF SUBSTATION	KPTCL, AVENUE ROAD, BANGALORE	01.06.2017 TO 30.06.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
12	1NH15EE014	CHANDAN.N	INTERNSHIP IN POWER TRANSMISSION AND MAINTENANCE OF SUBSTATION	KPTCL, AVENUE ROAD, BANGALORE	01.06.2017 TO 30.06.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
13	1NH15EE027	KAUSTUVMAJU MDAR	INTERNSHIP IN POWER TRANSMISSION AND MAINTENANCE OF SUBSTATION	KPTCL, AVENUE ROAD, BANGALORE	01.06.2017 TO 30.06.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
14	1NH15EE024	HARSHA.T	INTERNSHIP IN MACHINES	BOSCH, BANGALORE	19.7.2017 TO 08.5.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
15	1NH15EE707	CHAITHRA K.P	INTERNSHIP IN FAMILIARISATION	HAL, BANGALORE	17.07.2017 TO 08.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2

16	1NH15EE743	SAI PRIYA LAKSHMIPATHY	INTERNSHIP IN FAMILIARISATION	HAL, BANGALORE	17.07.2017 TO 08.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
17	1NH15EE731	NISHA.D	INTERNSHIP IN FAMILIARISATION/ IMPLANT TRAINING	HAL, BANGALORE	17.07.2017 TO 08.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
18	1NH15EE721	LEKHA.V	INTERNSHIP IN FAMILIARISATION/ IMPLANT TRAINING	HAL, BANGALORE	17.07.2017 TO 08.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
19	1NH15EE718	JEEVAN BOPANNA.P	INTERNSHIP IN SUBSTATION DESIGN &SCADA	KPTCL, AVENUE ROAD, BANGALORE	06.05.2017 TO 20.06.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
20	1NH15EE708	CHARUSHRI.M	INTERNSHIP IN SUBSTATION DESIGN &SCADA	KPTCL, AVENUE ROAD, BANGALORE	06.05.2017 TO 20.06.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
21	1NH15EE752	SUHAS.H.K	INTERNSHIP IN SUBSTATION DESIGN &SCADA	KPTCL, AVENUE ROAD, BANGALORE	06.05.2017 TO 20.06.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
22	1NH15EE704	AHULDAS	INTERNSHIP IN SUBSTATION DESIGN &SCADA	KPTCL, AVENUE ROAD, BANGALORE	06.05.2017 TO 20.06.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
23	1NH14EE718	NIVAS. C	INTERNSHIP IN SUBSTATION DESIGN &SCADA	KPTCL, AVENUE ROAD, BANGALORE	06.05.2017 TO 20.06.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
24	1NH15EE708	CHARUSHRI.M	INTERNSHIP AT HAL	HAL, BANGALORE	19.06.2017 TO 18.07.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
25	1NH15EE730	NIKHIL KUMAR	INTERNSHIP	HALYCON	01.06.2017 30.06.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
26	1NH15EE744	SANDHYA.M	INTERNSHIP AT HAL	HAL,BANGALO RE	19.6.2017 TO 18.7.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
27	1NH15EE005	AKSHAY KUMAR BIRADAR	INTERNSHIP NTPC	NTPC KUDGI	12.07.2017 TO 11.08.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
28	1NH15EE040	PORALLA BHARGAVI	INTERNSHIP IN HAL	HAL ENGINE DIVISION	19.06.2017 TO 18.07.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
29	1NH16EE403	GANESH D	INTERNSHIP ON TECHNICAL SERVICES	MANJUNATH TECHNICAL SERVICE	11.07.2017 TO 25.07.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
30	1NH15EE717	ISHA GUPTA	INTERNSHIP ON DIGITAL MARKETING	MCAFFEINE	07.06.2017 TO 15.07.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
31	1NH14EE005	AGEESH A	TRAINING PROGRAMM ON SOLAR PHOTO VOLTAIC GRID CONNECTED POWER PLANTS	KPCL &NATIONAL TRAINING CENTRE FOR SOLAR TECHNOLOGY, BANGALORE	13.03.2017 TO 18.03.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2

32	1NH14EE005	AGEESH A	CORE JAVA COURSE	REAL TIME SIGNALS TECHNOLOGIES	OCT 2016-DEC 2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
33	1NH14EE018	D. V THARUN	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	27.03.2017 TO 28.03.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
34	1NH13EE739	SANTOSH A T	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	11.05.2017 TO 12.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
35	1NH13EE757	VIKASH KUMAR	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	11.05.2017 TO 12.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
36	1NH14EE706	DIBANSHU KUMAR	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	11.05.2017 TO 12.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
37	1NH14EE007	AKASNHSHA SINHA	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	11.05.2017 TO 12.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
38	1NH14EE720	RAJIV SMAPAT	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	11.05.2017 TO 12.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
39	1NH14EE724	SANTOSH PRABHAKARAN	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	11.05.2017 TO 12.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
40	1NH14EE730	SUSHMITHA DAS	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	11.05.2017 TO 12.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
41	1NH14EE734	VARUN KUMAR	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	11.05.2017 TO 12.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
42	1NH14EE736	VIPIN KUMAR	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	11.05.2017 TO 12.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
43	1NH14EE737	VISHAL KUMAR GOLDY	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	11.05.2017 TO 12.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
44	1NH14EE085	VISHWAMBHAR	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	11.05.2017 TO 12.05.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
45	1NH14EE085	VISHWAMBHAR	BANGALORE ENTREPRENEURSHIP CHALLENGE	RVCE,BGLR	29.02.2016 to 05.04.2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
46	1NH14EE054	POORNASHRI R	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	27.03.2017 TO 28.03.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
47	1NH14EE060	RASHMI KADAM	HOT LINE TRAINING	NATIONAL POWER TRAINING INSTITUTE	27.03.2017 TO 28.03.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1

48	1NH14EE018	D. V THARUN	WORKSHOP IN SOLAR PHOTO VOLTAIC GRID CONNECTED POWER PLANTS	NATIONAL TRAINING CENTRE FOR SOLAR TECHNOLOGY KARNATAKA POWER CORPORATION LIMITED, BANGALORE	13.03.2017 - 18.03.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
49	1NH14EE005	AGEESH A	WORKSHOP IN SOLAR PHOTO VOLTAIC GRID CONNECTED POWER PLANTS	NATIONAL TRAINING CENTRE FOR SOLAR TECHNOLOGY KARNATAKA POWER CORPORATION LIMITED, BANGALORE	13.03.2017 - 18.03.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
50	1NH13EE055	SHIVAM KUMAR TIWARI	PRESENTATION IN ENERGY MANAGEMENT SYSTEM USING IOT MITSUBISHI ELCTRIC CUP 2017	COLLEGE OF ENGINEERING PUNE	31-08-2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
51	1NH15EE027	KAUSTUVMAJU MDAR	PRESENTATION IN ENERGY MANAGEMENT SYSTEM USING IOT MITSUBISHI ELCTRIC CUP 2017	COLLEGE OF ENGINEERING PUNE	31-08-2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
52	1NH15EE702	ALLEN ANTONY MATHEW	PRESENTATION IN ENERGY MANAGEMENT SYSTEM USING IOT MITSUBISHI ELCTRIC CUP 2017	COLLEGE OF ENGINEERING PUNE	31-08-2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
53	1NH13EE732	PRAKASH KUMAR CHOUDHARY	PRESENTATION IN MODERNISATION OF INDIA RAILWAY MITSUBISHI ELCTRIC CUP 2017	COLLEGE OF ENGINEERING PUNE	31-08-2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
54	1NH13EE717	DIPESHBHUSHAN	PRESENTATION IN MODERNISATION OF INDIA RAILWAY MITSUBISHI ELCTRIC CUP 2017	COLLEGE OF ENGINEERING PUNE	31-08-2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
55	1NH13EE051	SANDEEP SHARMA B V	PRESENTATION IN ELECTRIC POWER GENERATION USING TURBINE IN AN INDUSTRIAL CHIMNEY MITSUBISHI ELCTRIC CUP 2017	COLLEGE OF ENGINEERING PUNE	31-08-2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
56	1NH13EE061	SUNIL KUMAR T	PRESENTATION IN ELECTRIC POWER GENERATION USING TURBINE IN AN INDUSTRIAL CHIMNEY MITSUBISHI ELCTRIC CUP 2016	COLLEGE OF ENGINEERING PUNE	31-08-2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
57	1NH13EE066	VENKATESH MURTHY N S	PRESENTATION IN ELECTRIC POWER GENERATION USING TURBINE IN AN INDUSTRIAL CHIMNEY MITSUBISHI ELCTRIC CUP 2016	COLLEGE OF ENGINEERING PUNE	31-08-2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2

58	1NH13EE065	VEERESH S K	PRESENTATION IN ELECTRIC POWER GENERATION USING TURBINE IN AN INDUSTRIAL CHIMNEY MITSUBISHI ELCTRIC CUP 2016	COLLEGE OF ENGINEERING PUNE	31-08-2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
59	1NH14EE419	PADMA.S.M	INDIAN NATIONAL CONGRESS 2016	JNANA JYOTHI AUDITORIUM, BANGALORE	01.12.2016 TO 02.12.2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
60	1NH13EE004	ANKITA DAS	INDIAN NATIONAL CONGRESS 2016	JNANA JYOTHI AUDITORIUM, BANGALORE	01.12.2016 TO 02.12.2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
61	1NH13EE007	ASHWINI J. MENON	INDIAN NATIONAL CONGRESS 2016	JNANA JYOTHI AUDITORIUM, BANGALORE	01.12.2016 TO 02.12.2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
62	1NH13EE008	AVINASH .T.H	INDIAN NATIONAL CONGRESS 2016	JNANA JYOTHI AUDITORIUM, BANGALORE	01.12.2016 TO 02.12.2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
63	1NH14EE051	PRAJWAL KARKI	INDIAN NATIONAL CONGRESS 2016	JNANA JYOTHI AUDITORIUM, BANGALORE	01.12.2016 TO 02.12.2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
64	1NH14EE052	PRANOY BISWAS	INDIAN NATIONAL CONGRESS 2016	JNANA JYOTHI AUDITORIUM, BANGALORE	01.12.2016 TO 02.12.2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
65	1NH14EE706	DIBANSHU KUMAR	INDIAN NATIONAL CONGRESS 2016	JNANA JYOTHI AUDITORIUM, BANGALORE	01.12.2016 TO 02.12.2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
66	1NH14EE716	N.VAMSI	INDIAN NATIONAL CONGRESS 2016	JNANA JYOTHI AUDITORIUM, BANGALORE	01.12.2016 TO 02.12.2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
67	1NH14EE725	SHANKHADEEP GHOSH	INDIAN NATIONAL CONGRESS 2016	JNANA JYOTHI AUDITORIUM, BANGALORE	01.12.2016 TO 02.12.2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
68	1NH15EE053	SUPRIYA R	INDIAN NATIONAL CONGRESS 2016	JNANA JYOTHI AUDITORIUM, BANGALORE	01.12.2016 TO 02.12.2016	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
69	1NH15EE706	BINAY KUMAR	WORKSHOP ON POPULARISATION OF REMOTE SENSING BASED MAPS & GEOSPATIAL INFORMATION	ISRO	11.08.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
70	1NH15EE423	BATTALA UMA MAHESH	MASTER DIPLOMA IN ELECTRICAL CAD	EDUCADD	5.1.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
71	1NH14EE700	SOUMYA KULKARNI	MASTER DIPLOMA IN ELECTRICAL CAD	EDUCADD	5.1.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
72	1NH14EE701	HIMANSHU KUMAR	MASTER DIPLOMA IN ELECTRICAL CAD	EDUCADD	5.1.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
73	1NH14EE703	SHANKHADEEP GHOSH	MASTER DIPLOMA IN ELECTRICAL CAD	EDUCADD	5.1.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1

74	1NH14EE704	PRASHANT BHALLA	MASTER DIPLOMA IN ELECTRICAL CAD	EDUCADD	5.1.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
75	1NH13EE033	PADABI BHUNIYA	MASTER DIPLOMA IN ELECTRICAL CAD	EDUCADD	5.1.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
76	1NH15EE702	ALLEN ANTONY MATHEW	ESOL INTERNATIONAL	CAMBRIDGE ENGLISH	7.16.2018	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
77	1NH15EE723	NIKHIL PRAJAPATI	COURSE ON CORE JAVA TRAINING	INFO CAMPUS	2.06.2017 TO 07.07.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
78	1NH14EE018	D. V THARUN	ELECTRONICS DESIGN CHALLENGE	PESIT-BANGALORE	14.04.2017-15.04.2017	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
<b>Participation in Inter-Institute sports events by students</b>						
1	1NH13EE744	SHUBHAM YADAV	FOOTBALL	ST JOHN'S	16.09.2016 TO 17.09.2016	PO 9,10
2	1NH13EE744	SHUBHAM YADAV	FOOTBALL	PESIT-INFINI	4.10.2016 TO 6.10.2016	RUNNER UP PO 9,10
3	1NH13EE744	SHUBHAM YADAV	FOOTBALL	RVCE	22.10.2016 TO 24.10.2016	RUNNER UP PO 9,10
4	1NH13EE746	SIJO MATHEW VERGHESE	CRICKET	MSRIT	20.09.2016 TO 21.09.2016	PARTICIPATION PO 9,10
5	1NH13EE746	SIJO MATHEW VERGHESE	CRICKET	MSRIT	29.09.2016	PO 9,10
6	1NH13EE746	SIJO MATHEW VERGHESE	CRICKET	PES-U INFINI	2.10.2016 TO 6.10.2016	PO 9,10
7	1NH14EE743	DIKSHYA HANDIQUE	BASKETBALL(W)	CHRI	30.08.2016 TO 31.08.2016	PO 9,10
8	1NH14EE743	DIKSHYA HANDIQUE	BASKETBALL(W)	SPO	01.09.2016 TO 02.09.2016	PO 9,10
9	1NH14EE743	DIKSHYA HANDIQUE	BASKETBALL(W)	BMSIT	26.09.2016 TO 29.09.2016	PO 9,10
10	1NH14EE743	DIKSHYA HANDIQUE	BASKETBALL(W)	PESIT-INFINI	4.10.2016 TO 6.10.2016	PO 9,10
11	1NH14EE743	DIKSHYA HANDIQUE	SWIMMING	VTU IS, GAT	24.08.2016 TO 25.08.2016	PO 9,10
12	1NH13EE749	SRUTHY V KUMAR	THROWBALL(W)	VTU, BZ, CMRIT	8.10.2016 TO 9.10.2016	PO 9,10
13	1NH13EE749	SRUTHY V KUMAR	ATHELETIC MEET	VTU, IZ, DR.TTIT	14.11.2016 TO 18.12.2016	PO 9,10
14	1NH13EE710	ARTHI	THROWBALL(W)	VTU, BZ, CMRIT	8.10.2016 TO 9.10.2016	PO 9,10
15	1NH14EE726	SHREYA GUPTA	THROWBALL(W)	VTU, BZ, CMRIT	8.10.2016 TO 9.10.2016	PO 9,10
16	1NH14EE038	MADIHA AYUB	THROWBALL(W)	VTU, BZ, CMRIT	8.10.2016 TO 9.10.2016	PO 9,10

17	1NH14EE077	SUNIL KUMAR A	HOCKEY	VTU-BCZ, BMSCE	30.08.2016 TO 31.08.2016	PO 9,10
18	1NH14EE077	SUNIL KUMAR A	HOCKEY	ST.JOHN'S	15.09.2016. TO 17.06.2016	PO 9,10
19	1NH14EE005	AGEESH	HOCKEY	VTU-BCZ, BMSCE	30.08.2016 TO 31.08.2016	PO 9,10
20	1NH14EE005	AGEESH	HOCKEY	ST.JOHN'S	15.09.2016. TO 17.06.2016	PO 9,10
21	1NH13EE058	SRAKANTH L	BADMINTON(M&W)	VTU-BCZ, BMSCE	22.09.2016 TO 23.10.2016	PO 9,10
22	1NH13EE058	SRAKANTH L	BADMINTON(M&W)	RVCE	22.10.2016 TO 24.10.2016	PO 9,10
23	1NH13EE748	SHUBHAM	BADMINTON(M&W)	VTU-BCZ, BMSCE	22.09.2016 TO 23.10.2016	PO 9,10
24	1NH13EE713	BHUPINDER SINGH	HANDBALL	CHRI-SPO, 2016	30.08.2016 TO 31.08.2016	PO 9,10
25	1NH13EE713	BHUPINDER SINGH	HANDBALL	CHRI-SPO, 2016	01.09.2016	PO 9,10
26	1NH14EE088	PRAKASH NIUPANT	FOOTBALL(M)	RR DASHIN CUP	02.10.2016 TO 03.10.2016	PO 9,10
27	1NH13EE744	SHUBHAM YADAV	FOOTBALL	JNC	27.02.2017 TO 01.03.2017	RUNNERS PO 9,10
28	1NH13EE744	SHUBHAM YADAV	FOOTBALL	CUFE	01.03.2017 TO 03.03.2017	PO 9,10
29	1NH13EE744	SHUBHAM YADAV	FOOTBALL	BMSCE	03.03.2017 TO 06.03.2017	PO 9,10
30	1NH13EE744	SHUBHAM YADAV	FOOTBALL	MIT	07.03.2017 TO 12.03.2017	PO 9,10
31	1NH13EE744	SHUBHAM YADAV	FOOTBALL	DR.AIT(VTU)	05.04.2017 TO 06.04.2017	PO 9,10
32	1NH14EE088	PRAKASH NEUPANE	FOOTBALL	RR	08.04.2017 TO 10.04.2017	RUNNERS PO 9,10
33	1NH14EE753	RAVIKNATH	BASKETBALL	JAIN	19.2.2017 TO 22.2.2017	PO 9,10
34	1NH14EE753	RAVIKNATH	BASKETBALL	JNC	27.2.2017 TO 1.03.2017	PO 9,10
35	1NH14EE753	RAVIKNATH	BASKETBALL	CUFC	1.03.2017 TO 3.03.2017	PO 9,10
36	1NH14EE753	RAVIKNATH	BASKETBALL	BMSCE	03.03.2017 TO 06.03.2017	PO 9,10
37	1NH14EE753	RAVIKNATH	BASKETBALL	MIT	7.03.2017 TO 12.03.2017	PO 9,10



38	1NH14EE753	RAVIKNATH	BASKETBALL	MATHIKERE	20.03.2017 TO 21.03.2017	PO 9,10
39	1NH14EE077	SUNIL KUMAR A	HOCKEY	ST.JHONS	14.02.2017 TO 16.02.2017	PO 9,10
40	1NH14EE077	SUNIL KUMAR A	HOCKEY	ST.JHONS	15.04.2017	PO 9,10
41	1NH13EE713	BHUPINDER SINGH	HAND BALL	CUFE	2.03.2017 TO 3.03.2017	PO 9,10
42	1NH13EE713	BHUPINDER SINGH	HAND BALL	VET	16.03.2017 TO 17.03.2017	PO 9,10
43	1NH13EE713	BHUPINDER SINGH	HAND BALL	BASAWANAGU DI	23.03.2027	PO 9,10
44	1NH13EE713	BHUPINDER SINGH	HAND BALL	BMSCE(VTU)	27.03.2017 TO 28.03.2017	WINNERS
45	1NH13EE713	BHUPINDER SINGH	HAND BALL	NCET(VTU)	20.04.2017 TO 21.04.2017	RUNNERS
46	1NH13EE744	SHUBHAM YADAV	FOOTBALL	JNC	27.02.2017 TO 01.03.2017	RUNNERS
47	1NH13EE744	SHUBHAM YADAV	FOOTBALL	CUFE	01.03.2017 TO 03.03.2017	PO 9,10
48	1NH13EE744	SHUBHAM YADAV	FOOTBALL	BMSCE	03.03.2017 TO 06.03.2017	PO 9,10
49	1NH13EE744	SHUBHAM YADAV	FOOTBALL	MIT	07.03.2017 TO 12.03.2017	PO 9,10
50	1NH13EE744	SHUBHAM YADAV	FOOTBALL	DR.AIT(VTU)	05.04.2017 TO 06.04.2017	PO 9,10
51	1NH14EE088	PRAKASH NEUPANE	FOOTBALL	RR	08.04.2017 TO 10.04.2017	RUNNERS PO 9,10
52	1NH14EE753	RAVIKNATH	BASKETBALL	JAIN	19.2.2017TO 22.2.2017	PO 9,10
53	1NH14EE753	RAVIKNATH	BASKETBALL	JNC	27.2.2017 TO 1.03.2017	PO 9,10
54	1NH14EE753	RAVIKNATH	BASKETBALL	CUFC	1.03.2017 TO 3.03.2017	PO 9,10
55	1NH14EE753	RAVIKNATH	BASKETBALL	BMSCE	03.03.2017 TO 06.03.2017	PO 9,10
56	1NH14EE753	RAVIKNATH	BASKETBALL	MIT	7.03.2017 TO 12.03.2017	PO 9,10
57	1NH14EE753	RAVIKNATH	BASKETBALL	MATHIKERE	20.03.2017 TO 21.03.2017	PO 9,10
58	1NH14EE077	SUNIL KUMAR A	HOCKEY	ST.JHONS	14.02.2017 TO 16.02.2017	PO 9,10
59	1NH14EE077	SUNIL KUMAR A	HOCKEY	ST.JHONS	15.04.2017	PO 9,10

60	1NH13EE713	BHUPINDER SINGH	HAND BALL	CUFE	2.03.2017 TO 3.03.2017	PO 9,10
61	1NH13EE713	BHUPINDER SINGH	HAND BALL	VET	16.03.2017 TO 17.03.2017	PO 9,10
62	1NH13EE713	BHUPINDER SINGH	HAND BALL	BASAWANAGUDI	23.03.2027	PO 9,10
63	1NH13EE713	BHUPINDER SINGH	HAND BALL	BMSCE(VTU)	27.03.2017 TO 28.03.2017	WINNERS PO 9,10
64	1NH13EE713	BHUPINDER SINGH	HAND BALL	NCET(VTU)	20.04.2017 TO 21.04.2017	RUNNERS PO 9,10
65	1NH13EE728	NISHANTH L	BASKET BALL	RNSIT	27.02.107 TO 29.02.2017	RUNNERS PO 9,10
66	1NH15EE039	NIKHIL DUBEY	CRICKET	UVCE,BANGALORE	2.05.2017 TO 05.05.2017	WINNERS PO 9,10
67	1NH15EE039	NIKHIL DUBEY	CRICKET	PES,UNIVERSITY	11.10.2017 TO 14.10.2017	PO 9,10
68	1NH15EE039	NIKHIL DUBEY	CRICKET	AMC	16.10.2017	RUNNERS PO 9,10
69	1NH17EE405	GANGADHAR MALASETTY	KABADDI	PES,UNIVERSITY	11.10.2017 TO 14.10.2017	PO 9,10
70	1NH13EE728	NISHANTH L	BASKETBALL	RNSIT	27.02.2017 TO 29.02.2017	RUNNERS PO 9,10

**Table 4.6.3.3:** Participation in inter-institute events by students in CAYm2 (2015-16)

SI NO	USN	NAME OF THE STUDENT	EVENT	PLACE	DATE	OUTCOME
1	INH13EE719	JAYA KUMARI	VOCATIONAL TRAINING	HRD,DISHERGARH	12.01.2016 TO 30.01.2016	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
2	1NH14EE001	A N SHARATH	INDUSTRIAL TRAINING	Hindustan Aeronautics Limited (HAL)	04.01.2016 TO 18.01.2016	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
3	INH13EE716	DIPSHIKA SINGH	VOCATIONAL TRAINING	BSNL,JAMNAGAR	20.07.2015 TO 01.08.2015	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
4	1NH13EE732	PRAKSH KUMAR CHOUDARY	VOCATIONAL TRAINING	ALL INDIA RADIO,PATNA	09.07.2015 TO 29.07.2015	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
5	1NH13EE748	RUPAK KUMAR SHARMA	VOCATIONAL TRAINING	ALL INDIA RADIO,PATNA	09.07.2015 TO 29.07.2015	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2
6	INH13EE719	JAYA KUMARI	VOCATIONAL TRAINING	HRDC,BURNPUR	06.07.2015 TO 28.07.2015	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1,2

7	1NH13EE040	RAHUL KUMAR	VOCATIONAL TRAINING IN BASIC TECHNIQUES OF RADIO PRODUCTION AND TRANSMISSION	ALL INDIA RADIO,PATNA	09.07.2015 TO 29.07.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
8	1NH12EE033	POOJA GHOSH	INTERNSHIP AT AIRCRAFT DIVISION	HAL,BANGALORE	01.01.2015 TO 31.01.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
9	1NH12EE009	ANKITANIKET	INTERNSHIP TRAINING	ShavakNanavati Technical Institute, TATA Steel	06.01.2015 TO 27.01.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
10	1NH12EE020	DHIRAJ PRABHAKAR	INTERNSHIP TRAINING	BASF India Limited	01.01.2015 TO 31.01.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1,2
11	1NH12EE042	ROSHNI Z SHOLAPURWALA	ENGINEX- THE TCS ENGINEERING DESIGN INNOVATION CONTEST	TCS, SIRUSERI	19.08.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
12	1NH12EE027	MEGHA SHREE R	INDIAN NATIONAL CONGRESS 2015	NIMHANS CONVENTION CENTRE BANGALORE	29.07.2015 TO 30.07.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
13	1NH12EE058	SYED ABRAR	INDIAN NATIONAL CONGRESS 2015	NIMHANS CONVENTION CENTRE BANGALORE	29.07.2015 TO 30.07.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
14	1NH12EE703	ALOK KUMAR	INDIAN NATIONAL CONGRESS 2015	NIMHANS CONVENTION CENTRE BANGALORE	29.07.2015 TO 30.07.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
15	1NH12EE735	PRADEEP CHOUDHARY	INDIAN NATIONAL CONGRESS 2015	NIMHANS CONVENTION CENTRE BANGALORE	29.07.2015 TO 30.07.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
16	1NH12EE754	SHIVAJI AGASAR	INDIAN NATIONAL CONGRESS 2015	NIMHANS CONVENTION CENTRE BANGALORE	29.07.2015 TO 30.07.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
17	1NH13EE010	CHANDANA. C.S	INDIAN NATIONAL CONGRESS 2015	NIMHANS CONVENTION CENTRE BANGALORE	29.07.2015 TO 30.07.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
18	1NH13EE014	HASIL PAUDYAL	INDIAN NATIONAL CONGRESS 2015	NIMHANS CONVENTION CENTRE BANGALORE	29.07.2015 TO 30.07.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
19	1NH13EE049	SAHITHI.N	INDIAN NATIONAL CONGRESS 2015	NIMHANS CONVENTION CENTRE BANGALORE	29.07.2015 TO 30.07.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1
20	1NH13EE066	VENKATESH MURTHY N.S	INDIAN NATIONAL CONGRESS 2015	NIMHANS CONVENTION CENTRE BANGALORE	29.07.2015 TO 30.07.2015	POs:1,2,3,4,5,6,7 ,8,9,10,11,12 PSOs:1

21	INH13EE714	CHIRADEEP B	INDIAN NATIONAL CONGRESS 2015	NIMHANS CONVENTION CENTRE BANGALORE	29.07.2015 TO 30.07.2015	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
22	1NH14EE044	NAVYA.M	SEMINAR	THE GATE ACADEMY	12.10.2016	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
23	1NH13EE055	SHIVAM KUMAR TIWARI	THE TECH WORD	EAST POINT ACADEMY	07.07.2016	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
24	INH13EE717	DIPESH BHUSHAN	INDUSTRIAL TRAINING	BSNL,KASAUJI	11.01.2016 TO 16.01.2016	POs:1,2,3,4,5,6,7,8,9,10,11,12 PSOs:1
25	1NH13EE044	KOTA REDDY LAKSHMI	THE CROSS FIRE	ISKCON BANGALORE	27.09.2017	PO 9,10
26	1NH13EE044	KOTA REDDY LAKSHMI	DRAMATICS	ISKCON BANGALORE	8.08.2015 TO 09.08.2015	PO 9,10
<b>Participation in Inter-Institute sports events by students</b>						
1	1NH12EE710	AYUSH TIWARI	HANDBALL	VTU	14.03.2016 TO 15.03.2016	WINNERS PO 9,10
2	1NH12EE744	SANJEEV KUMAR SINGH	HANDBALL	VTU	14.03.2016 TO 15.03.2016	WINNERS
3	1NH13EE744	SHUBHAM YADAV	FOOTBALL	RNSIT	27.02.2016 TO 28.02.2016	PO 9,10
4	1NH13EE745	SHUBHAM YADAV	FOOTBALL	CUFE	25.02.2016 TO 27.02.2016	PO 9,10
5	1NH13EE746	SHUBHAM YADAV	FOOTBALL	UVCE	21.03.2016 TO 23.03.2016	PO 9,10
6	1NH13EE747	SHUBHAM YADAV	FOOTBALL	REVA ITM	30.03.2016 TO 31.03.2016	PO 9,10
7	1NH13EE748	SHUBHAM YADAV	FOOTBALL	VIU BCZ	11.04.2016 TO 12.04.2016	PO 9,10
8	1NH13EE045	RHYTHM BHARDWAJ	FOOTBALL	REVA ITM	30.03.2016 TO 31.03.2016	PO 9,10
9	1NH13EE045	RHYTHM BHARDWAJ	FOOTBALL	VIU BCZ	11.04.2016 TO 12.04.2016	PO 9,10
10	1NH13EE731	PRABHAT	HOCKEY	ST.JHONS	3.02.2016 TO 5.02.2016	PO 9,10
11	1NH14EE077	SUNIL KUMAR A	HOCKEY	ST.JHONS	3.02.2016 TO 5.02.2016	PO 9,10
12	1NH14EE077	SUNIL KUMAR A	HOCKEY	CIT,COORG	24.02.2016 TO 26.02.2016	PO 9,10
13	1NH12EE041	ROHITH P	HOCKEY	ST.JHONS	03.02.2016 TO 05.02.2016	PO 9,10
14	1NH12EE041	ROHITH P	HOCKEY	CIT,COORG	24.02.2016 TO 26.02.2016	PO 9,10

15	1NH14EE743	DIKSHA HANDIQUE	BASKETBALL	MSRIT	03.10.2015 TO 06.10.2015	FIRST RUNNER UP PO 9,10
16	1NH14EE743	DIKSHA HANDIQUE	BASKETBALL	JAIN U	13.02.2016 TO 17.02.2016	PO 9,10
17	1NH14EE743	DIKSHA HANDIQUE	BASKETBALL	RNSIT	27.02.2016 TO 29.02.2016	PO 9,10
18	1NH14EE743	DIKSHA HANDIQUE	BASKETBALL	REVA ITM	29.03.2016 TO 31.03.2016	PO 9,10
19	1NH14EE743	DIKSHA HANDIQUE	BASKETBALL	NEW HORIZON	18.04.2016 TO 21.04.2016	PO 9,10
20	1NH12EE748	SAURAV	CRICKET	VTU BLORE CZ	24.02.2016 TO 26.02.2016	PO 9,10
21	1NH14EE088	PRAKASH NEUPANE	FOOTBALL	NEW HORIZON	20.04.2016 TO 22.04.2016	WINNER PO 9,10
22	1NH13EE043	RAVI RAJAN KARN	FOOTBALL	NEW HORIZON	20.04.2016 TO 22.04.2016	WINNER PO 9,10
23	1NH12EE057	SURAJ SURESH	BASKET BALL	JAIN U	13.02.2016 TO 17.02.2016	PO 9,10
24	1NH12EE057	SURAJ SURESH	BASKET BALL	CUFE	25.02.2016 TO 27.02.2016	PO 9,10
25	1NH12EE057	SURAJ SURESH	BASKET BALL	MSRIT	3.10.2015 TO 6.10.2015	RUNNERS PO 9,10
26	1NH12EE057	SURAJ SURESH	BASKET BALL	RNSIT	27.02.2016 TO 29.02.2016	RUNNERS PO 9,10
27	1NH12EE057	SURAJ SURESH	BASKET BALL	REVA ITM	29.03.2016 TO 31.03.2016	PO 9,10
28	1NH12EE057	SURAJ SURESH	BASKET BALL	NEW HORIZON	18.04.2016 TO 21.04.2016	RUNNERS PO 9,10
29	1NH14EE753	RAVIKANTH YADAV	BASKET BALL	JAIN U	13.02.2016 TO 17.02.2016	PO 9,10
30	1NH14EE753	RAVIKANTH YADAV	BASKET BALL	CUFE	25.02.2016 TO 27.02.2016	PO 9,10
31	1NH14EE753	RAVIKANTH YADAV	BASKET BALL	RNSIT	27.02.2016 TO 29.02.2016	RUNNERS PO 9,10
32	1NH14EE753	RAVIKANTH YADAV	BASKET BALL	REVA ITM	29.03.2016 TO 31.03.2016	PO 9,10
33	1NH14EE753	RAVIKANTH YADAV	BASKET BALL	NEW HORIZON	18.04.2016 TO 21.04.2016	RUNNERS PO 9,10
34	1NH12EE735	PRADEEP CHOUDARY	HAND BALL	VTU BLORE CZ	14.03.2016 TO 15.03.2016	WINNERS PO 9,10

35	1NH12EE735	PRADEEP CHOUDARY	HAND BALL	VTUIZ	17.03.2016 TO 19.03.2016	PO 9,10
36	1NH12EE710	AYUSH TIWARI	HAND BALL	CHRIST UNIVERSITY	14.09.2015 TO 18.09.2015	WINNERS PO 9,10
37	1NH12EE710	AYUSH TIWARI	HAND BALL	VTU BLORE CZ	14.03.2016 TO 15.03.2016	WINNERS PO 9,10
38	1NH12EE710	AYUSH TIWARI	HAND BALL	VTU IZ	17.03.2016 TO 19.03.2016	PO 9,10
39	1NH12EE44	SANJEEV KUMAR	HAND BALL	VTU BLORE CZ	14.03.2016 TO 15.03.2016	WINNERS PO 9,10
40	1NH12EE44	SANJEEV KUMAR	HAND BALL	VTU IZ	17.03.2016 TO 19.03.2016	PO 9,10
41	1NH13EE713	BHUPINDER SINGH	HAND BALL	VTU BLORE CZ	14.03.2016 TO 15.03.2016	WINNERS PO 9,10
42	1NH13EE714	BHUPINDER SINGH	HAND BALL	VTU IZ	17.03.2016 TO 19.03.2016	PO 9,10
43	1NH15EE037	ASHISH MUTTHANNA	BASKET BALL	JAIN U	11.05.2016 TO 13.05.2016	WINNER PO 9,10

Table 4.6.3.4 Patent Filed by Students

SI NO	USN	NAME OF THE STUDENT	TITLE OF PATENT	APPLICATION NO. AND DATE
1	1NH14EE711	INDRANIL DAS	A SENSOR IGNITION SYSTEM FOR TWO WHEELERS	E-2/99/2017-KOL AND APPLICATION NO. 201731012865 DT.11.04.2017
2	1NH13EE717	DIPESH BHUSHAN	ELECTRONIC VARIABLE SPEED GOVERNOR FOR TWO WHEELER	E-2/1433/2017-CHE AND APPLICATION NO. 201741018096 DT.23.05.2017
3	1NH13EE044	KOTA REDDY LAKSHMI	A METHOD TO ALERT THE USER IN CASE OF A MOBILE THEFT/UNAUTHORIZED USE	E-2/1412/2017-CHE AND APPLICATION NO. 201741018075 DT.23.05.2017
4	1NH12EE722	KARTHIK. M	DESIGN AND INSTALLATION OF ECONOMICAL PICO-HYDRO ELECTRIFICATION USING GREEN ENERGY	E-2/1451/2017-CHE AND APPLICATION NO. 2017410121383 DT.19.06.2017
5	1NH12EE035	PRASANNA. R	GREEN ENERGY-HYBRID RENEWABLE POWER GENERATION (SOLAR-WIND) FOR IRRIGATION	E-2/1451/2017-CHE AND APPLICATION NO. 2017410121382 DT.19.06.2017
6	1NH14EE711	INDRANIL DAS	A POWER BANK APPARATUS	E-2/225/2017-KOL AND APPLICATION NO. 201731033885 DT.25.09.2017
7	1NH14EE711	INDRANIL DAS	SENSORIZED TWO USB PORT SOLAR CHARGING SYSTEM	E-2/224/2017-KOL AND APPLICATION NO. 201731033884 DT.25.09.2017

## CRITERION 5

## FACULTY INFORMATION AND CONTRIBUTIONS

200

## 5. FACULTY INFORMATION AND CONTRIBUTIONS

(200)

Table 5.1: List of faculty members for CAY (2017-2018)

Name of the Faculty Member	Qualification			Association with the Institution	Designation (all the designations since Joining the institution)	Date of Joining the Institution	Department	Specialization	Academic Research			Sponsored Research (Funded Research)	Consultancy & Product Development
	Degree	University	Year of Graduation						Faculty Receiving Ph.D during the Assessment Years	Ph.D Guidance	Research Paper Publications		
Dr. Elumalai R	PhD	Vinayaka Mission University	2012	YES	Prof & HOD	11-07-2016	EEE	Embedded System and Cryptography	NA	03	2	1	1
	M.E	Bangalore University	1996										
	B.E	Bangalore University	1993										
Dr. Mahesh K	PhD	Jain University	2015	YES	Professor	18-05-2004	EEE	Power Systems and Renewable Energy	NA	1	2	1	-
	M.E	Bangalore University	2004										
	B.E	Bangalore University	2000										
Dr. Raju Garudachar	PhD	University of Kansas	1989	YES	Professor	21-07-2013	EEE	Electronic, Solid State microwave devices	NA	0	1	-	1
	M.E	BITS(Pilani)	1972										
	B.E	Bangalore University	1970										
Dr. K.C.R. Nisha	PhD	Sathyabama University	2015	YES	Associate Professor	02-12-2009	EEE	Power Electronics	NA	3	1	-	-
	M.E	Sathyabama University	2004										
	B.E	Bharathidasan University	2002										
Dr. Sam Harison	PhD	Anna University	2014	YES	Associate Professor	21-07-2014	EEE	Power Systems	NA	0	1	1	-
	M.E	Annamalai University	1999										
	B.E	Bangalore University	1997										



Dr. Sujitha S	PhD	Anna University	2016	YES	Associate Professor	25-07-2016	EEE	Special Electrical Machines, Renewable Energy, Soft Computing and Instrumentation	NA	0	3	-	1
	M.E	VMRF University	2007										
	B.E	Avinashilingam University	2005										
Dr. Haripriya	PhD	MSU	2013	YES	Associate Professor	26-07-2017	EEE	Embedded Systems Technologies	NA	0	1	1	-
	M.E	Anna University	2008										
	B.E	Anna University	2000										
Dr. Sivasubramanian R	PhD	Annamalai University	2016	YES	Associate Professor	01-08-2012	EEE	Power Electronics and Drives	NA	0	1	-	-
	M.Tech	Karunya University	2006										
	BE	Bharathiar University	2001										
Dr. Anbarasan	PhD	NIT, Tiruchirappalli	2015	YES	Associate Professor	26-07-2017	EEE	Process control and Instrumentation	NA	0	1	-	-
	M.E	Annamalai University	2005										
	B.E	Madras University	2003										
Mr.Inbasakaran S	PhD	VTU	Pursuing	YES	Assistant Professor	25-07-2011	EEE	Power Electronics and Drives	No	0	1	-	-
	M.E	Anna University	2004										
	B.E	Madurai Kamaraj University	2001										
Ms.M Karthika	PhD	VTU	Pursuing	YES	Assistant Professor	25-07-2012	EEE	Power Electronics and Drives	No	0	1	-	-
	M.Tech	Anna University	2012										
	BE	Madurai Kamaraj University	2002										
Mr.Santhosh S	M.Tech	VTU	2012	YES	Assistant Professor	24-07-2013	EEE	Power Systems	No	0	1	-	-
	BE	VTU	2010										
Mr.Mohan B S	M.Tech	VTU	2014	YES	Assistant Professor	21-07-2014	EEE	Power Systems	No	0	1		
	BE	VTU	2008										

Ms.Anitha A	PhD	VTU	Pursuing	YES	Assistant Professor	04-02-2015	EEE	Power Electronics and Drives	No	0	2	-	-
	M.E	Anna University	2006										
	B.E	Bharathiyar University	2004										
Mr.Satishkumar D	M.E	Anna University	2006	YES	Assistant Professor	20-07-2015	EEE	Power Electronics	No	0	2	-	-
	B.Tech	JNTU	2003										
Mr. Joshua Daniel Raj	PhD	VTU	Pursuing	YES	Assistant Professor	1-8-2016	EEE	VLSI Design	No	0	1	-	-
	M.Tech	Sathyabama University	2006										
	BE	Bharathiyar University	2002										
Mr. Vinod Kumar S	M.Tech	Anna University	2015	YES	Assistant Professor	23-01-2017	EEE	Power System Engineering	No	0	2	-	-
	BE	Anna University	2009										
Ms. Shravanthi	M.Tech	Bangalore University	2012	YES	Assistant Professor	15-07-2013	EEE	Power Systems	No	0	-	-	-
	BE	VTU	2009										
Mr.Lithesh J	M.Tech	Amrita University	2012	YES	Assistant Professor	25-07-2012	EEE	Power Electronics	No	0	1	-	-
	BE	Amrita University	2009										
Ms. Kavitha Chenna reddy	M.Tech	JNTU - Kakinada	2012	YES	Assistant Professor	25-07-2012	EEE	High Voltage	No	0	2	-	-
	BE	Nagarjuna University	2004										
Ms. Roopa C	M.Tech	VTU	2014	YES	Assistant Professor	21-07-2014	EEE	Computer Application in Industrial Drives	No	0	3	-	-
	BE	Kuvempu University	2009										
Ms. Latha L R	M.Tech	VTU	2013	YES	Assistant Professor	21-07-2014	EEE	Computer Application in Industrial Drives	No	0	1	-	-
	BE	VTU	2011										
Ms. Rashmi N	M.Tech	VTU	2013	YES	Assistant Professor	21-07-2014	EEE	Computer Application in Industrial Drives	No	0		-	-
	BE	VTU	2010										

Ms. Priyanka S Kole	M.Tech	VTU	2016	YES	Assistant Professor	25-07-2016	EEE	Power Systems	No	0	1	-	-
	BE	VTU	2014										
Ms. Deepa V Bolanavar	M.Tech	VTU	2014	YES	Assistant Professor	25-07-2016	EEE	VLSI and Embedded Systems	No	0	3	-	-
	BE	VTU	2010										
Ms. Suryaprabha	PhD	VTU	Pursuing	YES	Assistant Professor	24-01-2011	EEE	Energy Systems	No	0	-	-	-
	M.Tech	IIT Bombay	2008										
	BE	Upkal University	2001										
Ms. Pritma Gakhar	M.Tech	VTU	2009	YES	Assistant Professor	24-07-2013	EEE	CAID	No	0	-	-	-
	BE	Maharshi Dayanand University	2002										
Mr. Arun kumar M	PhD	VTU	Pursing	YES	Assistant Professor	26-07-2017	EEE	Power And Energy Systems	No	0	1	-	-
	M.E	Bangalore University	2004										
	BE	Bangalore University	2000										
Ms. Ankita Srivastava	M.Tech	VTU	2013	YES	Assistant Professor	17-07-2013	EEE	Power Electronics	No	0	-	-	-
	BE	Punjab University	2008										

Table 5.2: List of faculty members for CAY m1 (2016-2017)

Name of the Faculty Member	Qualification			Association with the Institution	Designation (all the designations since joining the institution)	Date of Joining the Institution	Department	Specialization	Academic Research			Sponsored Research (Funded Research)	Consultancy & Product Development
	Degree	University	Year of Graduation						Faculty Receiving Ph.D during the Assessment Years	Ph.D Guidance	Research Paper Publications		
Dr. Elumalai R	PhD	Vinayaka Mission University	2012	YES	Prof & HOD	11-07-2016	EEE	Embedded System and Cryptography	NA	03	1	-	1
	M.E	Bangalore University	1996										
	B.E	Bangalore University	1993										
Dr. Mahesh K	PhD	Jain University	2015	YES	Professor	18-05-2004	EEE	Power Systems and Renewable Energy	NA	0	1	-	1
	M.E	Bangalore University	2004										
	B.E	Bangalore University	2000										
Dr.Sainarayanan	PhD	University Malaysia	2002	NO	Professor	01-03-2007	EEE	Control systems, Image Processing	NA	0	1	1	-
	M.E	Bharathiyar University	2000										
	B.E	Annamalai University	1998										
Dr. Raju Garudachar	PhD	University of Kansas	1989	YES	Professor	21-07-2013	EEE	Electronic, Solid State microwave devices	NA	0	1	-	-
	M.E	BITS(Pilani)	1972										
	B.E	Bangalore University	1970										
Dr. K.C.R. Nisha	PhD	Sathyabama University	2015	YES	Associate Professor	02-12-2009	EEE	Power Electronics	NA	3	1	2	2
	M.E	Sathyabama University	2004										
	B.E	Bharathidasan University	2002										
Dr. Sam Harison	PhD	Anna University	2014	YES	Associate Professor	21-07-2014	EEE	Power Systems	NA	0	1	-	1
	M.E	Annamalai University	1999										
	B.E	Bangalore University	1997										

Dr. Sujitha S	PhD	Anna University	2016	YES	Associate Professor	25-07-2016	EEE	Special Electrical Machines, Renewable Energy, Soft Computing and Instrumentation	Yes	0	2	-	1
	M.E	VMRF University	2007										
	B.E	Avinashilingam University	2005										
Dr.B.Jayachandran	PhD	Bharath University	2011	NO	Associate Professor	15-02-2014	EEE	VLSI	NA	0	1	-	-
	M.E	SRM University	2005										
	B.E	Madras University	2002										
Dr. Sivasubramanian R	PhD	Annamalai University	2016	YES	Associate Professor	01-08-2012	EEE	Power Electronics and Drives	NA	0	1	-	-
	M.Tech	Karunya University	2006										
	BE	Bharathiar University	2001										
Dr.S.Karthikeyan	PhD	Mewar University	2013	NO	Associate Professor	15-07-2013	EEE	Power Electronics and Drives	NA	0	1	1	-
	M.Tech	Annamalai University	2005										
	BE	Madurai Kamaraj University	1994										
Mr. Inbasakaran S	PhD	VTU	Pursuing	YES	Assistant Professor	25-07-2011	EEE	Power Electronics and Drives	No	0	1	-	-
	M.E	Anna University	2004										
	B.E	Madurai Kamaraj University	2001										
Ms.Ela Dongre	M.E	Rajiv Gandhi Proudyogiki Vishwavidyalaya	2009	NO	Assistant Professor	25-07-2012	EEE	Digital Techniques and Instrumentation	No	0	-	-	-
	B.E	SATI Vidisha Govt. College	2004										
Mr.Duney D.Sam	M.E	Anna University	2011	NO	Assistant Professor	25-07-2012	EEE	Power Electronics and Drives	No	0	1	-	-
	B.E	Anna University	2006										

Ms. M Karthika	PhD	VTU	Pursuing	YES	Assistant Professor	25-07-2012	EEE	Power Electronics and Drives	No	0	1	-	-
	M.Tech	Anna University	2012										
	BE	Madurai Kamaraj University	2002										
Ms. Ankita Srivastava	M.Tech	VTU	2013	YES	Assistant Professor	17-07-2013	EEE	Power Electronics	No	0	-	-	-
	BE	Punjab University	2008										
Ms. Pritma Gakhar	M.Tech	VTU	2009	YES	Assistant Professor	24-07-2013	EEE	Computer Application in Industrial Drives	No	0	-	-	-
	BE	Maharshi Dayanand University	2002										
Mr. Santhosh S	M.Tech	VTU	2012	YES	Assistant Professor	24-07-2013	EEE	Power System	No	0	2	-	-
	BE	VTU	2010										
Mr. Mohan B.S	M.Tech	VTU	2014	YES	Assistant Professor	21-07-2014	EEE	Power System	No	0	1	-	-
	BE	VTU	2008										
Ms. Anitha A	PhD	VTU	Pursuing	YES	Assistant Professor	04-02-2015	EEE	Power Electronics and Drives	No	0	-	-	-
	M.E	Anna University	2006										
	B.E	Bharathiyar University	2004										
Mr. Satishkumar D	M.E	Anna University	2006	YES	Assistant Professor	20-07-2015	EEE	Power Electronics	No	0	-	-	-
	B.Tech	JNTU	2003										
Mr. Joshua Daniel Raj	PhD	VTU	Pursuing	YES	Assistant Professor	1-8-2016	EEE	VLSI Design	No	0	1	-	-
	M.Tech	Sathyabama University	2006										
	BE	Bharathiyar University	2002										
Ms. Suryaprabha	PhD	VTU	Pursuing	YES	Assistant Professor	24-01-2011	EEE	Energy Systems	No	0	-	-	-
	M.Tech	IIT Bombay	2008										
	BE	Upkal University	2001										

Mr. Sunil S.K	M.Tech	VTU	2014	YES	Assistant Professor	25-07-2016	EEE	Power System	No	0	2	-	-
	BE	VTU	2009										
Mr. Vinod Kumar S	M.Tech	Anna University	2015	YES	Assistant Professor	23-01-2017	EEE	Power System Engineering	No	0	-	-	-
	BE	Anna University	2009										
Mr. Lithesh J	M.Tech	Amrita University	2012	YES	Assistant Professor	25-07-2012	EEE	Power Electronics	No	0	1	-	-
	BE	Amrita University	2009										
Ms. Kavitha Chenna reddy	M.Tech	JNTU - Kakinada	2012	YES	Assistant Professor	25-07-2012	EEE	High Voltage	No	0	1	-	-
	BE	Nagarjuna University	2004										
Ms. Roopa C	M.Tech	VTU	2014	YES	Assistant Professor	21-07-2014	EEE	Computer Application in Industrial Drives	No	0	-	-	-
	BE	Kuvempu University	2009										
Ms. Latha L R	M.Tech	VTU	2013	YES	Assistant Professor	21-07-2014	EEE	Computer Application in Industrial Drives	No	0	2	-	-
	BE	VTU	2011										
Ms. Rashmi N	M.Tech	VTU	2013	YES	Assistant Professor	21-07-2014	EEE	Computer Application in Industrial Drives	No	0	-	-	-
	BE	VTU	2010										

Table 5.3: List of faculty members for CAY m2 (2015-2016)

Name of the Faculty Member	Qualification			Association with the Institution	Designation (all the designations since joining the institution)	Date of Joining the Institution	Department	Specialization	Academic Research			Sponsored Research (Funded Research)	Consultancy & Product Development
	Degree (Highest)	University	Year of Graduation						Faculty Receiving Ph.D during the Assessment Years	Ph.D Guidance	Research Paper Publications		
Dr.Sainarayanan	PhD	University Malaysia	2002	NO	Professor	01-03-2007	EEE	Control systems, Image Processing	NA	0	-	-	1
	M.E	Bharathiyar University	2000										
	B.E	Annamalai University	1998										
Dr. Raju Garudachar	PhD	University of Kansas	1989	YES	Professor	21-07-2013	EEE	Electronic, Solid State microwave devices	NA	0	-	-	-
	M.E	BITS(Pilani)	1972										
	B.E	Bangalore University	1970										
Dr.Ramanathan	PhD	JIT University	2012	NO	Professor	01-02-2015	EEE	Applied Electronics	NA	0	-	-	-
	M.Sc(Engg)	Madras University	1975										
	B.E	Madras University	1973										
Dr. Mahesh K	PhD	Jain University	2015	YES	Professor	18-05-2004	EEE	Power Systems and Renewable Energy	NA	0	2	-	1
	M.E	Bangalore University	2004										
	B.E	Bangalore University	2000										
Dr. K.C.R. Nisha	PhD	Sathyabama University	2015	YES	Associate Professor	02-12-2009	EEE	Power Electronics	NA	0	9	1	-
	M.E	Sathyabama University	2004										
	B.E	Bharathidasan University	2002										
Dr. Sam Harison	PhD	Anna University	2014	YES	Associate Professor	21-07-2014	EEE	Power Systems	NA	0	-	-	-
	M.E	Annamalai University	1999										
	B.E	Bangalore University	1997										



Dr.B.Jayachandran	PhD	Bharath University	2011	NO	Associate Professor	15-02-2014	EEE	VLSI	NA	0	-	1	-
	M.E	SRM University	2005										
	B.E	Madras University	2002										
Dr. S.Karthikeyan	PhD	Mewar University	2013	NO	Associate Professor	15-07-2013	EEE	Power Electronics and Drives	NA	0	-	-	-
	M.Tech	Annamalai University	2005										
	BE	Madurai Kamaraj University	1994										
Mr. Inbasakaran S	M.E	Anna University	2004	YES	Assistant Professor	25-07-2011	EEE	Power Electronics and Drives	No	0	-	-	-
	B.E	Madurai Kamaraj University	2001										
Ms.Ela Dongre	M.E	Rajiv Gandhi Proudyogiki Vishwavidyalaya	2009	NO	Assistant Professor	25-07-2012	EEE	Digital Techniques and Instrumentation	No	0	-	-	-
	B.E	SATI Vidisha Govt. College	2004										
Mr.Duney D.Sam	M.E	Anna University	2011	NO	Assistant Professor	25-07-2012	EEE	Power Electronics and Drives	No	0	1	-	-
	B.E	Anna University	2006										
Ms. M Karthika	M.E	Anna University	2012	YES	Assistant Professor	25-07-2012	EEE	Power Electronics and Drives	No	0	1	-	-
	BE	Madurai Kamaraj University	2002										
Ms. Pritma Gakhar	M.Tech	VTU	2009	YES	Assistant Professor	24-07-2013	EEE	Computer Application in Industrial Drives	No	0	1	-	-
	BE	Maharshi Dayanand University	2002										
Mr. Santhosh S	M.Tech	VTU	2012	YES	Assistant Professor	24-07-2013	EEE	Power System	No	0	-	-	-
	BE	VTU	2010										

Mr. Mohan B S	M.Tech	VTU	2014	YES	Assistant Professor	21-07-2014		Power System	No	0	3	-	-
	BE	VTU	2008										
Ms. Anitha A	M.E	Anna University	2006	YES	Assistant Professor	04-02-2015	EEE	Power Electronics and Drives	No	0	1	-	-
	B.E	Bharathiyar University	2004										
Ms.Vidyalakshmi C S	M.E	VTU	2012	NO	Assistant Professor	25-07-2012	EEE	Power Electronics	No	0	-	-	-
	B.E	VTU	2004										
Ms. Ankita Srivastava	M.Tech	VTU	2013	YES	Assistant Professor	17-07-2013	EEE	Power Electronics	No	0	1	-	-
	BE	Punjab University	2008										
Mr. Lithesh J	M.Tech	Amrita University	2012	YES	Assistant Professor	25-07-2012	EEE	Power Electronics	No	0	-	-	-
	BE	Amrita University	2009										
Ms. Kavitha Chenna reddy	M.Tech	JNTU - Kakinada	2012	YES	Assistant Professor	25-07-2012	EEE	High Voltage	No	0	1	-	-
	BE	Nagarjuna University	2004										
Ms. Roopa C	M.Tech	VTU	2014	YES	Assistant Professor	21-07-2014	EEE	Computer Application in Industrial Drives	No	0	2	-	-
	BE	Kuvempu University	2009										
Ms. Latha L R	M.Tech	VTU	2013	YES	Assistant Professor	21-07-2014	EEE	Computer Application in Industrial Drives	No	0	1	-	-
	BE	VTU	2011										
Ms. Rashmi N	M.Tech	VTU	2013	YES	Assistant Professor	21-07-2014	EEE	Computer Application in Industrial Drives	No	0	-	-	-
	BE	VTU	2010										
Ms. Suryaprabha	M.Tech	IIT Bombay	2008	YES	Assistant Professor	24-01-2011	EEE	Energy Systems	No	0	-	-	-
	BE	Upkal University	2001										
Ms.Shruthi P.V	M.Tech	VTU	2013	NO	Assistant Professor	18-09-2013	EEE	Power Electronics	No	0	-	-	-
	BE	VTU	2009										

<b>Ms.Jyothi D</b>	M.Tech	VTU	2009	NO	Assistant Professor	21-07-2012	EEE	VLSI and Embedded systems	No	0	1	-	-
	BE	VTU	2004										
<b>Mr. Sivasubramanian R</b>	M.E	M.Tech	Karunya University	YES	Assistant Professor	01-08-2012	EEE	Power Electronics and Drives	NA	0	-	-	-
	BE	BE	Bharathiar University										
<b>Ms. Shrvanthi</b>	M.Tech	Bangalore University	2012	YES	Assistant Professor	15-07-2013	EEE	Power System	No	0	-	-	-
	BE	VTU	2009										
<b>Ms.Poorva Mallikarjun Huddar</b>	M.Tech	Jain University	2013	NO	Assistant Professor	26-07-2010	EEE	Renewable Energy	No	0	-	-	-
	BE	VTU	2009										

**5.1. Student-Faculty Ratio (SFR)****(20)***(To be calculated at Department Level)*

No. of UG Programs in the Department (n): 1  
 No. of PG Programs in the Department (m): NIL  
 No. of Students in UG 2<sup>nd</sup> Year= **u1**  
 No. of Students in UG 3<sup>rd</sup> Year= **u2**  
 No. of Students in UG 4<sup>th</sup> Year= **u3**  
 No. of Students in PG 1<sup>st</sup> Year= **p1**  
 No. of Students in PG 2<sup>nd</sup> Year= **p2**

**No. of Students = Sanctioned Intake + Actual admitted lateral entry students***(The above data to be provided considering all the UG and PG programs of the department)*

S=Number of Students in the Department = UG1 + UG2 +.. +UGn + PG1 + ...PGn

F = Total Number of Faculty Members in the Department (excluding first year faculty)

**Student Teacher Ratio (STR) = S / F****Table 5.1.1: Student-Faculty Ratio**

Year	CAY 2017-2018	CAYm1 2016-2017	CAYm2 2015-2016
U1.1	143(120+23)	141(120+21)	135(120+15)
U1.2	141(120+21)	135(120+15)	130(120+10)
U1.3	135(120+15)	130(120+10)	136(120+16)
UG1	U1.1+u1.2+u1.3 = <b>419</b>	U1.1+u1.2+u1.3 = <b>406</b>	U1.1+u1.2+u1.3 = <b>401</b>
P1.1	-	-	-
P1.2	-	-	-
PG1	P1.1+p1.2	P1.1+p1.2	P1.1+p1.2
Total No. of Students in the Department(S)	UG1 + PG1 = <b>419</b>	UG1 + PG1 = <b>406</b>	UG1 + PG1 = <b>401</b>
No. of Faculty in the Department(F)	F1=29	F2=29	F3=29
<b>Student Faculty Ratio (SFR)</b>	<b>14.4</b>	<b>14.0</b>	<b>13.8</b>
<b>Average SFR</b>	<b>Average =14.1</b>		

**Note:**

Minimum 75% should be Regular/ full time faculty and the remaining shall be Contractual Faculty/Adjunct Faculty/Resource persons from industry as per AICTE norms and standards.

The contractual faculty will be considered for assessment only if a faculty is drawing a salary as prescribed by the concerned State Government for the contractual faculty in the respective cadre and who have taught over consecutive 4 semesters.

Marks to be given proportionally from a maximum of 20 to a minimum of 10 for average SFR between 15:1 to 20:1, and zero for average SFR higher than 20:1. Marks distribution is given as below:

15.00 - 15.50	-	20 marks
15.51 - 16.50	-	18 marks
16.51 - 17.50	-	16 marks
17.51 - 18.50	-	14 marks
18.51 - 19.50	-	12 marks
19.51 - 20.00	-	10 marks

## 5.2. Faculty Cadre Proportion

(25)

The reference Faculty cadre proportion is 1(F1):2(F2):6(F3)

F1: Number of Professors required =  $1/9 \times$  Number of Faculty required to comply with 15:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F2: Number of Associate Professors required =  $2/9 \times$  Number of Faculty required to comply with 15:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F3: Number of Assistant Professors required =  $6/9 \times$  Number of Faculty required to comply with 15:1 Student-Faculty ratio based on no. of students (N) as per 5.1

**Table 5.2.1:** Faculty Cadre Proportion

Year	Professors		Associate Professors		Assistant Professors	
	Required (F1)	Available	Required (F2)	Available	Required (F3)	Available
CAY (2017-18)	3.11	3	6.22	6.0	18.66	<b>20</b>
CAY m1 (2016-17)	3.0	4	6.00	6.0	18.00	<b>19</b>
CAY m2 (2015-16)	3.0	3	6.00	5	18.00	<b>21</b>
<b>Average Numbers</b>	<b>3.04</b>	<b>3.33</b>	<b>6.07</b>	<b>5.66</b>	<b>18.22</b>	<b>20.00</b>

$$\begin{aligned}
 \text{Cadre Ratio Marks} &= \left( \left( \frac{AF1}{RF1} \right) + \left( \frac{AF2}{RF2} \right) \times 0.6 + \left( \frac{AF3}{RF3} \right) \times 0.4 \right) \times 12.5 \\
 &= \left( \left( \frac{3.33}{3.04} \right) + \left( \frac{5.66}{6.07} \right) \times 0.6 + \left( \frac{20.00}{18.22} \right) \times 0.4 \right) \times 12.5 = 26.17 \\
 &= 26.17
 \end{aligned}$$

- If  $AF1 = AF2 = 0$  then zero marks
- Maximum marks to be limited if it exceeds 25

Example: Student No. = 180; Required number of Faculty: 12;  $RF1 = 1$ ,  $RF2 = 2$  and  $RF3 = 9$

Case1:  $AF1/RF1 = 1$ ;  $AF2/RF2 = 1$ ;  $AF3/RF3 = 1$ ; Cadre proportion marks  $= (1 + 0.6 + 0.4) \times 12.5 = 25$

Case2:  $AF1/RF1 = 1$ ;  $AF2/RF2 = 3/2$ ;  $AF3/RF3 = 8/9$ ; Cadre proportion marks  $= (1 + 0.9 + 0.3) \times 12.5 =$   
limited to 25

Case3:  $AF1/RF1 = 0$ ;  $AF2/RF2 = 1/2$ ;  $AF3/RF3 = 11/9$ ; Cadre proportion marks  $= (0 + 0.3 + 0.49) \times 12.5 = 9.87$

### 5.3. Faculty Qualification

(25)

$FQ = 2.5 \times [(10X + 4Y)/F]$  where  $x$  is no. of regular faculty with Ph.D.,  $Y$  is no. of regular faculty with M.Tech,  $F$  is no. of regular faculty required to comply 1:15 Faculty Student ratio (no. of faculty and no. of students required are to be calculated as per 5.1)

**Table 5.3.1:** Faculty qualification

Years	X	Y	F	$FQ = 2.5 * [(10X + 4Y)/F]$
CAY (2017-18)	9	20	29	14.65
CAY m1 (2016-17)	10	19	29	15.17
CAY m2 (2015-16)	8	21	29	14.13
<b>Average Assessment</b>				<b>14.65</b>

**5.4. Faculty Retention****(25)**

No. of Regular Faculty Members in      CAYm2= 29                      CAYm1= 29                      CAY= 29

Item (% of faculty retained during the period of three academic keeping CAYm3 as base year)	Marks
>=90% of required Faculty members retained during the period of assessment keeping CAYm3 as base year	25
>=75% of required Faculty members retained during the period of assessment keeping CAYm3 as base year	20
>=60% of required Faculty members retained during the period of assessment keeping CAYm3 as base year	15
>=50% of required Faculty members retained during the period of assessment keeping CAYm3 as base year	10
<50% of required Faculty members retained during the period of assessment keeping CAYm3 as base year	0

- No. of regular faculty members in 2017-18(CAY) =29 and retention ratio is **65.52%**.
- No. of regular faculty members in 2016-17(CAYm1) = 29 and retention ratio is **82.76%**.
- No. of regular faculty members in 2015-16(CAYm2) = 29 and retention ratio is **100%**.

**Table 5.4.1:** Faculty Retention

Years	No. of retained faculty	Total No. of faculty	Faculty retention ratio
CAY (2017-18)	19	29	<b>65.52%</b>
CAY m1 (2016-17)	24	29	<b>82.76%</b>
CAY m2 (2015-16)	<b>29</b>	<b>29</b>	<b>100%</b>
<b>Average Retention ratio</b>			<b>82.76 %</b>

**5.5. Innovations by the Faculty in Teaching and Learning (20)**

*Innovations by the Faculty in teaching and learning shall be summarized as per the following description. Contributions to teaching and learning are activities that contribute to the improvement of student learning. These activities may include innovations not limited to, use of ICT, instruction delivery, instructional methods, assessment, evaluation and inclusive class rooms that lead to effective, efficient and engaging instruction. Any contributions to teaching and learning should satisfy the following criteria:*

- *The work must be made available on Institute website*
- *The work must be available for peer review and critique*
- *The work must be reproducible and developed further by other scholars*

*The department/institution may set up appropriate processes for making the contributions available to the public, getting them reviewed and for rewarding. These may typically include statement of clear goals, adequate preparation, use of appropriate methods, and significance of results, effective presentation and reflective critique*

**Teaching methods adopted to improve student learning Resources available (Centralized / Department levels)**

- *IEEE Xplore Digital Library*
- *Science Direct*
- *Taylor & Francis (E-Books)*
- *Taylor & Francis (E-Journals)*
- *Springer (E-Journals & E-Books)*
- *KNimbus Digital Library*
- *NPTEL Courses*
- *Proquest (Engineering)*
- *MIT Open Courseware*
- *Swayam Online Courses*



**Innovations by the faculty in Teaching and Learning:**

- Use of modern teaching aids like LCD projectors, Internet enabled computer systems, Wi-Fi enabled laptops are usually employed in classrooms and other student learning environments.
- Expert video subject lectures delivered by the various eminent resource persons are available in the digital library and it facilitates the faculty and students to utilize E-Tutorials of NPTEL, access E-Journals, Video Conference room, etc.
- Faculty members use digital library, Auto Desk, Mi Power, MATLAB, P-Spice and other Open Source tools to understand the course content.
- Developing Ways to enable our students to think across disciplinary boundaries and / or to make connections between what they learn inside as well as outside the classroom.
- The faculty members are encouraged to participate in short term courses, webinar, staff development programs and workshops on advanced topics to keep pace with the advanced level of knowledge and skills.
- The faculties have been participating/presenting papers in national/international conferences and publish their articles in national/international journals to enrich their knowledge.
- New Horizon College of Engineering has laboratory which is equipped with latest machines like Generator protection kit, Motor protection kit, HVDC and HVAC equipments, MATLAB, P-Spice software, MI-Power Software and Schneider Automation lab, to provide the awareness in students about the latest technology used in practical oriented teaching methods. This facility helps in getting knowledge and meets the industry demand courses, and also helps in developing the theoretical knowledge for better understanding and analyzes complex engineering problems.
- The Fast learners are chosen as team captains, and are asked to choose members for their teams from the slow learners group in the class. The team members are advised to have interactive approach for their studies. The performance of each team is assessed after the internal tests, and the top scoring teams are awarded with prizes.

## STUDENT CENTRIC TEACHING - LEARNING PROCESS

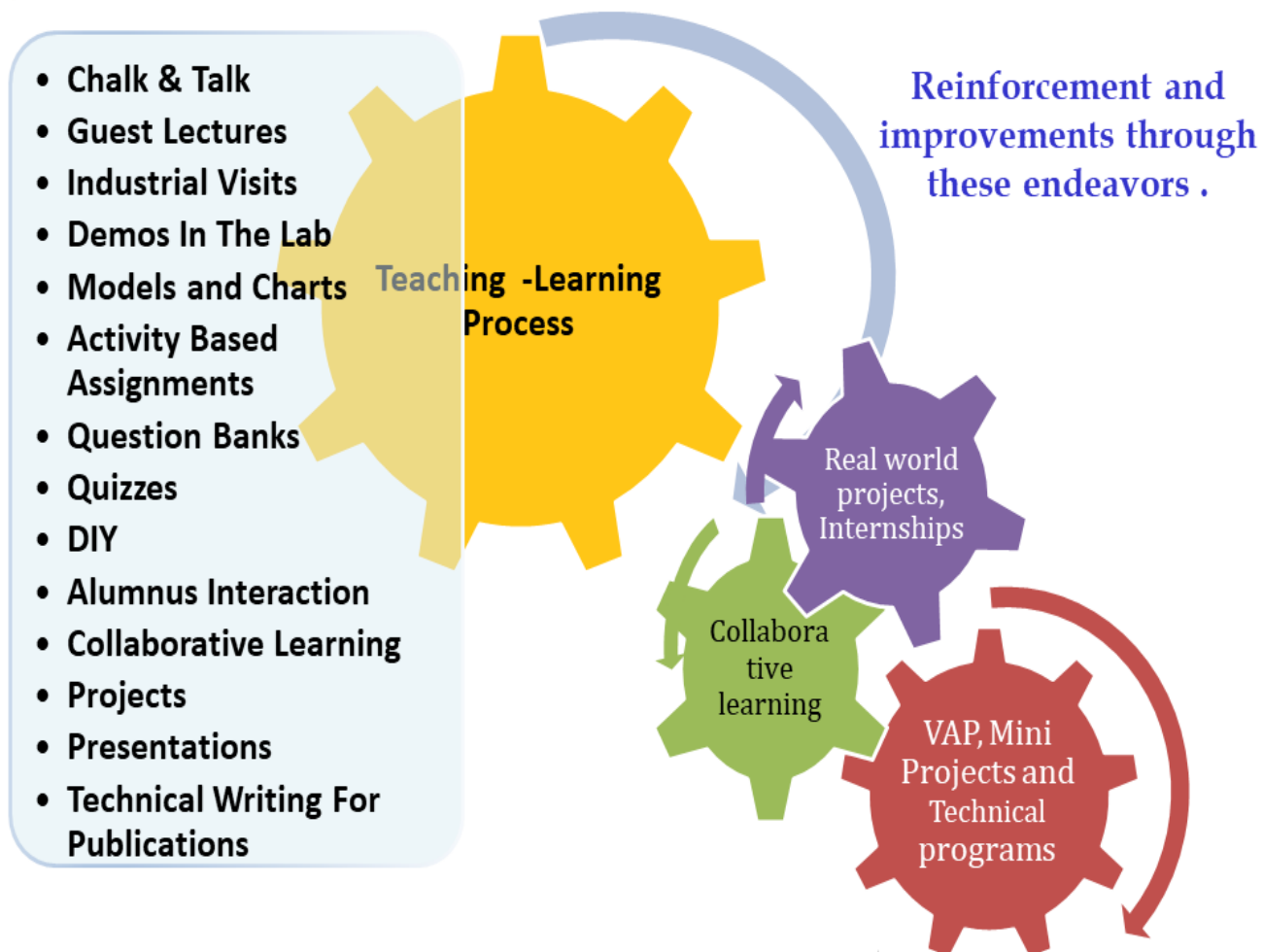


Figure 5.5.1: Innovation by Faculty in Teaching Learning Process

**5.6. Faculty as Participants in Faculty Development/Training Activities STTP's (15)**

- A Faculty scores maximum five points for participation
- Participation in 2 to 5 days Faculty development program: 3 Points
- Participation >5 days Faculty development program: 5 points

**List of faculty members participated in Faculty development/training activities/STTPs****Table 5.6.1:** List of faculty members participated in Faculty development/training activities/STTPs

Name of the Faculty	Max. 5 per faculty		
	CAYm1 (2016-17)	CAYm2( 2015-16)	CAYm3( 2014-15)
Dr. Elumalai R	3	-	-
Dr. Mahesh K	3	3	3
Dr. K.C.R. Nisha	3	3	3
Dr. Sam Harison	3	3	3
Dr. Sujitha S	3	-	-
Dr. Raju Garudachar	3	3	3
Dr. Sivasubramanian R	3	3	3
Dr.Sainarayanan	3	3	3
Dr.S.Karthikeyan	3	3	3
Dr.B.Jayachandran	3	3	3
Dr.Ramanathan	-	3	3
Inbasakaran S	3	3	0
M Karthika	3	3	3
Santhosh S	3	3	0
Mohan B S	3	3	3
Anitha A	3	3	0
Satishkumar D	3	-	-
Joshua Daniel Raj	3	-	-
Vinod Kumar S	3	-	-

Ms. Ankita Srivastava	3	3	3
Ms. Pritma Gakhar	0	3	0
Lithesh J	3	3	3
Kavitha Chenna reddy	3	0	3
Roopa C	3	3	0
Latha L R	3	3	3
Rashmi N	3	3	3
Ms. Shravanthi N	-	3	3
Ms. Surya Prabha J	3	3	3
Ms.Ela Dongre	0	3	0
Mr.Duney D Sam	3	3	3
Mr.Sunil S.K	3	-	-
Ms.Jyothi D	-	3	3
Ms.Shruthi P V	-	3	3
Ms.Vidyalakshmi	-	0	3
Ms.Poorva Mallikarjun Huddar	-	0	3
Sum	<b>81</b>	<b>78</b>	<b>69</b>
RF= Number of Faculty required to comply with 15:1 student-faculty ratio as per 5.1	<b>29</b>	<b>29</b>	<b>29</b>
<b>Assessment = 3 x (sum/0.5 RF) (Marks limited to 15)</b>	<b>3x(81/0.5x29) =16.76</b>	<b>3x(78/0.5x29) =16.14</b>	<b>3x(69/0.5x29) =14.28</b>
<i>Average Assessment over three years (Marks limited to 15) =15. 73</i>			

**5.7. Research and Development (30)****5.7.1. Academic Research (10)**

Academic research includes research paper publications, Ph.D. guidance, and faculty receiving Ph.D. during the assessment period

**5.7.1.1 Number of quality publications in refereed/SCI Journals, citations, Books/Book Chapters etc. (6)****Table 5.7.1.1.1** List of paper publications by faculties

Academic year	CAY (2017-18)	CAYm1 (2016-17)	CAYm2 (2015-16)
No. of publications	35	29	25
Books Published/chapters authored	-	04	03
No. of Patent Applied	13	04	-

**Table 5.7.1.1.2:** Details of books published

Name of the Book/chapter	Author Name	Details of Publication	Year
Circuit Theory	Prof. B.S.Mohan Dr.S.Sujitha Prof. M.Arun Kumar Dr.Elumalai	Charulatha Publications, Chennai	2017
Electromagnetic Fields	Dr.S.Sujitha Prof. B.S.Mohan Dr.Elumalai Prof. M.Arun Kumar	Charulatha Publications, Chennai	2017
Microprocessor and Microcontroller	Dr.Elumalai Prof. M.Arun Kumar Dr.S.Sujitha Prof. B.S.Mohan	Charulatha Publications, Chennai	2017
Embedded Systems	Prof. M.Arun Kumar Dr.Elumalai Prof. B.S.Mohan Dr.S.Sujitha	Charulatha Publications, Chennai	2017
Electrical energy, Generation, Utilization and Conservation	Dr.Mahesh K	Charulatha Publications, Chennai	2015
Basic Electrical & Electronics Engineering	Dr.Mahesh K	Charulatha Publications, Chennai	2015
Power System Analysis	Dr.Mahesh K	Charulatha Publications, Chennai	2015
Lecture Notes in Electrical Engineering(LEE)	Dr.Nisha KCR	Springer ,New York, publication/Volume 150,Chapter 6/ISBN: 978-1-4614-3363-7	2013

Table 5.7.1.1.3: Details of Patent Filed

Topic	Author Name	CBR Number / Patent Number	CBR Date
Novel System and Method for Power Saving Using Pulse Width Modulation Technology (PMT)	Dr. R. Elumalai Dr. S. Sujitha Ms. A. Anitha Prof. Satish Kumar	E-2/3504/2017-CHE and 201741041152	17.11.2017
Novel System and Method for Smart Optimization of Demand Side Management (DSM) for Productivity	Dr. R. Elumalai Dr. S. Sujitha	E-2/3512/2017-CHE and 201741041160	17.11.2017
Novel System and Method of Remote Power Charging with Mechanization Efficiently by Super capacitor	Dr. R. Elumalai Dr. S. Sujitha Prof. Satish Kumar Ms. A. Anitha	E-2/3498/2017-CHE and 201741041146	17.11.2017
Novel System and Method of Autonomous Controls for the Smart Operation of a Metro Train	Dr. R. Elumalai Dr. S. Sujitha	E-2/3500/2017-CHE and 201741041148	17.11.2017
Novel System and Method of Photovoltaic Assortment Based Power Generation System Using Nine Level Inverter	Dr. R. Elumalai Dr. S. Sujitha Mr.T Muni Prakash Mr. Mohan B. S	E-2/3502/2017-CHE and 201741041150	17.11.2017
Novel System and Method of Capricious Electronic Speed Governor	Dr. R. Elumalai Dr. S. Sujitha Priyanka S. Kole T Muni Prakash	E-2/3513/2017-CHE and 201741041161	17.11.2017
Novel System and Method for Smart Detection of Electricity Theft in Modern Distribution Network	Dr. R. Elumalai Dr. S. Sujitha Prof. Mohan B. S Ms. Kavitha Chennareddy	E-2/3508/2017-CHE and 201741041156	17.11.2017
Novel System and Method for Grid Unified Solar Based Irrigation System	Dr. R. Elumalai Dr. S. Sujitha Prof. Sunil. S K Mr. Vinod Kumar	E-2/3510/2017-CHE and 201741041158	17.11.2017
Novel System and Method for Solar Based Voltage Source Inverter (VSI) Control Brushless DC (BLDC) Motor for Pump Applications	Dr. R. Elumalai Dr. S. Sujitha Prof. J. Joshua Daniel Raj Mr. Vinod Kumar	E-2/3506/2017-CHE and 201741041154	17.11.2017
Novel System and Method for Alleviation of Power Quality Snags Using Integrated Power Quality Conditioner	Dr. R. Elumalai Dr. S. Sujitha Prof. J. Joshua Daniel Raj Ms. Karthika. M	E-2/3511/2017-CHE and 201741041159	17.11.2017
Novel system and the method of powering bulb using piezo sensor and power management system	Dr.Nisha	201741041985	23.11.2017
Novel system and method for IOT based herb detection system	Dr.Nisha	201741041986	23.11.2017
Novel Method and System of Graphene UCAP Powered Insulin Pump	Dr.Nisha	201741034932	03.10.2017
System and Methods for smart and expandable Helmet with IOT capabilities	Dr.Nisha	201741018076	22.06.2017
Green Energy – Hybrid Renewable Power Generation (Solar Wind) for Irrigation	Dr.Mahesh K Mr.Lithesh J	21416 / 201741021382	19-06-2017
Design and Installation of Economical Pico Hydro Electrification using Green Energy	Dr.Mahesh K Mr.Inbasakaran.S	21416 / 201741021383	19-06-2017
Security Enhancement for Four Wheel Automotive system using light stack position	Dr.Elumalai.R Mr.Duney D Sam	19301/201741018336	25-05-2017

**Table 5.7.1.1.4:** List of paper publications by faculty for the past three Academic Years (2015-2018)

S.No	Name of the Faculty	Title	Name of the Journal/Conference /Event /Publisher	Volume/ Issue/Journals/ conference	Year	Impact Factor
1.	Dr. S.Sujitha	The Implementation of Field Oriented Control for PMSM Drive Based on TMS320F28035 DSP Controller	International Journal of Applied Engineering Research	ISSN: 0973-4562	Mar-18	4.2
2.	Ms.Roopa C	The Implementation of Field Oriented Control for PMSM Drive Based on TMS320F28035 DSP Controller	International Journal of Applied Engineering Research	ISSN: 0973-4562	Mar-18	4.2
3.	Ms.Ch. Kavitha	Fault Tolerant Control System for Hall effect Position Sensor Failure of BLDC Motor	International Journal for science and advanced research in technology	ISSN: 2395-1052	Feb-18	4.284
4.	Ms.Roopa C	Fault Tolerant Control System for Hall effect Position Sensor Failure of BLDC Motor	International Journal for science and advanced research in technology	ISSN: 2395-1052	Feb-18	4.284
5.	Dr. Sam Harison	Fault Tolerant Control System for Hall effect Position Sensor Failure of BLDC Motor	International Journal for science and advanced research in technology	ISSN: 2395-1052	Feb-18	4.284
6.	Dr.Elumalai R	L2 Cache Performance analysis for MPSOC by tag comparison	International Journal of Engineering and Technologies	ISSN: 285 - 190	Jan-18	5.2
7.	Mrs.Karthika	Vector Controlled 3 Phase Induction motor Drive using PhotoVoltaic	International Journal for Research in Applied Science and Engineering Technology	ISSN: 2321-9653	Jan-18	6.887
8.	Ms.Deepa V	Novel Energy Generation	International Journal for science and advanced research in technology	ISSN: 2395-1052	Jan-18	4.284
9.	Mr.Sunil S.K	Microcontroller Based Grid Interconnected Solar Irrigation System	International Journal of Electronics, Electrical and Computational System	ISSN: 2348-117X	Jan-18	2.52
10.	Ms.Roopa C	Energy Harvesting By Piezoelectric tree to produce renewable energy	International Journal for science and advanced research in technology	ISSN: 2395-1052	Jan-18	4.284

11.	Mrs.Priyanka S Kole	Voltage Regulation of 11kV Distribution Feeder – A Case Study	International Journal of Emerging Technologies and Innovation Research	ISSN: 2349- 5162	Jan-18	5.87
12.	Dr.Hari Priya	A Novel Approach to Control Single Phase Induction motor Using PIC18F4431	International Journal for Research in Applied Science and Engineering Technology	ISSN: 2321-9653	Jan-18	6.887
13.	Ms.Roopa C	A Case study on Energy Harvesting Piezoelectric tree to produce renewable energy	International Journal of Advanced Research in Management, Architecture, Technology and Engineering	ISSN: 2454-9762	Jan-18	4.231
14.	Mr.Santhosh	Microcontroller Based Grid Interconnected Solar Irrigation System	International Journal of Electronics, Electrical and Computational System	ISSN: 2348-117X	Jan-18	2.52
15.	Ms.Roopa C	Novel Energy Generation	International Journal for science and advanced research in technology	ISSN: 2395-1052	Jan-18	4.284
16.	Ms.Deepa V	Energy Harvesting By Piezoelectric tree to produce renewable energy	International Journal for science and advanced research in technology	ISSN: 2395-1052	Jan-18	4.284
17.	Mr. D.Satish Kumar	A Novel Approach to Control Single Phase Induction motor Using PIC18F4431	International Journal for Research in Applied Science and Engineering Technology	ISSN: 2321-9653	Jan-18	6.887
18.	Mr.Vinod Kumar S	Microcontroller Based Grid Interconnected Solar Irrigation System	International Journal of Electronics, Electrical and Computational System	ISSN: 2348-117X	Jan-18	2.52
19.	Mrs.Anitha	Vector Controlled 3 Phase Induction motor Drive using PhotoVoltaic	International Journal for Research in Applied Science and Engineering Technology	ISSN: 2321-9653	Jan-18	6.887
20.	Ms.Deepa V	Gravity Power Generation	International Journal of Advanced Research in Management, Architecture, Technology and Engineering	ISSN: 2454-9762	Jan-18	4.231



21.	Mr.Satish Kumar.D	Microcontroller Based Grid Interconnected Solar Irrigation System	International Journal of Electronics, Electrical and Computational System	ISSN: 2348-117X	Jan-18	2.52
22.	Mrs.Latha L R	A Novel Approach to Control Single Phase Induction motor Using PIC18F4431	International Journal for Research in Applied Science and Engineering Technology	ISSN: 2321-9653	Jan-18	6.887
23.	Dr.Mahesh. K	Design and Development of Drop weight Generator for Harnessing Green Energy	International Journal of Engineering Science and Mathematics	ISSN 2231-3273 Volume 7, Issue 2 December 2017	Dec-17	6.765
24.	Mr.J.Lithesh	Design and Development of Drop weight Generator for Harnessing Green Energy	International Journal of Engineering Science and Mathematics	ISSN 2231-3273 Volume 7, Issue 2 December 2017	Dec-17	6.765
25.	Mr.T Muni Prakash	Proposed Control Strategies for Mitigating Low Voltage Ride through to Improve Grid Synchronization of Wind Energy Conversion Systems with DFIG Machine	International Journal of Electronics, Electrical and Computational System	ISSN 2348-117X Volume 6, Issue 9 September 2017	Sep-17	4.588
26.	Mrs. Anitha. A	UCAP based dynamic voltage restorer using impedance source inverter	International journal of Advanced research in electrical, electronics and computational system	ISSN:2348-117X,volume 6,Issue 8, August 2017	Aug-17	5.621
27.	Dr.Elumalai R	ACF Algorithm for ECG Signal implementation	International Journal of Electrical, Electronics and Data communication	ISSN: 2320-2084, Volume 5, Issue 8	Aug-17	3.46
28.	Dr.S.Sujitha	Voltage Distribution across string insulators by sphere gap method	International journal of Advance Research in science and Engineering	ISSN:2319-8354,volume 6,Issue 8, August 2017	Aug-17	4.588
29.	Mr.J.Joshua Daniel Raj	Data centric security in FPGA Based data center using Attribute based Encryption	International journal of Advance Research in science and Engineering	ISSN:2319-8354,volume 6,Issue 8, August 2017	Aug-17	4.588
30.	Ms.Ch. Kavitha	Voltage Distribution across string insulators by sphere gap method	International journal of Advance Research in science and Engineering	ISSN:2319-8354,volume 6,Issue 8, August 2017	Aug-17	4.588
31.	Mr.S.Vinod kumar	High frequency switching of Multi segment PSEUDO resonant boost converter for electric drives	International journal of Advance Research in science and Engineering	ISSN:2319-8354,volume 6,Issue 8, August 2017	Aug-17	4.588

32.	Mrs.Nisha.KCR	UCAP based dynamic voltage restorer using impedance source inverter	International journal of Advanced research in electrical, electronics and computational system	ISSN:2348-117X,volume 6,Issue 8, August 2017	Aug-17	5.621
33.	Mr.Arun Kumar	Selective Harmonic Elimination for multilevel inverter in STATCOM	International journal of Research in applied science and Engineering Technology	ISSN:2321-9653,volume 5,Issue 8, August 2017	Aug-17	6.887
34.	Dr.S. Sujitha	High frequency switching of Multi segment PSEUDO resonant boost converter for electric drives	International journal of Advance Research in science and Engineering	ISSN:2319-8354,volume 6,Issue 8, August 2017	Aug-17	4.588
35.	Dr.Sujitha .S	Exploration of Hybrid Switched Reluctance motor drives Using H Bridge Converter	Middle East Journal of Scientific Research	ISSN:1990-9233,volume 25,Issue 5,june 2017	Jun-17	3.11
36.	Dr.Sujitha .S	Investigation of Standalone PV Fed Switched Reluctance Motor Drivers Using C Dump Converter 2	Global Journal of pure and Applied Mathematics	ISSN: 0973-1768,volume13,Issue 10, 2017	Jun-17	3.181
37.	Mrs.Kavitha chenna reddy	Analysis of sub-synchronous resonance with VSC-based HVDC system	International journal of Advanced research in electrical, electronics and instrumentation engineering.	ISSN:2320-3765,volume 6,Issue 6,june 2017	Jun-17	5.621
38.	Mr.Sunil S.K	Energy Management Techniques with solar roof Top with Grid-A Case Study	International journal of Advanced research in electrical, electronics and computational system	ISSN:2348-117X,volume 6,Issue 6,june 2017	Jun-17	5.621
39.	Mr.Sunil S.K	Smart System for power saving using PWM Technology	International journal of Advanced research in electrical, electronics and computational system	ISSN:2348-117X,volume 6,Issue 6,june 2017	Jun-17	5.621
40.	Mrs.Latha	PWM Generation using PIC16F877A For bidirectional V/F control of single – phase induction motors	International journal of Advanced research in electrical, electronics and instrumentation engineering.	ISSN:2320-3765,volume 6,Issue 6,june 2017	Jun-17	5.69
41.	Mrs.Latha	A Novel Approach to Compress and Reconstruct an Audio Signal	International journal of Advanced research in electrical, electronics and instrumentation engineering	ISSN:2320-3765,volume 6,Issue 6,june 2017	Jun-17	5.69
42.	Mrs.priyanka S Kole	An overview of nanotechnology and its energy application	International journal of Advanced research in engineering, Science & technology	ISSN:2393-9877,volume 4,Issue 6,june 2017	Jun-17	4.542

43.	Mrs.priyanka S Kole	Application of WiMAX for load monitoring in smart Grid infrastructure	International journal of Advanced research in engineering, Science & technology	ISSN:2393-9877,volume 4,Issue 6,june 2017	Jun-17	4.542
44.	Mrs.Deepa V B	PWM Generation using PIC16F877A For bidirectional V/F control of single – phase induction motors	International journal of Advanced research in electrical, electronics and instrumentation engineering.	ISSN:2320-3765,volume 6,Issue 6,june 2017	Jun-17	5.69
45.	Mrs.Priyanka S Kole	A case study on IEEE-14 bus system with an emphasis on optimized reactive power compensation	International journal of Advanced research in engineering, Science & technology	ISSN:2393-9877,volume 4,Issue 6,june 2017	Jun-17	4.542
46.	Mrs.Deepa V B	A Novel Approach to Compress and Reconstruct an Audio Signal	International journal of Advanced research in electrical, electronics and instrumentation engineering	ISSN:2320-3765,volume 6,Issue 6,june 2017	Jun-17	5.69
47.	Mr.Santosh S	Energy Management Techniques with solar roof Top with Grid-A Case Study	International journal of Advanced research in electrical, electronics and computational system	ISSN:2348-117X,volume 6,Issue 6,june 2017	Jun-17	5.621
48.	Mr.Karthika M	PV FED interleaved boost converter for the speed control of separately excited DC Motor using FLC	International journal of Advanced research	ISSN:2320-5406,volume 6, No 4 , August 2016	Aug-16	4.588
49.	Mr.Duney Sam	Design and Development of High Voltage /Current Supply with Constant Current System for HHO Cell A Green Energy System	International Journal of Current Engineering and Technology	ISSN:2277-4106,volume 6, No 4 , August 2016	Jul-16	3.21
50.	Mr.Santosh S	Design and Development of High Voltage /Current Supply with Constant Current System for HHO Cell A Green Energy System	International Journal of Current Engineering and Technology	ISSN:2277-4106,volume 6, No 4 , August 2016	Jul-16	3.21
51.	Dr.Nisha KCR	Design and implementation of live tap for deterministic Ethernet bus using FPGA	IEEE International Conference on Recent Trends in Electronics, Information and Communication Technology	IEEE Proceedings of RTEICT- 2016., pp.532-536/ Electronic ISBN:978-1- 5090-0774-5	May-16	-
52.	Dr.Nisha KCR	PIEZO film based renewable energy system	IEEE International Conference on circuit power and computing technologies- ICCPCT 2016	IEEE Proceedings of ICCPCT 2015., pp.1-5/ Electronic ISBN: 978-1-5090-1277-0	Mar-16	

53.	Dr.Nisha KCR	Smart ATM surveillance system	IEEE International Conference on circuit power and computing technologies- ICCPCT 2016	IEEE Proceedings of ICCPCT 2015., pp.1-6/ Electronic ISBN:978-1- 5090- 1277-0	Mar-16	-
54.	Dr.Nisha KCR	PV Powered Generalized Multi cell Switched- Inductor Embedded Quasi Z-source Inverter using MSP-430 Controller	IEEE International Conference on circuit power and computing technology	IEEE Proceedings of ICCPCT 2015., pp.1-6/ Electronic ISBN: 978-1- 5090-1277-0	Mar-16	-
55.	Ms.A.Anitha	Quasi-Z-source Invert Based Dynamic Voltage Restorer	International Journal of Latest Trends in engineering and Technology(IJLTET)	ISSN No.2278-621X	Jan-16	4.49
56.	Dr.Nisha KCR	FPGA based power quality monitoring using FFT method for single phase power monitoring	IEEE International conference on Emerging technological trends(ICETT) – 2016	Presented	2016	-
57.	Ms.Prtimea Gakhar	A New Inverter With Fewer Switches For Reduction Of Harmonics And Variations In Torque For Synchronous Drives	International Journal of Engineering Research - online	ISSN No.2321-7758 Vol.3;Issue.6	Dec-15	3.601
58.	Ms.Roopa.C	Design and implementation of BIPED Robot using dsPIC30F2010 Controller	International Research Journal of Engineering and Technology(IRJET)	ISSN No. 2395-0056	Dec-15	2.518
59.	Ms.Latha.L.R	Variable Voltage Battery Charging Capability DC-DC Converter with Fuzzy Controller	International Journal of Engineering Research and Management(IJERM)	ISSN No.2349-2058. Volume-02. Issue-12	Dec-15	2.36
60.	Mr.D.Satish Kumar	MMC based D-STATCOM for Different Loading Conditions	International Journal of Engineering Research and Management(IJERM)	ISSN No.2349-2058 Volume-02. Issue-12	Dec-15	2.36
61.	Ms.Jyothi.D	Reduction of Current Harmonics with FLC based CSC for Synchronous Drive	International Journal of Advanced Research in Electrical and Instrumentation Engineering (JAREEIE)	ISSN No. 2278-8875	Dec-15	5.016
62.	Mr.B.S. Mohan	Estimating to optimize the power consumption in SVPB, NHCE campus	International Journal of current Research	ISSN No.0975-833X	Nov-15	4.016
63.	Ms.Roopa.C	Analysis Of Variable Speed Control And PFC CS Converter For Switched Reluctance Motor Drive Applications	International Journal of Engineering Research - Online	ISSN No. 2321-7758 Volume.3 Issue.6	Nov-15	4.016

64.	Ms.Ankita Srivastava	Comparison of Nine level and Eleven level Inverter for Induction Motor Drives	International Journal of Latest Trends and Technology(IJLTET)	ISSN No.2278-621X	Nov-15	4.49
65.	Ms.Kavitha Chenna Reddy	ZSI-DVR Elimination Of Shoot Through Problems And Deep Sag Compensation With HFL Controller	International Journal of Engineering Research and Science & Technology(IJERST)	ISSN No.2319-5991 Vol.4	Nov-15	1.09
66.	Ms.M Karthika	Renewable Energy Source Based 9 Level Converter With Minimum Switches For Distributed Generation	International Journal of Engineering Research and Science & Technology(IJERST)	ISSN No.2319-5991	Nov-15	1.09
67.	Dr.Nisha KCR	Solar Powered Switched-capacitor reduced source DC-link Impedance source inverter system	International Journal of Applied Engineering Research	Vol.10/ No.13/ISSN 0973-4562	Aug-15	3.97
68.	Mr.Duney D Sam	Delineation and advancement of Electric Power Measuring System using PIC Microcontroller and Processing	International Journal of current Engineering and Technology	E-ISSN 2277-4106 P-ISSN 2347-5161	Jun-15	5.126
69.	Mr. B.S. Mohan	Reviewing voltage profile, power & reactive power compensation in EHVAC & UHVAC line at power & Fractional frequency	International Journal of Electronics, Electrical and Computer System(IJEECS)	ISSN No.2348-117X	Jun-15	4.295
70.	Dr.Nisha KCR	PV powered Switched Inductor Embedded DC link Impedance-source inverter system	Springer International conference on soft computing systems 2015	Presented	Apr-15	-
71.	Mr.B.S. Mohan	Comparing to estimate the use of alternative energy over grid energy	International Journal of Electronics, Electrical and Computer System(IJEECS)	ISSN No.2278-909X	Mar-15	2.04
72.	Dr.Nisha KCR	PV powered performance enhanced three-stage cascaded quasi-Z-source inverter fed Induction motor drive	IEEE International Conference on circuit power and computing technologies- ICCPCT 2015,	IEEE Proceedings of ICCPCT 2015., pp.1-7. /Electronic ISBN:978-1-4799-7075-9	Mar-15	-
73.	Dr.Mahesh K	Statistical Distribution Analysis Implementation Using Matlab For Wind Energy	Asian Journal of Mathematics and Computer Research(AJOMCOR)	2(1) : 12-32	Feb-15	3.9
74.	Dr.Mahesh K	Dual axis solar tracker	International Journal of Engineering Science and Management	ISSN No.2231-3273	Jan-15	2.243
75.	Dr.Nisha KCR	PV powered Switched Inductor Embedded DC link Impedance-source inverter system	Australian Journal of Basic and Applied Science, AENSI Publisher	special issue/pp.260-267, ISSN:19918178.	2015	-

**5.7.1.2 Ph.D. guided /Ph.D. awarded during the assessment period while working in the Institute** (4)

**Table 5.7.1.2.1:** No. of research scholars received Ph.D during for past three years.

S.No	Year	Internal (Research Centre – EEE)		External	
		PhD Guided / ongoing	No. of Ph.D awarded	PhD Guided/ongoing	No. of Ph.D awarded
1	2017-18	4	-	2	-
2	2016-17	4	-	2	1
3	2015-16	0	-	3	-

**Table 5.7.1.2.2:** List of faculty membership in professional bodies

S.No	Faculty Name	Committee
1.	Dr. Elumalai R	1. Member of Indian Society of Technical Education (MISTE), 2. Member of International Association of Engineers (IAENG) 3. Member of Institute of Engineers (MIE)
2.	Dr. Mahesh K	1.Member of International Association of Engineers (IAENG) 2.IEEE Technical Committee Membership
3.	Dr. Sujitha S	1.Member of Indian Society of Technical Education (MISTE), 2. Member of International Association of Engineers (IAENG) 3. Member of Institute of Engineers (MIE)
4.	Dr. K.C.R. Nisha	Institute of Electrical and Electronics Engineering (IEEE)
5.	Dr. Sam Harison	Member of International Association of Engineers (IAENG)
6.	Mr.Inbasakaran S	1. Member of International Association of Engineers (IAENG) 2. Members of International Association of Computer Science and Information Technology
7.	Ms.M Karthika	Member of International Association of Engineers (IAENG)
8.	Mr.Santhosh S	Member of International Association of Engineers
9.	Mr.Mohan B S	Member of International Association of Engineers (IAENG)
10.	Ms.Anitha A	Member of Indian Society of Technical Education (MISTE),
11.	Mr.Satishkumar D	Member of International Association of Engineers (IAENG)
12.	Mr. Joshua Daniel Raj	Member of International Association of Engineers (IAENG)
13.	Mr. Vinod Kumar S	Member of Indian Society of Technical Education (MISTE),

14.	Mr.Lithesh J	Member of International Association of Engineers (IAENG)
15.	Ms. Kavitha Chenna reddy	Member of International Association of Engineers (IAENG)
16.	Ms. Roopa C	Member of International Association of Engineers (IAENG)
17.	Ms. Latha L R	Member of International Association of Engineers (IAENG)
18.	Ms. Priyanka S Kole	Institute of Electrical and Electronics Engineering (IEEE)
19.	Ms. Deepa V Bolanavar	Member of International Association of Engineers (IAENG)
20.	Mr. Arun kumar M	Institute of Electronics and Telecommunication Engineers(IETE)
21.	Mr.T Muni Prakash	Member of Indian Society of Technical Education (MISTE),
22.	Mr.Mariselvam Arumuga	Member of Institution of Engineering and Technology
23.	Mr.Sunil S K	Society of Automotive Engineers in India

### 5.7.2. Sponsored Research

(5)

#### Funded research

(Provide a list with Project Title, Funding Agency, Amount and Duration)

Funding amount (Cumulative during last three academic year starting from CAYm1):

Amount > 20 lacs	- 5 Marks
Amount >= 16 lacs and <=20 lacs	-4 Marks
Amount >= 12 lacs and <16 lacs	-3 Marks
Amount >= 8 lacs and <12 lacs	-2 Marks
Amount >= 4 lacs and <8 lacs	-1 Mark
Amount < 4 lacs	-0 Marks

**Table 5.7.2.1:** Sponsored research projects for past three years

S.No.	Project title	Funding Agency	Amount	Principal Investigator	Duration	Year of sanction
1	Green energy-hybrid renewable power generation for irrigation	Vision Group on Science and Technology, Govt of Karnataka	5,00,000.00	Dr. Mahesh.K & Dr.Haripriya	3 Years	2017
2	Modernization of High Voltage Lab	AICTE	13,38,162.00	Dr. R. Elumalai & Dr.Sam Harison	1 Year	2017
3	Power quality monitoring using FFT method	NHECT	70,000.00	Dr.Nisha KCR & DrS.Karthikeyan	1 Year	2016
4	Renewable energy generation using Piezo film	NHECT	50,000.00	Dr.Nisha KCR & Dr.Sainarayanan	1 Year	2016

5	PV powered Embedded Impedance source Inverter system	NHCT	50,000.00	Dr.Nisha KCR & DR. B.Jayachandran	1 Year	2015
6	Motion Capture system	7D Technology network company, Chennai	2,70,000	Dr. Mahesh.K & Mr.Sivasubramanian.	1 Year	2014
7	Virtual Reality Glasses	7D Technology network company, Chennai	3,20,000	Dr. Mahesh.K & Dr.Sainarayanan	1 Year	2014
<b>Total Sponsored Research Amount</b>			<b>Rs.25,98,162.00</b>			

### 5.7.3. Developmental Activities

(10)

#### 5.7.3.1. Product Development

**Table 5.7.3.1.1:** List of Products developed for CAY (2017-18)

S.No	Type of Product	Applications	Faculty Incharge
1	Renewable Energy Power Supply for personal Digital Assistance	For Charging domestic appliances like mobile charging, trimmers, etc.	Dr.Mahesh K

**Table 5.7.3.1.2:** List of Products developed for CAY m1 (2016-17)

S.No	Type of Product	Applications	Faculty Incharge
1	Renewable Energy Generation from Alternator using Foot Power	This product used to provide uninterruptible power supply, small electro locomotives.	Mr.Lithesh

**Table 5.7.3.1.3:** List of Products developed for CAY m2 (2015-16)

S.No	Type of Product	Applications	Faculty Incharge
1	STRIDE	This product is used for transportation from one place to another for short distance	Dr.Mahesh K



### 5.7.3.2. VTU Recognized R & D Centre

#### Research Laboratories

Research Center at Department of Electrical and Electronics Engineering is recognized by Visvesvaraya Technological University, Belgaum. The research center emphasis on research under various areas of specialization that include High Voltage Engineering, Renewable energy resources, Power Electronics and Electrical Machines. The Electrical and Electronics Engineering Department has separate laboratories catering to the needs of both the regular course work and research works at different levels. The laboratories are well equipped with all the regular analytical instruments.

**Table: 5.7.3.2.1:** Research Centre details

University	Year of Recognition	Reference Number
Visvesvaraya Technological University, Belagavi	December 2008	VTU/Aca/2008-09/A-9/9376

- Research lab is set up as additional facility to facilitate the students and faculties to involve in research projects, consultancy and to keep pace with the latest technology.
- MoU with Schneider Electric, EduCADD Learning Solutions Pvt Ltd, ITC Limited, Essen Electricals and Enterprises Pvt Ltd, and Radiant Systems are signed to improve the quality of learning.
- Open-ended experiments are added along with the existing experiments in the laboratory to enhance the technical skills.

#### Instructional Materials:

- NHCE Library is a resource centre for teaching, learning & research.
- Library has spread over two floors with 605 seating capacity, state of art digital library, E-Learning Centre, Video Conference Room, Online class room with recording facility, Students Discussion rooms, Faculty discussion room, and Books & Stationary shop are available in the Ground Floor and Stack Area, Reference Section, Circulation Counter, OPAC Search, Journals/Magazines and Newspaper Section are made available in Lower Level of the library building.
- Library holds a hybrid collection of printed as well as electronic resources which include books, journals, databases, audio-visuals, CDs/DVDs, e-books, e-journals, reports, course

materials; previous years' question papers, Bound Volumes, Project Reports, case studies, conference proceedings, training manuals, etc.

- As the e-journals access is IP based, the stakeholders can take benefit of this facility from anywhere in the campus at anytime. Some of them are listed in **Table:5.7.3.2.2.**

**Table: 5.7.3.2.2:** E-journal details

Sl.No.	Database Name	Website
1	IEEE Xplore Digital Library	<a href="http://ieeexplore.ieee.org/">http://ieeexplore.ieee.org/</a>
2	Science Direct	<a href="http://www.sciencedirect.com/">http://www.sciencedirect.com/</a>
3	Taylor & Francis (E-Books)	<a href="http://www.crcnetbase.com/">http://www.crcnetbase.com/</a>
4	Taylor & Francis (E-Journals)	<a href="http://www.tandfonline.com/">http://www.tandfonline.com/</a>
5	Springer (E-Journals & E-Books)	<a href="http://link.springer.com/">http://link.springer.com/</a>
6	Knimbus Digital Library	<a href="http://www.knimbus.com/">http://www.knimbus.com/</a>
7	Proquest (Engineering)	<a href="http://search.proquest.com/">http://search.proquest.com/</a>
8	NPTEL Courses	<a href="https://onlinecourses.nptel.ac.in/">https://onlinecourses.nptel.ac.in/</a>
9	MIT Open Courseware	<a href="https://ocw.mit.edu/index.htm">https://ocw.mit.edu/index.htm</a>

- Currently the library holds over 43,726 books, 73 print journals, provides access to Electronic Resources, newspapers and business magazines, and 4000 multimedia resources.
- The class notes and resource material is also kept into database. The students can login and student can access.
- Digital Library comprises of 50 computers with Internet facility.
- Free Book Bank facility for SC/ST students and book bank facility for open students at the nominal cost is also provided to fulfill their academic needs.
- Reprography and printing facility is available in the college premises.
- Books are arranged subject wise and department wise and personal attention is given for fulfilling their library related needs.
- Open access facility is available. Library Staff motivate the students for open access to aware them about the latest arrivals.
- Separate Reference, Periodical, Circulation, Digital Library section and reading room facility is available in the Library.
- In addition to the central Library, each department has its own Departmental Library to facilitate easy access to the faculty, students and research scholars.

**5.7.4. Consultancy (from Industry)****(5)**

(Provide a list with Project Title, Funding Agency, Amount and Duration)

Funding amount (Cumulative amount during last three academic years starting from CAYm1):

Amount &gt; 10 lacs - 5 Marks

Amount &gt;= 8 lacs and &lt;=10 lacs -4 Marks

Amount &gt;= 6 lacs and &lt;8 lacs -3 Marks

Amount &gt;= 4 lacs and &lt;6 lacs -2 Marks

Amount &gt;= 2 lacs and &lt;4 lacs -1 Mark

Amount &lt; 2 lacs -0 Marks

**5.7.4.1. Consultancy projects.****Table 5.7.4.1.1:** Details of Consultancy projects

Details of Consultancy projects accomplished at Dept. of Electrical & Electronics Engineering						
S.No	Faculty Incharge	Nature/Title of Consultancy Work	Client/Organization /Company	Duration	Amount Earned	Year of Sanction
1	Dr. R. Elumalai & Dr.Raju Garudachar	Professional Consultancy and knowledge sharing	ITC	2 Years	1,47,500.00	2017
2	Dr.S.Sujitha S	Building up an analytical sampling system to measure hydro carbon in steam condensate stream	INSTROL (L.L.C)	2 Years	3,00,000.00	2016
3	Dr. R. Elumalai, Dr. Mahesh K & Dr. K.C.R.Nisha	Energy Auditing	Lakshmi Enterprises	7 Months	1,00,000.00	2016
4	Dr. K.C.R. Nisha & Dr.Sam Harison	Installation and commissioning of GPS Tracking system for goods vehicle	Lakshmi Transport	12 Months	1,50,000.00	2016
5	Dr. Mahesh & Dr.Sainarayanan	Designing of control panels	Balaji Industries	6 Months	1,50,000.00	2015
6	Dr. Mahesh K & Mr.Sivasubramanian R	Energy Auditing	Venkateshwara Garments	6 Months	2,00,000.00	2014
<b>Total Consultancy Amount</b>					<b>Rs. 10,47,500.00</b>	

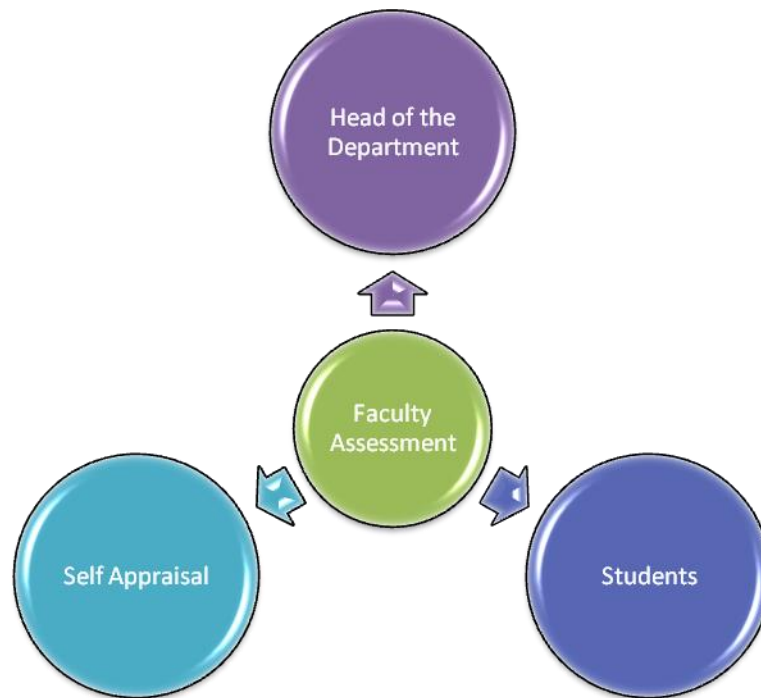
**5.8. Faculty Performance Appraisal and Development System (FPADS)****(30)**

Faculty members of Higher Educational Institutions today have to perform a variety of tasks pertaining to diverse roles. In addition to instruction, Faculty members need to innovate and conduct research for their self-renewal, keep abreast with changes in technology, and develop expertise for effective implementation of curricula. They are also expected to provide services to the industry and community for understanding and contributing to the solution of real life problems in industry. Another role relates to the shouldering of administrative responsibilities and co-operation with other Faculty, Heads-of-Departments and the Head of Institute. An effective performance appraisal system for Faculty is vital for optimizing the contribution of individual Faculty to institutional performance. The assessment is based on:

- ❖ A well-defined system for faculty appraisal for all the assessment years (10)
- ❖ Its implementation and effectiveness (20)
  - The College/Department encourages a positive method in assisting faculty members to measure the strengths and weaknesses for the determination of maximizing performance and expanding professional growth.
  - The performance appraisals are an inherent part of the process by which management can accomplish these objectives.
  - The performance appraisals provide College management with information useful in merit salary determinations and at the same time, it offers opportunity for positive evaluation and discussion of employee weaknesses and strengths.
  - The College/Department encourages faculty members, who are doing R&D projects and consultancy.
  - The College/Department encourages faculty members, who are attending in the internal/national conference.

- The College/Department encourages faculty members, who are filing patent/copyrights by paying money toward expenditure of it.
- The College/Department encourages faculty members, who are member of professional societies such as IEEE, ACM etc. by paying membership amount.
- The Institution Management strives hard to promote professional development of faculty by encouraging them to attend general orientation courses, refresher Courses, training programs and workshops organized by the reputed Institutions/universities.
- Organizing national /international seminars/guest lecturers/ workshops/ conferences on crucial issues.
- Granting leave for attending state/national seminars/workshops/FDPs etc.
- Encouraging faculty to apply for research grants.
- Cash incentive of Rs. 5000/- and Rs. 2000/- will be given to faculty for publishing papers in international and national reputed journals respectively.
- The college/ department take feedback of the faculties from the students which are used as evaluation in faculty appraisal.
- The minimum feedback for a faculty member from the students is 3.5 for 5 scale rating system. Any faculty who are scoring less than the institution standard, necessary corrective actions are followed.
  - Necessary advice by the Head of the department about handling and monitoring the class to the faculty.
  - Deputing faculty to the Faculty Development Program (FDP).
  - Counseling the faculty through counselors about building confidence in handling the subjects.
- ❖ College/ management also rewards the best faculty on the following factors
  - Student's feedback.
  - The faculty's self-appraisal report.

- HOD's evaluation.
- The marks given by faculty appraisal committee, headed by principal.
- The increments and promotions also add some effect to these scores.
- If the faculty achieves 90% - 100%, an appreciation from the management will be awarded along with a monetary benefit of increment.



**Figure. 5.8:** Faculty Assessment Process

## NEW HORIZON COLLEGE OF ENGINEERING

## ANNUAL PERFORMANCE APPRAISAL OF TEACHING STAFF

Academic Year: 2016– 17

Name : \_\_\_\_\_

Designation : \_\_\_\_\_

Department : ELECTRICAL AND ELECTRONICS ENGINEERING**NOTE:**

(This document consists of evaluation (i) of teacher by students (ii) by teachers themselves and (iii) of the concerned of Head, all considered together. This evaluation is conducted at the end of each academic year and forms an important document of performance evaluation)

**PERFORMANCE APPRAISAL: TEACHING STAFF****PART 'A'**

(Personal Particular)

Name : \_\_\_\_\_

Educational Qualifications : \_\_\_\_\_

(If you possess a Doctorate degree,  
state if you are a recognized guide): \_\_\_\_\_

Department : \_\_\_\_\_

Designation : \_\_\_\_\_

No of years served in NHCE till date: \_\_\_\_\_

Total Experience till date : \_\_\_\_\_

Any extraordinary achievement  
during the assessment period : \_\_\_\_\_

## Part 'B'

ACADEMIC DUTIES AND RESPONSIBILITIES ASSIGNED

	Subject Assigned	No. of Classes Planned	No. of Classes Conducted	Remarks
ODD Semester Theory				

	Laboratory	No. of Experiments Planned	No. of Experiments Conducted	Remarks
ODD Semester Laboratory				

	Subject Assigned	No. of Classes Planned	No. of Classes Conducted	Remarks
EVEN Semester Theory				



	Laboratory	No. of Experiments Planned	No. of Experiments Conducted	Remarks
EVEN Semester Laboratory				

**APPLICABLE TO FACULTIES HANDLED AUTONOMOUS**

	Subjects Assigned	Self Study / Sem / Student	Assignments / Semester	Quiz / Semester
ODD SEMESTER				

	Subjects Assigned	Self Study / Sem / Student	Assignments / Semester	Quiz / Semester
EVEN SEMESTER				

**PART 'C'**

A brief pen picture of self, not exceeding in 5 to 6 lines, highlighting the administrative and support activities entrusted

---

**PART D**

(Appraisal on a 5 point rating scale)

Note : Please put a tick in the appropriate rating

**1) Proper maintenance of course files and attendance registers (as per Check list) with necessary proof:**

25	20	15	10	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outstanding	Very Good	Good	Fair	Poor

**2) Proper valuation & maintenance of blue books of Students with necessary proof:**

15	12	9	6	3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outstanding	Very Good	Good	Fair	Poor

**3) Contribution in development of lab manuals, addition of new experiments and innovations and modernization of labs**

5	4	3	2	1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outstanding	Very Good	Good	Fair	Poor	NA

**4) Participation in co-curricular activities:**

5	4	3	2	1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outstanding	Very Good	Good	Fair	Poor

(Here contributions in areas like ISTE, forum activities, arranging guest lectures, symposiums/ seminars, Workshops, blood donation, sports and other fruitful activities need to be taken into consideration.)

**5) Initiatives taken towards counselling / Mentoring, guidance & overall character building of students:**

10	8	6	4	2
<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**6) Initiatives and interest shown in acquiring and disseminating new knowledge and skill through publications, books, attending seminars etc:**

**Publications – Minimum 02 per Academic Year**

5	4	3	2	1
<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**7) Initiatives and interest shown in acquiring and disseminating new knowledge and skill through publications, books, attending seminars etc:**

**FDP – Minimum 03 per Academic Year**

5	4	3	2	1
<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**8) Contribution in guiding students for completion of their projects:**

5	4	3	2	1
<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**9) Efforts made in attending continuing education programmes:**

5	4	3	2	1
<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**10) Initiative & involvement in curriculum development (Suggestions to improve the Curriculum):**

5	4	3	2	1
<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**11) Endeavours towards self development by upgrading/acquiring qualifications, gaining experience through professional activities, including membership of Professional societies.**

5	4	3	2	1
<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**12) Contribution in promoting institute industry, R&D activities & consultancy services (Minimum 02 Proposals per Academic Year).**

5	4	3	2	1
<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**13) The efforts made by individual to motivate & guide fellow faculty persons for acquiring higher education ⊗ Guidance for M Sc., Eng, Ph D etc) (Applicable only for PhD Holders)**

5	4	3	2	1
<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**14) Contribution in shouldering the administrative responsibilities pertaining to the institution**

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**15) Initiatives & involvement in the field of policy planning, monitoring evaluation & promotional activities at departmental & institutional level:**

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**16) Involvement in design & development of new academic/training programmes:**

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**17) Efforts made towards judicious utilization, management & development of institutional facilities.**

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**18) Involvement in planning & implementation of staff development activities:**

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

19) Initiative taken towards Societal Development (adult literacy drives & bringing awareness in the society towards hygiene/moral & ethical value etc):

5	4	3	2	1
<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

20) Effort made in promotion of entrepreneurship & job creation:

5	4	3	2	1
<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

21) Degree of integrity, efficiency, effectiveness & dedication shown during the course of discharging assigned responsibilities:

5	4	3	2	1
<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>	<input style="width: 100px; height: 30px;" type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**PART 'E'**

**Formula Used: (Grand Result % \* 5) / 100**

( Result Conversion Scale: 100% - 5, 80% - 4, 60% - 3, 40% - 2, 20% - 1, 0% - 0)

ODD Semester						
	Sub 1	Sub 2	Sub 3	Sub 4	Sub 5	Average
<b>Student Feedback</b>						
<b>Result</b>						
EVEN Semester						
	Sub 1	Sub 2	Sub 3	Sub 4	Sub 5	Average
<b>Student Feedback</b>						

<b>Result</b>						
<b>Grand Average</b>						
	<b>ODD</b>	<b>EVEN</b>	<b>Grand</b>			
<b>Student Feedback</b>						
<b>Result</b>						

**SUMMARY OF PART “D”**

- ❖ Total points awarded to staff: (D1) .....
- (Points Obtained / Maximum Points \*5)**
- ❖ Points awarded with 60% weight age: **(D1\*0.6)** .....

**SUMMARY OF PART “E”**

- ❖ Average of student Feedback and Result (E1)=
- ❖ 40% weight age based on grand average: **(E1\*0.4)**.....

**OVERALL SUMMARY**

- ❖ Annual performance index (D + E) = \_\_\_\_\_

**CORRESPONDING RANKING TAKING INTO ACCOUNT THE POINT SCORE AND CONVERTING IT TO TOTAL WEIGHTAGE OF 60%+40%= 100**

**Final Grade:**

- 4.5 – 5.0 : OUTSTANDING** **3.0 – 3.9 : Good**
- 4.0 – 4.4 : Very good** **2.0 – 2.9 : Fair**
- Less than 2: Poor**

Signature of faculty member  
Date:.....

---

Areas for improvement:

---

**Signature of HOD**  
**Date: .....**

**REMARKS & SIGNATURE OF PRINCIPAL**

---

**Signature of the Principal**  
**Date: .....**

**GUIDELINES TO HEADS OF DEPARTMENT FOR FILLING UP PERFORMANCE APPRAISAL FORM IN RESPECT OF TEACHING STAFF**

- 1. Every faculty person will be assessed on 21 items/areas of achievement on the pressure point rating scale. The concept of rating scale are given below:**
  - ❖ **Outstanding:** Excellent professional competence, unblemished track record, utmost efficiency & effectiveness, optimum human capacity utilization, punctuality, sincerity and dedication of highest order.

- ❖ **Very good:** Satisfactory professional competence with reasonable efficiency & effectiveness, reasonable extent of human capacity utilization and high order of punctuality, sincerity and dedication.
- ❖ **Good:** Just satisfactory performance with marginal level of efficiency and effectiveness. Medium human capacity utilization, punctuality, sincerity and dedication just adequate to deliver minimum satisfactory performance.
- ❖ **Fair:** Performance much below the level of expectations. Lack of efficiency and effectiveness, zeal and enthusiasm in performing his/her duties. Under utilization of capacity advertently or inadvertently (due to physical, mental disabilities)
- ❖ **Poor:** A deplorable performance devoid of initiative efforts, zeal or enthusiasm. A liability for the organization with either total lack of capacity, utilization to perform or advertently shirking from responsibilities.

## 2. PROCEDURE OF COMPUTATION OF GRADING

- ❖ 60% weight age of the total points awarded in performance appraisal.
- ❖ 40% weight age will be given for points awarded in the faculty evaluation by students both from both semesters.

## 3. CORRESPONDING RANKING TAKING INTO ACCOUNT THE POINT SCORE AND CONVERTING IT TO TOTAL WEIGHTAGE OF 60%+40%= 100

**4.5 – 5.0 : OUTSTANDING**

**4.0 – 4.4 : Very good**

**3.0 – 3.9 : Good**

**2.0 – 2.9 : Fair**

**Less than 2: Poor**

4. HOD's are required to fill up the performance appraisal proforma in presence of the concerned teaching staff by asking the staff explain item wise performance and their perceptions about the point grades. The HOD's after taking into account the submissions and expectations of the concerned staff & his own perceptions/ option about the capability of the staff, will put a tick on mark particular point scale. In case the ticked grade does not tally with the expectations of the staff, the reasons for variations must be told to staff by HOD in explicit terms.
5. The HODs are to ensure that assessment is based on the performance of the individual throughout the stipulated assessment period and not based on seasonal performance. Further biases all sorts and preferential treatment to selected ones should be avoided to make the appraisal system totally transparent and purposeful.
6. Both the HOD and the staff have to sign in the appraisal proforma at the appropriate place meant for the purpose. The employees should invariably sign even if they have some reservation on the assessment grades given by HOD's on certain items. They can mention the particular items where they have reservations/ disagreement below their signature at the appropriate place mentioned there in. These dissenting items/points or divergences will be discussed by the staff with Principal at appropriate time after seeking interview or if otherwise automatically called by Principal.
7. The decision of the Principal on all dissenting matters will be final & binding on employees. No further query or representations on the subject will be entertained at later stage.



**NEW HORIZON COLLEGE OF ENGINEERING**  
**Teaching Quality Evaluation Form**

Faculty Name \_\_\_\_\_ Date & Time \_\_\_\_\_  
 Subject \_\_\_\_\_ Sem/Sec \_\_\_\_\_  
 Topic \_\_\_\_\_  
 Length of Lecture \_\_\_\_\_ Conducted by \_\_\_\_\_

**Rating Key:** 1= Unsatisfactory    2=Fair    3 = Satisfactory    4=Very Good    5=Excellent

Attributes & Performance	Rating ( Circle)	Comments (if any)
Personality of the Teacher (Dress Code, Appearance, Mannerisms)	1 2 3 4 5	
Introduction of the Topic	1 2 3 4 5	
Content knowledge of the Teacher	1 2 3 4 5	
Organisation of the Content in a sequential order	1 2 3 4 5	
Presentation for the Content	1 2 3 4 5	
Use of the Audio Visual Aids	1 2 3 4 5	
Blackboard Work ( Handwriting, Neatness)	1 2 3 4 5	
Communication (Fluency in Language)	1 2 3 4 5	
Stimulus variation ( Body Language, Voice Modulation)	1 2 3 4 5	
Involvement of Students in the Classroom (Motivation & Reinforcement)	1 2 3 4 5	
Questioning Technique (Fluency in questioning)	1 2 3 4 5	
Classroom Management	1 2 3 4 5	
Approachability of the Teacher	1 2 3 4 5	
Attitude of the Teacher towards Teaching Profession	1 2 3 4 5	
Self Confidence level of the Teacher	1 2 3 4 5	

Average Rating \_\_\_\_\_

**ADDITIONAL COMMENTS:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Evaluator's Signature & Date \_\_\_\_\_

New Horizon College of Engineering  
STUDENT FEEDBACK \_\_\_\_\_

Faculty Name

DEPARTMENT

Dear Faculty,  
We have consolidated the student feedback for the \_\_\_\_\_ and find below the feedback received on the subject taught you. We advise you to discuss your ratings with HOD/immediate supervisor for further improvement.

SUB.CODE	a	b	c	d	e	f	g	h	i	j	k	l	m	n	Avg.Score
Overall Rating															
Earlier Overall Rating															

PARAMETERS	
a	Clarity in explaining the subject
b	Subject explained was easy to understand
c	Content quality is relevant and useful
d	Faculty answers to your queries/questions
e	Coverage of topic/subject is on time
f	The Concepts were explained with examples
g	Faculty preparation for the class
h	Faculty guidance for preparation of seminar, conference and exam
i	Punctuality of the faculty for the class
j	communicates distinctly and effectively
k	Treats students with respect and courtesy
l	Control of the Classroom by faculty
m	Relevance of assignments to the subject
n	Overall Satisfaction
Avg. Score	Average score of a to m

SCALE USED	
1	POOR
2	FAIR
3	GOOD
4	VERY GOOD
5	EXCELLENT
6	NA

n = No. of Responses

**5.9. Visiting/Adjunct/Emeritus Faculty etc.****(10)**

Adjunct faculty also includes Industry experts. Provide details of participation and contributions in teaching and learning and /or research by visiting/adjunct/Emeritus faculty etc. for all the assessment years:

- ❖ Provision of inviting/having visiting/adjunct/emmeritus faculty (1)
- ❖ Minimum 50 hours per year interaction with adjunct faculty from industry/retired professors etc. (9)  
(Minimum 50 hours interaction in a year will result in 3 marks for that year; 3 marks x 3 years = 9 marks)

Professor Emeritus is invited by the department to give lectures for content beyond syllabus and develop professional and personal competency in research, publications, innovation and teaching among faculties and students. Following are the list of Professor Emeritus during last three years.

**Table 5.9.1:** Visiting /adjunct/emmeritus Faculty members for year 2017-18.

S.No	Name of the person	Designation	No. of hours
1	Dr.Phillippe Calonnec	Emeritus Professor	Three Days/Week, Deputed by Govt. of France

**Table 5.9.2:** Visiting/adjunct/emmeritus faculty members for year 2016-17.

S.No	Name of the person	Designation	No. of hours
1	Dr.Jitendra R Raol	Emeritus Professor	22
2	Dr.R. Dharmalingam	Emeritus Professor	28

**Table 5.9.3:** Visiting/adjunct/emmeritus faculty members for year 2015-16.

S.No	Name of the person	Designation	No. of hours
1	Dr.Jitendra R Raol	Emeritus Professor	22
2	Dr.R. Dharmalingam	Emeritus Professor	28

### Outcome for appointment of the Emeritus /visiting /adjunct faculty

The following table gives improvements in some of the research related activities in the departments over the last 3 years.

**Table 5.9.4:** Outcome for appointment of the Emeritus /visiting /adjunct faculty

S.No	Particulars	2017-18	2016-17	2015-16
1.	Paper published by faculty	29	28	25
2.	Patents filed by faculty	10	3	0
3.	Research proposal submitted by faculty to Government funding agencies	10	8	0
4.	Funded proposal sanctioned	3	5	2
5.	Workshop/conference attended by the faculty	27	26	23
6.	Workshop/conference conducted in the department	3	6	5
7.	Patents filed by students	2	4	0
8.	Inter Institute Events attended by the Students	140	78	27

<b>CRITERION - 6</b>	<b>FACILITIES AND TECHNICAL SUPPORT</b>	<b>80</b>
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**6.1. Adequate and Well Equipped laboratories and Technical Support****(30)****Table 6.1: List of laboratories with technical manpower**

Sl. No	Name of the Laboratory	No. Of students per Setup (Batch size)	Name of the Important Equipment	Weekly Utilization Status(all the courses for which the lab is utilized)	Technical Manpower Support		
					Name of the Technical staff	Designation	Qualification
1	Analog Electronics Lab	3 Student per set and 20 Students in Batch	Signal generator, 20MHz Dual Trace CRO	Utilized	Mr. P.S. NarasimhaMurthy	Lab Instructor	Diploma in EEE
2	Logic Design Lab	3 Student per set and 20 Students in Batch	Digital IC Trainer Kit, Oscilloscope	Utilized	Mrs.K.Rajeshwari	Lab Instructor	B.E in EEE
3	Microcontroller Lab	3 Student per set and 20 Students in Batch	Microcontroller Kits, Signal generator, Oscilloscope	Utilized	Mr. P.S. NarasimhaMurthy	Lab Instructor	Diploma in EEE
4	Power Electronics Lab	3 Student per set and 20 Students in Batch	IGBT study unit, UJT firing circuit, Force Commutation study unit, DC chopper circuit	Utilized	Mrs.K. Rajeshwari	Lab Instructor	B.E in EEE
5	Measurements and Circuit Simulation Lab	3 Student per set and 20 Students in Batch	Transducers, ADC&DAC converter Trainer, Instrumentation amplifier trainer kit	Utilized	Mrs.Roopagandha	Lab Instructor	B.E in EEE
6	Transformers and Induction Machines Lab	3 Student per set and 20 Students in Batch	2kVA 440,240V/200V –Transformer, 3.5kVA, 750W, single phase Induction motor, 2.2kW, 1400rpm, 3 phase Induction motor	Utilized	Mr.B. Sudeendra Kumar	Foreman	B.E in EEE
7	DC Machines and Synchronous Machines Lab	3 Student per set and 20 Students in Batch	415 V 1500rpm A.C generator, 3.7kVA D.C motor, 4 point DC motor starter, 2KW DC compound Generator	Utilized	Mr.B. Sudeendra Kumar	Foreman	B.E in EEE
8	Control Systems Lab	3 Student per set and 20 Students in Batch	10A Box type Single phase Auto Transformer, DC Servo motor, 2 Phase AC Servomotor, Synchro Pair	Utilized	Mrs.Roopagandha	Lab Instructor	B.E in EEE

9	Relay and High Voltage Lab	3 Student per set and 20 Students in Batch	Relay, 50kV AC/DC Transformer, Rod gap apparatus, Control Panel, Transformer oil tester	Utilized	Mr.B.Sudeendra Kumar	Foreman	B.E in EEE
10	Power System Simulation Lab	1 Student per system and 20 Students in Batch	LED Monitor 18.5", Intel Core i7 Processor CPU	Utilized	Mr.B.K. Rajesh	Lab Instructor	Diploma in EEE

## 6.2 Additional facilities created for improving the quality of learning experience in laboratories (25)

1. Simulation Laboratory is provided with LAN facility where students as well as faculties can utilize it and get access to any journal and transaction paper and other technical articles.

2. Department library has 526 books (reference and texts) and research papers published by Students and faculty members.

Table 6.2: Additional Facility in the Laboratories

Sl. No	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students are expected to have enhanced learning	Relevance to POs/PSOs
1.	Electrical Circuit Theory	18.5" ViewSonic Monitors (19), Intel (R) Core (TMO I3-415 CPUs @3.50GHz)	To educate students with open access tools (Such as Pspice, MatLab, PWS,) used for Electrical and Electronics engineering	Utilized	Power System	PO1, PO2, PO3, PO4 PSOs: 1, 2
2.	Vmware IT Academy	Advanced hardware systems, servers, LEDs, electronic podium etc.	To educate students with Vmware technologies	Utilized	Modern IT skills	POs: PO1, PO4, PO5, PO9, PO10, PO12
3.	HP Center of Excellence	Advanced hardware systems, servers, LEDs, Electronic podiums	Students are educated with Big data analytics	Utilized	IT skills	POs: PO1, PO2, PO3, PO4, PO5, PO6, PO11, PO12
4.	Adobe Centre Of Excellence	Advanced hardware systems, servers, LEDs, electronic podium etc.	Students are educated with Adobe suit of products and services	Utilized	IT projects	POs: PO1, PO5, PO9, PO10, PO12

5.	Schneider Electric Centre Of Excellence	Training modules	Students are educated with Industrial automation, energy management	Utilized	Automation, Energy management	<b>POs:</b> PO1, PO2, PO3, PO4, PO5, PO6, PO12 <b>PSOs:</b> 1,2
6	QuEST Global	Industrial Internet of Things (IIoT)	Students are educated with Industrial Internet of Things (IIoT)	Utilized	Industrial Internet of Things (IIoT)	<b>POs:</b> PO1, PO5, PO9, PO10, PO12
7	CISCO Networking Academy	Cisco CCNA Routing and Switching	Students are educated with Cisco CCNA Routing and Switching	Utilized	Routing and Switching	<b>POs:</b> PO1, PO5, PO9, PO10, PO12

The figures below are the snapshots of additional facilities:



**Figure 6.2.1.Schneider Electric Centre of Excellence**



**HP Centre of Excellence on Big Data and Data Analysis**



**Figure.6.2.2. HP Centre of Excellence**



Figure.6.2.3. Adobe Digital Centre of Excellence



Figure.6.2.4. VMware IT Academy

### 6.3. Laboratories: Maintenance and Overall Ambiance

(10)

All the labs are well equipped and maintained

- Maintenance of the instruments are carried out on a monthly basis and also when necessary
- Calibration of the instruments are carried out annually
- Technical Staffs are well trained for maintenance
- Conditions of chairs/benches are in good condition
- Air Circulation for laboratories is good.
- Lighting in the laboratories is adequate.
- Window curtains are provided for good visibility.
- LED Projectors are provided for Simulation and ECT Laboratories.
- Conventional black boards in all laboratories and a white board in ECT laboratory.



**6.4. Project Laboratories****(5)**

- The students are given access to carry out their academic and research projects in the available laboratories.

**Table 6.4:** Project Laboratories

S.L No	Name of the Facility	Name of the Software /Equipments	Purpose	Faculty Incharge	Qualification
1.	Machine Laboratory	Electrical Machines	UG and Research Projects	Prof. D. Satish Kumar	B.E, M.Tech
2.	Microcontroller Laboratory	Protius, Keil	UG and Research Projects	Prof. S.Inbasakaran	B.E, M.Tech
3.	Simulation Laboratory	MiPower, Pspice MatLab	UG and Research Projects	Prof. J.Lithesh	B.E, M.Tech

**6.5. Safety Measures in Laboratories****(10)****Table 6.5:** Safety Measures in Laboratories

S.No	Name of Laboratory	Safety Measures
1	Analog Electronics Lab	<ul style="list-style-type: none"> <li>Do's and Don'ts board</li> <li>Electrical Wires are protected by MCB,RCBO and fuses</li> <li>First aid Kit</li> <li>Fire Extinguisher</li> <li>Safety glasses and gloves</li> <li>Proper earthing</li> </ul>
2	Logic Design Lab	
3	Microcontroller Lab	
4	Power Electronics Lab	
5	Measurements and Circuit Simulation Lab	
6	Transformers and Induction Machines Lab	
7	DC Machines and Synchronous Machines Lab	
8	Control Systems Lab	
9	Relay and High Voltage Lab	
10	Power System Simulation Lab	

The sample snapshots of all the laboratories are as shown in the Figures.



Analog Electronics Lab



Logic Design Lab



Microcontroller Lab



Power Electronics Lab



**Measurements and Circuit Simulation Lab**



**Transformers and Induction Machines Lab**



**DC Machines and Synchronous Machines Lab**



**Control Systems Lab**



**Relay and High Voltage Lab**



**Power System Simulation**

CRITERION - 7

CONTINUOUS IMPROVEMENT

50

**7.1 Actions taken based on the results of evaluation of each of the POs & PSOs (20)**

Identify the areas of weaknesses in the program based on the analysis of evaluation of POs & PSOs attainment levels. Measures identified and implemented to improve POs & PSOs attainment levels for the assessment years.

**POs - Attainment Levels and Actions for improvement – LYG (2017)****Table 7.1.1:** POs Attainment Levels and Actions for Improvement –LYG (2017)

POs	Target Level	Attainment Level	Observation
<b>PO1. Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems in Electrical and Electronics Engineering.			
PO1	2.47	2.48	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Awareness of Mathematics and Engineering fundamentals in Engineering problems</li> </ul>
<b>Action 1:</b> Subsequent coaching classes were conducted beyond the regular planned classes.			
<b>Action 2:</b> Bridge courses were conducted before the semester beginning for 1 <sup>st</sup> year subjects.			
<b>PO2. Problem analysis:</b> Identify, formulate, review research literature, and analyse complex engineering problems in Electrical and Electronics Engineering reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	2.36	2.38	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Enhanced ability to analyse the assigned problems is desirable</li> </ul>
<b>Action 1:</b> Incorporation of more numerical problems during their regular lectures			
<b>Action 2:</b> Coaching classes were conducted for numerical courses beyond the regular planned classes.			
<b>PO3. Design/development of solutions:</b> Design solutions for complex engineering problems and design system components or processes of Electrical and Electronics Engineering that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.			
PO3	2.21	2.24	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Design solutions for Engineering problems</li> </ul>
<b>Action 1:</b> Conducted expert talk on ARM Processor by Mr. Phani Kumar, Project Manager, INTEL Corporation on 3/4/17			
<b>Action 2:</b> Workshop on PLC Automation was conducted by Mr. Mahesh Technical Engineer, Livewire on 2/3/17			

**Action 3:** Expert talk delivered on Simulation of Estimation Algorithms on 23/3/17 by Ms.Priyanka Kole, Professor/EEE, NHCE

**Action 4:** Incorporation of lab sessions over and above the curriculum for practical based subjects like Analog & Digital Electronics, Electrical Machines and Micro Controller.

**PO4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments in Electrical and Electronics Engineering, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO4

2.08

2.13

- Target achieved
- Better exposure on Complex problem analysis

**Action 1:** Workshop on Industrial Automation on 9/3/17 was conducted by Mr.Jijo, Engineer Axis Global Institute of Information Technology (AGIIT)

**Action 2:** National Conference conducted on Recent Technologies in Electrical and Electronics on 19/4/17 to support the tradition of problem analysis and solution

**Action 3:** Invited Talk delivered on Introduction to Non-linear System Analysis by Dr. K. Vinoth Kumar, Senior Scientist, ABB Ltd, Chennai on 14/9/16

**Action 4:** Conducted Technical Project Context TechHorizon - 2017 on 27/5/17 to nurture the ability to investigate and implement complex electrical and electronic systems

**PO5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities in Electrical and Electronics Engineering with an understanding of the limitations.

PO5

1.88

1.94

- Target achieved
- Usage of additional software's latest testing equipment

**Action 1:**Expert lecture on Materials for special applications and Modern Techniques for Material Science in Electrical Engineering was conducted on 21/10/16 to 22/10/16 by Dr. K Santhy, Head Material Science Engg, Care group of institutions, Trichy.

**Action 2:**Expert talk delivered on Trends in High Voltage by Dr. A. N Ravi, Retired Scientist, Central Power Research Institute on 28/4/17

**Action 3:**Conducted workshop on REVIT-MEP and PRIMAVERA on 30/3/17 by Mr. Mathew Thomas, Director Educadd Learning Solutions

**Action 4:**Workshop on Circuit Drafting Using Electrical AutoCAD was conducted on 1/2/17

**Action 5:**Workshop on Aurdino was conducted on 23/10/16

**PO6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice in Electrical and Electronics Engineering.

PO6

1.69

1.76

- Target achieved
- Investigation of problems faced by society was addressed.

**Action 1:** Real-world projects have been carried out by the students of the Department like Modernisation of Indian Agriculture , Global Industrial Process Monitoring etc for environmental up gradation and to develop the societal need

**Action 2:** Expert talk on Industrial Networks on IP Internet Protocol(Cisco Networking) was conducted by Mr.Sree Ram Gopal, Founder/Architect,Stack Solutions on 8/9/16

**Action 3:** Invited Talk on Current Status of Wind Generation in India was conducted by Ms Roshini Director, Zeonics Systech Pvt Ltd, Bangalore on 11/5/17

**PO7. Environment and sustainability:** Understand the impact of the professional engineering solutions of Electrical and Electronics Engineering in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.

PO7

1.68

1.76

- Target achieved
- Impact of engineering solutions in society was addressed.

**Action 1:** Workshop on Solar Energy Harnessing was conducted by Ms.Roshni Sholapurwala, (Alumini, NHCE) on 24/03/17.

**Action 2:** Invited talk on Construction and Operating Principles Numerical Relays was conducted by Hemanth Maddhula, Hardware Engineer, Aruba Networks Pvt. Ltd. on 10/5/17

**Action 3:** Conducted expert talk on Application of Signals and Systems by Mr.Satish, Professor/EEE, NHCE on 8/8/16

**PO8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO8

1.60

1.67

- Target achieved
- Ethical principles are inculcated

**Action1:** Conducted an Expert talk on Life Skills and Opportunities in defence for Electrical Engineers by Mr.Pawan, DYSP, Defence Ministry on 15/10/16

**PO9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO9

1.74

1.83

- Target achieved
- Ability to co-ordinate and team management through conduction of projects

**Action 1:** Industrial Visit was arranged to National Power Training Institute on 11/5/17 – 12/5/17

**Action 2 :** Industrial Visit was done to Varahi Under ground Hydrel Power Plant on 15/4/16 and Madhavamantri Sattagala Mini Hydrel Power Plant on 2/4/16

**Action 3:** Technical Project Contest Tech Horizon- 2017 was conducted on 27/5/17 to improve the self-esteem and leadership quality in technical disciplines

**Action 4:** Projects pertaining to the latest problems were analysed with frequent interactions from industrial experts and to distribute the work within the team towards its execution of through academic projects

**PO10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

<b>PO10</b>	<b>1.73</b>	<b>1.83</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Ability to present and convey the latest engineering trends</li> </ul>
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**Action1:** NPTEL Video Lecture on Communication skills by Dr. T. Ravichandran, IIT Kanpur was demonstrated to the students

**Action2:** Seminars related to latest Engineering topics were conducted pertaining to respective subjects

**Action 3:** BEC (Business English Communication) course was offered to all the students

**PO11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

<b>PO11</b>	<b>1.66</b>	<b>1.73</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Ability to plan and execute projects</li> </ul>
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**Action 1:** Conducted undergraduate project contest, Tech-Horizon wherein students design the project development cycle including budgeting

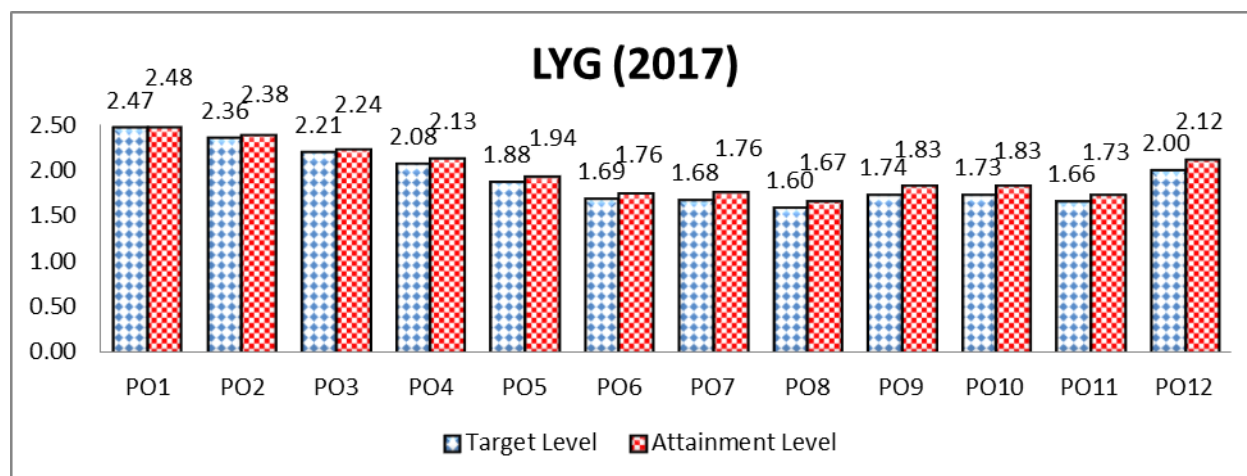
**Action 2:** National Technical FEST- ElectroHorizon'17 conducted on 13/4/17 wherein students organized various events for other college students

**PO12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

<b>PO12</b>	<b>2.00</b>	<b>2.12</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Ability for lifelong learning demonstrated by students</li> </ul>
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**Action 1:** Expert talk conducted on The Opportunities in Higher Studies Abroad by Smudranil Chatterjee on 27/9/16

**Action 2:** Conducted an Expert talk on Life Skills and Opportunities in defence for Electrical Engineers by Mr.Pawan, DYSP, Defence Ministry on 15/10/16



**Figure.7.1.1:** POs attainment level for LYG (2017)

#### PSOs - Attainment Levels and Actions for improvement – LYG (2017)

PSOs	Target Level	Attainment Level	Observation
<b>PSO1:</b> Graduates will be able to solve real life problems of Power system and Power Electronics using Mi Power, PSPICE and MATLAB software tools and hardware.			
<b>PSO1</b>	<b>2.13</b>	<b>2.15</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Exposure on problem analysis using hardware and software tools</li> </ul>
<p><b>Action 1:</b> Expert talk on Trends in High Voltage by Dr. A. N Ravi, Retired Scientist, Central Power Research Institute was conducted on 28/4/17</p> <p><b>Action 2:</b> Workshop on Industrial Automation on 9/3/17 was conducted by Mr.Jijo, Engineer Axis Global Institute of Information Technology (AGIIT)</p> <p><b>Action 3:</b> Conducted workshop on REVIT-MEP and PRIMAVERA on 30/3/17 by Mr. Mathew Thomas, Director Educadd Learning Solutions</p> <p><b>Action 4:</b> Workshop on Circuit Drafting Using Electrical AutoCAD was conducted on 1/2/17</p> <p><b>Action 5:</b> Workshop on Aurdino was conducted on 23/10/16</p> <p><b>Action 6:</b> Projects pertaining to the latest problems were analysed with frequent interactions from Industrial experts and to distribute the work within the team towards its execution of through academic projects</p>			
<b>PSO2:</b> Graduates will be able to develop and support systems based on renewable and sustainable Energy sources			



<b>PSO2</b>	<b>1.90</b>	<b>1.94</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Enhanced exposure on concepts and techniques adopted in Power Plants and industries</li> </ul>
<p><b>Action 1:</b> Workshop on Solar Energy Harnessing was conducted by Ms.Roshni Sholapurwala, (Alumini,NHCE) Director Zeonics System Defence &amp; Aerospace Engineering Pvt Ltd on 24/3/17</p> <p><b>Action 2:</b> Expert lecture on Materials for special applications and Modern Techniques for Material Science in Electrical Engineering was conducted on 21/10/16 to 22/10/16 by Dr. K Santhy, Head Material Science Engg, Care group of institutions, Trichy</p> <p><b>Action 3:</b> Industrial Visit was arranged to National Power Training Institute on 11/5/17 – 12/5/17</p> <p><b>Action 4 :</b>Industrial Visit was done to Varahi Underground Hydel Power Plant on 15/4/16 and Madhavamantri Sattigala Mini Hydel Power Plant on 2/4/16</p> <p><b>Action 5:</b> Conducted expert talk on ARM Processor by Mr. Phani Kumar, Project Manager, INTEL Corporation on 3/4/17</p> <p><b>Action 6:</b> Workshop on PLC Automation was conducted by Mr.Mahesh Technical Engineer, Livewire on 2/3/17</p>			

### POs - Attainment Levels and Actions for improvement – LYGM1 (2016)

Table 7.1.2: POs Attainment Levels and Actions for Improvement – LYG(2016)

POs	Target Level	Attainment Level	Observation
<p><b>PO1. Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems in Electrical and Electronics Engineering.</p>			
<b>PO1</b>	<b>2.39</b>	<b>2.47</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Enhancement in the ability to solve and analyse the numerical</li> </ul>
<p><b>Action 1:</b> Subsequent coaching classes were conducted beyond the regular planned classes to address the lack of fundamental concepts</p> <p><b>Action 2:</b> Bridge courses were conducted before the semester beginning for 1<sup>st</sup> year subjects.</p>			
<p><b>PO2. Problem analysis:</b> Identify, formulate, review research literature, and analyse complex engineering problems in Electrical and Electronics Engineering reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.</p>			

<b>PO2</b>	<b>2.30</b>	<b>2.36</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Experimental analysis of the assigned problems</li> </ul>
<p><b>Action 1:</b> Incorporation of more numerical during their regular lectures</p> <p><b>Action 2:</b> Coaching classes were conducted for numerical subjects beyond the regular planned classes.</p>			
<p><b>PO3. Design/development of solutions:</b> Design solutions for complex engineering problems and design system components or processes of Electrical and Electronics Engineering that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.</p>			
<b>PO3</b>	<b>2.16</b>	<b>2.21</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Design solutions for Engineering problems</li> </ul>
<p><b>Action 1:</b> Conducted expert talk on PCB Design Training by Mr.Kotesh M, Indian Tech- Keys on 5/3/16</p> <p><b>Action 2:</b> Workshop on REC Mechanism and RE Integration was conducted on 4/11/15.</p> <p><b>Action 3:</b> Incorporation of lab sessions over and above the curriculum for practical based subjects like Control System, Electrical Machines and Micro Controller.</p>			
<p><b>PO4. Conduct investigations of complex problems:</b> Use research-based knowledge and research methods including design of experiments in Electrical and Electronics Engineering, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.</p>			
<b>PO4</b>	<b>2.02</b>	<b>2.08</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Extend the ability to experimentally analyze the problems through relevant software's</li> </ul>
<p><b>Action 1:</b> Conducted Workshop on PLC/SCADA on 17/2/16</p> <p><b>Action 2:</b> Workshop on ETAP on 10/10/15 was conducted by Mr. Roland, Application Engineer, Wartens Technologies, Industrial Automation Training Institute</p> <p><b>Action 3:</b> Invited talk on Partial Discharge Measurements was delivered by Dr. Ravi Kumar, Scientist F,CPRI on 6/11/15</p> <p><b>Action 4:</b> Conducted Technical Project Context Techhorizon 2016 on 21/5/16 to nurture the ability to investigate and implement complex electrical and electronic systems</p>			
<p><b>PO5. Modern tool usage:</b> Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities in Electrical and Electronics Engineering with an understanding of the limitations.</p>			

<b>PO5</b>	<b>1.85</b>	<b>1.88</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Usage of additional software's latest testing equipment</li> </ul>
<p><b>Action 1:</b> Expert lecture on Renewable Energy, Online and Offline UPS was conducted on 10/10/15 by Mr.Sreekanth Akula, Power One Microsystems Pvt. Ltd.</p> <p><b>Action 2:</b> Workshop on Technical Training on PSIM was conducted on 11/4/16</p> <p><b>Action 3:</b> Workshop on Introduction to Maple Sim Software was conducted on 7/11/15</p> <p><b>Action 4:</b> Conducted workshop on REVIT - MEP on 15/4/16 by Ms. Anjali Jose, Sr. Faculty, Educad Learning Solutions Pvt Ltd</p> <p><b>Action 5:</b> Invited talk delivered on MISRA C++ by Prof. Santosh Kumar, Assistant Professor, EPCET on 29/3/16.</p>			
<p><b>PO6. The Engineer and Society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice in Electrical and Electronics Engineering.</p>			
<b>PO6</b>	<b>1.65</b>	<b>1.69</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Investigation of problems faced by society was addressed.</li> </ul>
<p><b>Action 1:</b> Real-world projects have been carried out by the students of the Department like Green energy harvesting, Power generation etc for environmental up gradation and to develop the societal need</p> <p><b>Action 2:</b> Expert talk conducted on SCADA by Ms.Savitha, Asst. Engineer, Centre for Development of Advanced Computing on 20/4/16</p> <p><b>Action 3:</b> Invited talk delivered on Introduction to HVDC transmission Mr.Audithya K Nilekani, Quality Control on 7/10/15</p>			
<p><b>PO7. Environment and sustainability:</b> Understand the impact of the professional engineering solutions of Electrical and Electronics Engineering in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.</p>			
<b>PO7</b>	<b>1.62</b>	<b>1.68</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Projects related to economical and environmental contexts were planned for final year.</li> </ul>
<p><b>Action 1:</b> Expert lecture talk conducted on Smart Grid on 4/11/15 by V Suresh Babu, Asst Director, NPTI</p> <p><b>Action 2:</b> Executed VIII semester student projects with relevance to Environmental context</p> <p><b>Action 3:</b> Invited talk delivered on Design of UPS for Residential Installation on 21/4/16 by Kiran S, Module Lead, Mistral Solutions Pvt. Ltd, Bangalore.</p>			
<p><b>PO8. Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</p>			

<b>PO8</b>	<b>1.51</b>	<b>1.60</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Ethical principles are inculcated</li> </ul>
<p><b>Action1:</b> Conducted an Expert talk on Life Skills for Engineers by Dr. Sheelan Mishra, Professor &amp; HOD, MBA, NHCE on 23/9/15</p>			
<p><b>PO9. Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.</p>			
<b>PO9</b>	<b>1.70</b>	<b>1.74</b>	<ul style="list-style-type: none"> <li>➤ Target Achieved</li> <li>➤ Need for co-ordination and team management through conduction of projects</li> </ul>
<p><b>Action 1:</b> Industrial Visit was arranged to National Power Training Institute on 2/5/16  <b>Action 2 :</b> Industrial Visit was done to Varahi Underground Hydrel Power Plant on 15/10/15  <b>Action 3:</b> Technical Project Contest Tech Horizon- 2016 was conducted on 21/5/16 to improve the self-esteem and leadership quality in technical disciplines  <b>Action 4:</b> :Participation in Conferences/Seminars/Workshops/Symposiums  <b>Action 5:</b> Participation in various extra-curricular activities in other colleges and Promotion of various clubs and activities  <b>Action 6:</b> Projects pertaining to the latest problems were analysed with frequent interactions from industrial experts and to distribute the work within the team towards its execution of through academic projects</p>			
<p><b>PO10. Communication:</b> Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.</p>			
<b>PO10</b>	<b>1.70</b>	<b>1.73</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Ability to present and convey the latest engineering trends</li> </ul>
<p><b>Action1:</b> Classes related to communication skills were conducted as per plan during the respective periods  <b>Action2:</b> Seminars related to latest Engineering topics were conducted pertaining to respective subjects  <b>Action 3:</b> BEC (Business English Communication) course was offered to all the students</p>			
<p><b>PO11. Project management and finance:</b> Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.</p>			
<b>PO11</b>	<b>1.58</b>	<b>1.66</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Ability to plan and execute projects</li> </ul>

**Action1:** Conducted undergraduate project contest, TechHorizon’16 and technical fest, Electrogreen’16 wherein students design the project development cycle including budgeting

**Action 2 :** Conducted an expert talk on Entrepreneurship in Electrical Engineering on 16/11/15 by Mr. Atul Sharma, IOTACELL

**PO12.** Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

<b>PO12</b>	<b>2.00</b>	<b>2.00</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Ability for lifelong learning demonstrated by students</li> </ul>
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**Action 1:** Expert talk conducted on Institution offering higher studies Mr.Akash Sarkar , Vincisive Solutions Pvt Ltd on 1/10/15

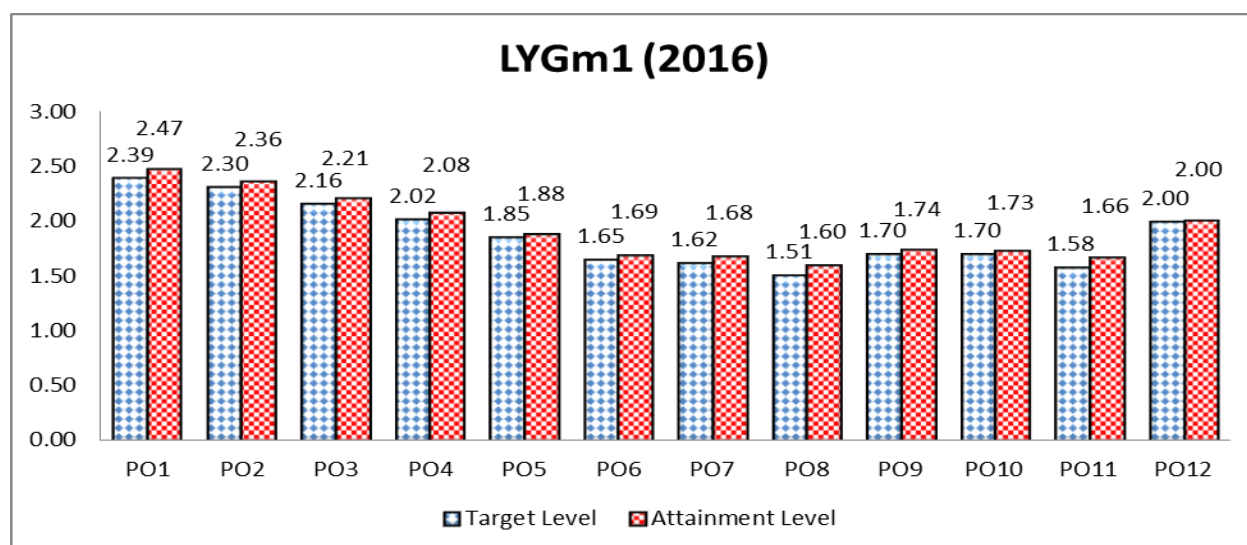


Figure 7.1.2: POs attainment level for LYGm1(2016)

**PSOs - Attainment Levels and Actions for improvement – (2015-16)**

PSOs	Target Level	Attainment Level	Observation
<b>PSO1:</b> Graduates will be able to solve real life problems of Power system and Power Electronics using Mi Power, PSPICE and MATLAB software tools and hardware.			
<b>PSO1</b>	<b>2.05</b>	<b>2.13</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Exposure on problem analysis using hardware and software tools</li> </ul>

**Action 1:** Conducted Workshop on PLC/SCADA on 17/2/16

**Action 2:** Workshop on ETAP on 10/10/15 was conducted by Mr. Roland, Application Engineer, Wartens Technologies, Industrial Automation Training Institute

**Action 3:** Workshop on Technical Training on PSIM was conducted on 11/4/16

**Action 4:** Workshop on Introduction to Maple Sim Software was conducted on 7/11/15

**Action 5:** Conducted workshop on REVIT - MEP on 15/4/16 by Ms. Anjali Jose, Sr. Faculty, Educad Learning Solutions Pvt Ltd

**Action 6:** Expert talk conducted on SCADA by Ms.Savitha, Asst. Engineer, Centre for Development of Advanced Computing on 20/4/16

**PSO2:** Graduates will be able to develop and support systems based on renewable and sustainable Energy sources

<b>PSO2</b>	<b>1.81</b>	<b>1.90</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Enhanced exposure on concepts and techniques adopted in Power Plants and industries</li> </ul>
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**Action 1:** Expert lecture on Renewable Energy, Online and Offline UPS was conducted on 10/10/15 by Mr.Sreekanth Akula, Power One Microsystems Pvt. Ltd.

**Action 2:** Expert lecture talk conducted on Smart Grid on 4/11/15 by V Suresh Babu, Asst Director, NPTI

**Action 3:** Invited talk delivered on Design of UPS for Residential Installation on 21/4/16 by Kiran S, Module Lead, Mistral Solutions Pvt. Ltd. Bangalore

**Action 4:** Workshop on REC Mechanism and RE Integration was conducted on 4/11/15

**Action 5:** Industrial Visit was arranged to National Power Training Institute on 2/5/16

**Action 6 :** Industrial Visit was done to Varahi Underground Hydel Power Plant on 15/10/15

### POs - Attainment Levels and Actions for improvement – LYGM2 (2015)

**Table 7.1.3:** POs Attainment Levels and Actions for Improvement – (2014-15)

POs	Target Level	Attainment Level	Observation
<b>PO1. Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems in Electrical and Electronics Engineering.			
<b>PO1</b>	<b>2.30</b>	<b>2.39</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Awareness of Mathematics and Engineering fundamentals in Engineering problems</li> </ul>

**Action 1:** Subsequent coaching classes were conducted beyond the regular planned classes.

**Action 2:** Bridge courses were conducted before the semester beginning for 1<sup>st</sup> year subjects.

**PO2. Problem analysis:** Identify, formulate, review research literature, and analyse complex engineering problems in Electrical and Electronics Engineering reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO2

2.30

2.30

- Target achieved
- Enhanced ability to analyse the assigned problems is desirable

**Action 1:** Incorporation of more numerical during their regular lectures

**Action 2:** Coaching classes were conducted for numerical subjects beyond the regular planned classes.

**PO3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes of Electrical and Electronics Engineering that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO3

2.00

2.16

- Target achieved
- Design solutions for Engineering problems

**Action 1:** Conducted expert talk on Software development on 1/9/14 by ShyamKrishnan,V.M Core EL Technologies.

**Action 2:** Conducted expert talk on 2G- based secure Mifare RFID Device on 5/4/14 by KiranKumar Kanik Raj.

**Action 3:** Incorporation of lab sessions over and above the curriculum for practical based subjects like Power Electronics, Electrical Machines and Micro Controller.

**PO4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments in Electrical and Electronics Engineering, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO4

2.00

2.02

- Target achieved
- Better exposure on Complex problem analysis

**Action1:**Workshop on Generator Motor Protection on 18/8/14 was conducted by Naveen, High Voltage India Pvt Ltd

**Action 2:**National Technical Students' Symposium –NTSS'14 on Emerging Trends in Engineering and Technology on 26/4/17 to support the tradition of problem analysis and solution

**PO5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities in Electrical and Electronics Engineering with an understanding of the limitations.

<b>PO5</b>	<b>1.50</b>	<b>1.85</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Usage of additional software's latest testing equipment</li> </ul>
<p><b>Action 1:</b> Expert talk conducted on Automation in Industry on 29/9/14 by Divakar. H.N</p> <p><b>Action 2:</b> Workshop on PLC &amp; SCADA and C Programming was conducted by EduCADD Learning Solutions on 7/6/14</p> <p><b>Action 3:</b> Expert talk conducted on Advanced Energy Saving Technique in large scale industries on 22/2/14 by Rajendra Prasad</p> <p><b>Action 4:</b> Training Program on Despatch training Simulator by NPTI on 12/9/14</p>			
<p><b>PO6. The Engineer and Society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice in Electrical and Electronics Engineering.</p>			
<b>PO6</b>	<b>1.50</b>	<b>1.65</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Investigation of problems faced by society was addressed.</li> </ul>
<p><b>Action 1:</b> Real-world projects have been carried out by the students of the Department like Water pumping using low HP motors, smart home energy management etc for environmental up gradation and to develop the societal need</p> <p><b>Action 2:</b> Expert talk on Scope of new avenue growth in Engineering on 22/3/14 by Mr.Jayakumar.P</p>			
<p><b>PO7. Environment and sustainability:</b> Understand the impact of the professional engineering solutions of Electrical and Electronics Engineering in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.</p>			
<b>PO7</b>	<b>1.50</b>	<b>1.62</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Projects related to economical and environmental contexts were planned for final year</li> </ul>
<p><b>Action 1:</b> Expert lecture conducted on Employment Orientation Courses in Power System on 25/9/14 by M.N.Murthy,NPTI</p> <p><b>Action 2:</b> Aided students to carry out real world projects for environmental and societal up gradation.</p>			
<p><b>PO8. Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</p>			
<b>PO8</b>	<b>1.50</b>	<b>1.51</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Planned Expert lecture on professional ethics and managerial skills</li> </ul>
<p><b>Action1:</b> Conducted an Expert talk on Life Skills for Engineers by Dr. Sheelan Mishra, Professor &amp; HOD, MBA, NHCE on 22/4/15</p>			
<p><b>PO9. Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.</p>			



<b>PO9</b>	<b>1.50</b>	<b>1.70</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Ability to co-ordinate and team management through conduction of projects</li> </ul>
<p><b>Action 1:</b> Industrial Visit was arranged to Sharavathi hydel power plant and Varahi Power plant on 26/9/14 – 28/9/14</p> <p><b>Action 2 :</b> Industrial Visit was done to Cauvery Hydro Energy Power Plant on 22/3/14</p> <p><b>Action 3:</b> Projects pertaining to the latest problems were analysed with frequent interactions from industrial experts and to distribute the work within the team towards its execution of through academic projects</p>			
<p><b>PO10. Communication:</b> Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.</p>			
<b>PO10</b>	<b>1.50</b>	<b>1.70</b>	<ul style="list-style-type: none"> <li>➤ Target Achieved</li> <li>➤ Awareness on effective communication on latest engineering trends</li> </ul>
<p><b>Action1:</b> Classes related to communication skills were conducted as per plan during the respective periods</p> <p><b>Action2:</b> Seminars related to latest Engineering topics were conducted pertaining to respective subjects</p> <p><b>Action 3:</b> BEC (Business English Communication) course was offered to all the students</p>			
<p><b>PO11. Project management and finance:</b> Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.</p>			
<b>PO11</b>	<b>1.50</b>	<b>1.58</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Ability to plan and execute projects</li> </ul>
<p><b>Action 1:</b>Conducted undergraduate project contest, Tech-Horizon wherein students design the project development cycle including budgeting</p> <p><b>Action 2:</b> National Technical FEST- ElectroGreen'14 conducted on 1/3/14 wherein students Organized various events for other college students.</p>			
<p><b>PO12. Life-long learning:</b> Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.</p>			
<b>PO12</b>	<b>1.50</b>	<b>2.00</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Ability for lifelong learning demonstrated by students</li> </ul>

**Action 1:** Conducted training Program for International exams like GMAT,GRE,IELTS and also helpful for national and state level entrance exams like the CAT,MAT on 28/8/14 by Suanada Khosla, Triumphant Institute of Management Education Pvt Ltd.

**Action 2 :**Conducted Technical Workshop for GATE 2015, Job opportunities in PSU’s on 9/8/14 by Pramod Kumar, T.I.M.E

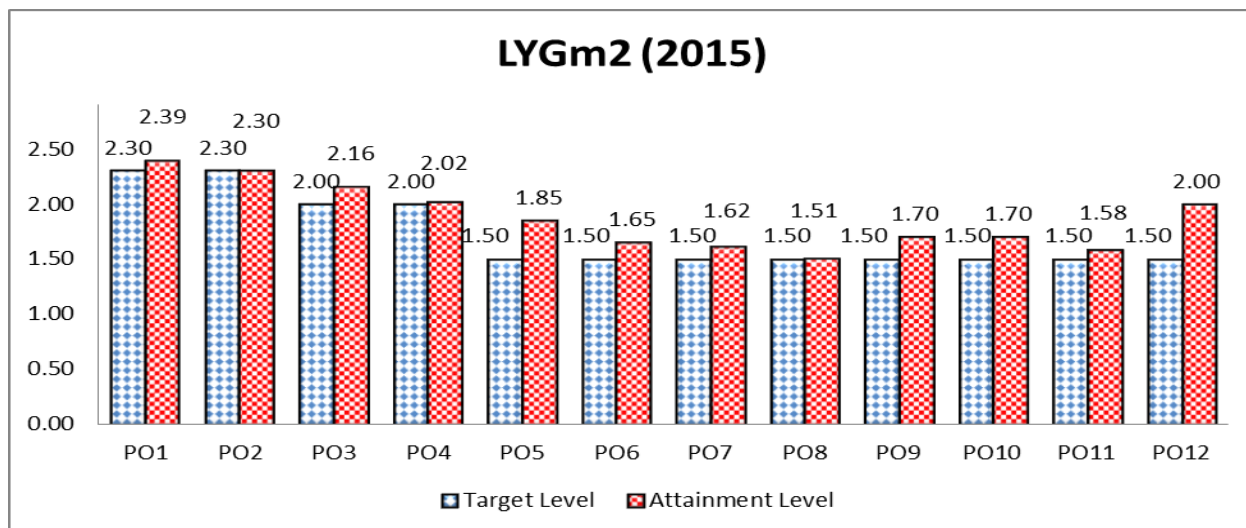


Figure 7.1.3: POs attainment level for (2014-15)

**PSOs - Attainment Levels and Actions for improvement – LYGm2 (2015)**

PSOs	Target Level	Attainment Level	Observation
<b>PSO1:</b> Graduates will be able to solve real life problems of Power system and Power Electronics using MiPower, PSPICE and MATLAB software tools and hardware.			
<b>PSO1</b>	<b>2.0</b>	<b>2.05</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Exposure on problem analysis using hardware and software tools</li> </ul>
<b>Action 1:</b> Workshop on Generator Motor Protection on 18/8/14 was conducted by Naveen, High Voltage India Pvt Ltd			
<b>Action 2:</b> Expert talk conducted on Automation in Industry on 29/9/14 by Divakar. H.N			
<b>Action 3:</b> Workshop on PLC & SCADA and C Programming was conducted by EduCADD Learning Solutions on 7/6/14			
<b>Action 4:</b> Training Program on Despatch training Simulator by NPTI on 12/9/14			
<b>Action 5:</b> Expert talk on Scope of new avenue growth in Engineering on 22/3/14 by Mr.Jayakumar.P			

**PSO2:** Graduates will be able to develop and support systems based on renewable and sustainable Energy sources

<b>PSO2</b>	<b>1.50</b>	<b>1.81</b>	<ul style="list-style-type: none"> <li>➤ Target achieved</li> <li>➤ Enhanced exposure on concepts and techniques adopted in Power Plants and industries</li> </ul>
<p><b>Action 1:</b> Conducted expert talk on Software development on 1/9/14 by ShyamKrishnan,V.M Core EL Technologies</p> <p><b>Action 2:</b> Conducted expert talk on 2G- based secure Mifare RFID Device on 5/4/14 by KiranKumar Kanik Raj</p> <p><b>Action 3:</b> Expert talk conducted on Advanced Energy Saving Technique in large scale industries on 22/2/14 by Rajendra Prasad</p> <p><b>Action 4:</b> Industrial Visit was arranged to Sharavathi hydel power plant and Varahi Power plant on 26/9/14 – 28/9/14</p> <p><b>Action 5 :</b> Industrial Visit was done to Cauvery Hydro Energy Power Plant on 22/3/14</p>			

## 7.2 Academic Audit and actions taken thereof during the period of Assessment (10)

(Academic Audit system/process and its implementation in relation to Continuous Improvement)

Academic audits are conducted as per ISO 9001:2008 standard in order to monitor and evaluate the teaching learning process. It consists of internal audit and external audits. Audits are conducted for teaching process, laboratory maintenance and departmental activities.

### Feedback from Students – Course End Survey

- A questionnaire about the course is prepared by the course coordinator and the program coordinator for the students. This serves as a feedback at end of the semester to gauge the degree of attainment of POs and PSOs.

### Feedback from students – Exit Survey

- A questionnaire is prepared by the program coordinator, and given to students at end of the program to get their feedback of the program. The results are analyzed to gauge the degree of attainment of program outcomes.

### Feedback from parents

- The Program coordinator will collect the feedback from parents about their experience and their wards opinion on the program. This activity is carried out once in every semester for the betterment of the system.

**Feedback from the recruiters**

- A questionnaire is prepared by the program coordinator and is given to the recruiters during recruitment process. Their feedback is analyzed to gauge the degree of attainment of program outcomes

**Feedback from the academic/industry experts**

- Curriculum reviews by Industry/Academic experts provide a broad-based internal and external feedback regarding the relevance and organization of a program's curriculum. Their feedback serves as an evidence for assessing significant changes (individual course competencies) required within a program when the change is inevitable.

**Feedback from alumni**

- A questionnaire is prepared by the program and course coordinator and is given to the alumni. It will be done once in every year on August 15 to gauge the degree of attainment of POs and PSOs.

**Open ended questions/experiments in the lab**

- Open ended questions are designed for which students formulate meaningful solutions using subject knowledge. These open-ended questions tend to be more objective and less leading than closed-ended questions.

**Role of Lab Advisor**

- To ensure quality and consistency of lab conduction, lab advisors are formed for each lab. The key responsibilities of lab advisor involve,
  - Ensure the uniqueness in conduction of lab for all the batches in the same semester by convening frequent meetings.
  - Guiding the faculties in conduction of lab.
  - Frequent meeting with Foreman to ensure status of equipment.
  - Collecting feedback from the group of students belongs to respective batch to ensure proper understanding of lab.
  - The point of concern to be reported to the HOD immediately to take corrective action.

### Grievance Redressal Cell

- Academic grievances of students are attended to through meetings conducted each semester chaired by HOD with senior faculty as members. Alternately students can email to HOD exclusively for grievances.

**Faculty audit:** The following records of the faculty members are verified during the internal academic audits.

- ✓ Calendar of events
- ✓ Competency skills
- ✓ Individual time table
- ✓ Syllabus
- ✓ Class list
- ✓ Lab batch list, lab records
- ✓ Lesson plan
- ✓ Attendance register
- ✓ Remedial class records
- ✓ Model question papers / previous university question papers
- ✓ Assignment questions
- ✓ Quiz question papers
- ✓ Result analysis
- ✓ CAPA (Internal Assessment and external examination)
- ✓ Tutorial student list (Coaching class list)
- ✓ Counselling and mentoring records
- ✓ Lesson plan tutorials
- ✓ Additional resources to students (notes, PPT, etc.)
- ✓ Co-curricular Activities: Seminar/Conference/workshop/Guest Lecture conducted and attended, Industrial Visits
- ✓ Faculty Achievements: Paper publications ,Monograph patents, Books etc.,

The sample of the internal audit report and external audit report are shown below in Figure 7.2.1 and Figure 7.2.2 for quick reference.

NEW HORIZON COLLEGE OF ENGINEERING, BANGALORE INTERNAL AUDIT FINDING NOV 2017	
INTERNAL AUDIT – FINDING REPORT	Date: 14.11. 2017
Department:EEE	Ref. Number:2017/NOV/007
<b>Focus / Risk area:</b> <ol style="list-style-type: none"> <li>1. Planning</li> <li>2. Optimal utilization of resources</li> <li>3. Performance</li> <li>4. Corrective / Preventive action</li> <li>5. Continuous Improvement</li> </ol>	
<b>Category:</b> Non- conformity    Observation    Note worthy effort <small>*circle one</small>	
Finding: Process (Clause No.):	
<b>Noteworthy:</b> <ul style="list-style-type: none"> <li>• Academic files well maintained</li> <li>• Admission – seats filled and ranks (last 3 years data) - Done</li> </ul>	
<b>Observations:</b> <ol style="list-style-type: none"> <li>1. Professional society activities, events, conferences organized etc., - last year activities list to be filed</li> <li>2. List of faculty publications along with DOI's and Publication / citation details. - Impace factor also to be included in the list</li> </ol>	
Root Cause:	
Corrective / Preventive action: regularly monitored by the HOD	
Person Responsible	: HOD
Close Date	:20.11.17
Effectiveness of CAPA	:in lien to the system
<hr/> Name of the Auditor: <u>Dr. G. Prabhu Kumar, Dr. Girija.N. Srinivasulu, Dr. M.S.Ganeshu Prasad</u>	
Previous audit date and result: 23.03. 2017 & completed	
Signature of Auditee:	Signature of Auditor:
Audit Report No: NHCE/NOV/ 2017/007	

Figure 7.2.1 Internal Audit Report

INTERNATIONAL CERTIFICATION SERVICES  
AUDIT REPORT- INITIAL/RECERTIFICATION



<b>Report NO : RC3/RQ91/6289 24.11.2016</b>	
<b>Organization Name :</b>	<b>NEW HORIZON COLLEGE OF ENGINEERING</b>
<b>Address :</b>	NEW HORIZON COLLEGE OF ENGINEERING, OUTER RING ROAD, KADUBISANAHALLI, BELANDURU POST, BENGALURU -560103
<b>Site(s) Audited :</b>	NEW HORIZON COLLEGE OF ENGINEERING, OUTER RING ROAD, KADUBISANAHALLI, BELANDURU POST, BENGALURU -560103
<b>Audit Date(s) / Duration :</b>	24.11.2016
<b>Standard(s) :</b>	ISO9001:2008
<b>Scope :</b>	<b>Providing Educational Services from Admissions till placement assistance for Bachelor of Engineering, M.Tech, MCA and MBA Programmes</b>
<b>Scope and Capability :</b>	Verified and accepted
<b>ANZ-SIC Code :</b>	8431&8432
<b>Exclusion of clause requirement from ISO Standard if any :</b>	7.3,7.5.2,7.5.4
<b>Outsource Process affecting quality if any :</b>	Nil
<b>Auditor Team :</b>	Jayashankar, R Saravanan, Mohan Dasami
<b>Statutory and Regulatory Requirements :</b>	1. GRANT OF AUTONOMOUS STATUS VTU/ACAL2014-15/A-11/2623, 2015-16 TO 2020-21

Figure 7.2.2: External Audit Report

**7.3 Improvement in Placement, Higher Studies and Entrepreneurship****(10)**

Assessment is based on improvement in:

- Placement: number, quality placement, core industry, pay packages etc.
- Higher studies: Admissions in abroad and premium Institutions
- Entrepreneurs

**Placement details:**

The list of student placement record and their salary package per annum for three assessment years are listed in Table 7.3.1 to Table 7.3.3.

**Table 7.3.1** Placement data for the year 2016-2017

S.No	Name of the Company	No of Students Placed	Salary offered per annum(in Rupees)
1	Capgemini	6	315000
2	Century Link	5	436600
3	Ellucian	4	560000
4	Epsilon	10	455720
5	FTD Automation	7	180000
6	IBM Tech	4	288000
7	Microland	5	285000
8	NTT Data	18	300000
9	Pinclick	4	240000
10	Servion Global Solutions	6	280000
11	Suzlon	7	180000
12	Tech Mahindra	7	325000
13	Virtuoso	4	150000
14	Wipro	3	320004
<b>Total number of students placed</b>		<b>90</b>	
<b>Total number of Final year students</b>		<b>97</b>	
<b>Percentage of students placed</b>		<b>92.78</b>	



Table 7.3.2: Placement data for the year 2015-2016

S.No	Name of the Company	No of Students Placed	Salary offered per annum(in Rupees)
1	Anora Semiconductors	3	350000
2	ETA	7	240000
3	FTD Infocom Pvt Ltd	6	300000
4	Happiest Minds	8	340000
5	IBM (Tech)	4	288000
6	IBM India	7	315000
7	Microland	3	300000
8	NTT Data	5	300000
9	Sonata	7	300000
10	TCS	26	318887
11	Tech Mahindra	7	325000
12	Wipro Technologies	4	320004
13	TCS/ Happiest Minds	1	318887/340000
14	TCS/Wipro	2	318887/320004
15	TCS/ Happiest Minds/Wipro	3	318887/340000/320004
16	Wipro/Happiest Minds	1	320004/340000
<b>Total number of students placed</b>		<b>94</b>	
<b>Total number of Final year students</b>		<b>107</b>	
<b>Percentage of students placed</b>		<b>87.85</b>	

Table 7.3.3: Placement data for the year 2014-2015

S.NO	Name of the Company	No of Students Placed	Salary offered per annum (in Rupees)
1	Ample Technologies	6	225000
2	Capgemini	4	305000
3	Century Link	3	400000
4	Century Link/TCS	1	400000/318887
5	CSC India	3	327000
6	iGate Patni	5	315000
7	Microland	6	270000
8	Mind Tree	5	320000
9	NTT Data	6	300000
10	SAN Engineering	4	255000
11	Schneider	1	300000
12	Sonata Software	7	214261
13	TCS	29	318887
14	Tech Mahindra	7	307000
15	Torry Harris	4	350000
16	Wipro Technologies	9	300000
<b>Total number of students placed</b>		<b>100</b>	
<b>Total number of Final year students</b>		<b>116</b>	
<b>Percentage of students placed</b>		<b>86.21</b>	

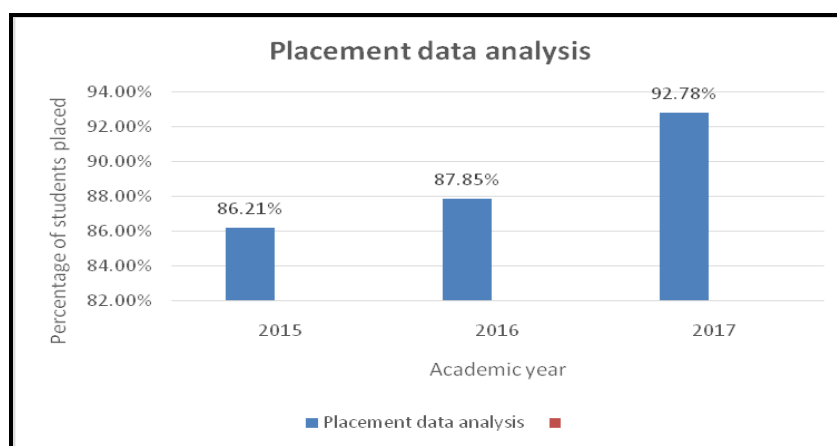
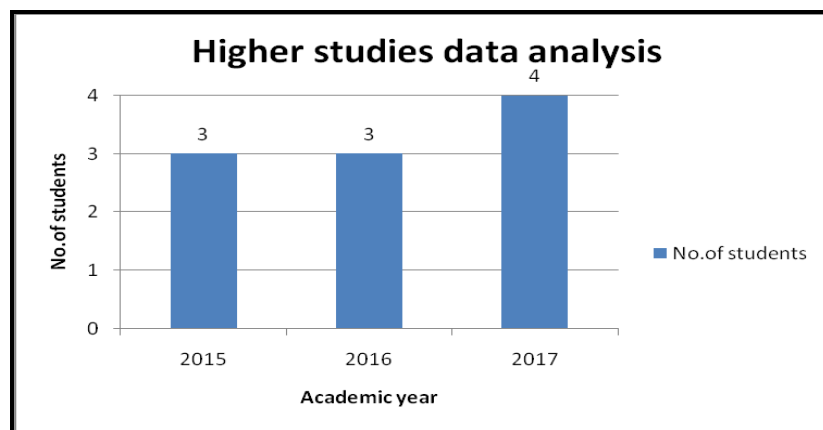


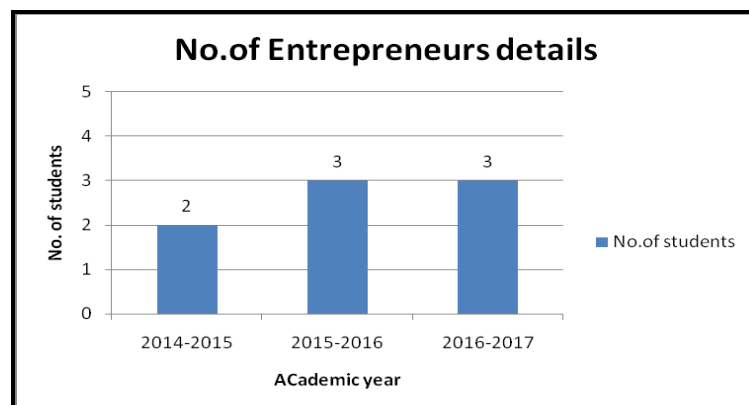
Figure.7.3.1: Placement data analysis for three assessment years

**Higher studies details:****Table 7.3.4** Higher studies Enrolment details

S.No	Year	No of Students admitted for Higher studies
1	2016-17	4
2	2015-16	3
3	2014-15	3

**Figure 7.3.2:** Higher studies data analysis for 3 years**Entrepreneur details:****Table 7.3.5** Entrepreneur details

S.NO	Year	No of Students Registered & Started
1	2016-17	3
2	2015-16	3
3	2014-15	2

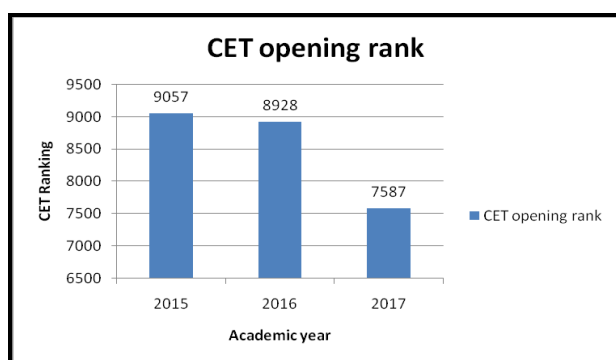
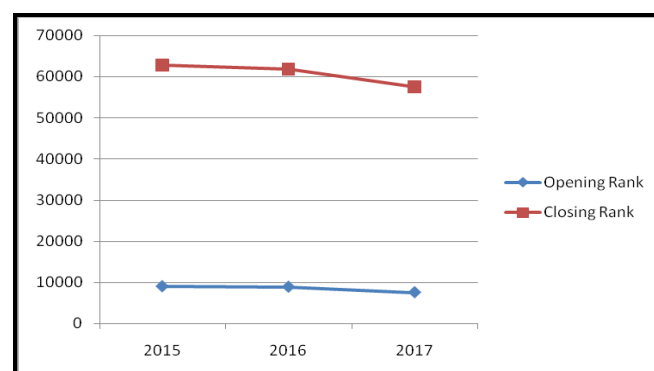
**Figure 7.3.3:** Entrepreneur data analysis for 3 years

**7.4 Improvement in the quality of students admitted to the program****(10)**

Assessment was based on improvement in terms of ranks/score in qualifying state level/national level entrances tests, percentage marks in Physics, Chemistry and Mathematics in 12th Standard and percentage marks of the lateral entry students.

**Table7.4.1.** Admission Data for three Assessment Years

Item	Particulars	CAY 2017-18	CAYm1 2016-17	CAYm2 2015-16
Karnataka Common Entrance Test-CET	No. of Students admitted	46	62	51
	Opening Score/Rank	7587	8928	9057
	Closing Score/Rank	57544	61852	62779
Karnataka Religious & Linguistic Minority (KRLM) Entrance test	No. of Students admitted	48	34	36
	Opening Score/Rank	361	757	123
	Closing Score/Rank	569	1270	1578
Karnataka Diploma Common Entrance Test (DCET)	No. of Students admitted	23	21	24
	Opening Score/Rank	2118	3087	4841
	Closing Score/Rank	13891	21799	26072
<b>Average CBSE/Any other Board Result of admitted students (Physics, Chemistry &amp; Maths)</b>		<b>80.67</b>	<b>75.02</b>	<b>71.14</b>

**Figure 7.4.1:** Improvement of the students admission in CET ranking**Figure 7.4.2:** Improvement of the students admission in CET ranking

CRITERION - 8	FIRST YEAR ACADEMICS	50
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**8.1. First Year Student – Faculty Ratio (FYSFR)****(5)**

Assessment =  $(5 \times 5) / \text{Average FYSFR}$  (Limited to Max.5)

Data for first year course to calculate the FYSFR :

Year	No of students (approved intake strength)	No. of faculty members (considering fractional load)	FYSFR
CAY (2017-18)	1020	73	14
CAYm1 (2016-17)	1020	74	13.8
CAYm2 (2015-16)	1020	71	14.4
<b>Average FYSFR</b>	<b>14</b>		
<b>Assessment = <math>(5 \times 15) /</math> Average FYSFR</b>	<b>5</b>		

**8.2. Qualification of Faculty Teaching First Year Common Courses****(5)**

Assessment of qualification =  $(5x + 3y) / RF$ , x = Number of Regular Faculty with Ph.D

y = Number of Regular Faculty with post – graduate qualification RF=Number of faculty members required as per SFR of 15:1, Faculty definition as defined in 5.1

Year	X	Y	RF	Assessment of faculty qualification $(5x + 3y) / RF$
CAY (2017-18)	10	63	68	3.5
CAYm1 (2016-17)	9	65	68	3.53
CAYm2 (2015-16)	6	65	68	3.31
<b>Average Assessment</b>	<b>3.45</b>			

**8.3. First Year Academic Performance****(10)**

Academic Performance = ((Mean of 1<sup>st</sup> Year Grade Point Grade Point Average of all successful students on a 10 point scale) or (Mean of the percentage of marks in first year of all successful students/10)) x (number of successful students/number of students appeared in the examination)

Successful students are those who are permitted to proceed to the second year.

Academic Performance	2012-16 (CAYm2)	2013-17 (CAYm1)	2014-18 CAY
Mean of CGPA or mean percentage of all successful students (X)	6.23	6.73	6.54
Total Number of successful students (Y)	108	109	105
Total Number of students appeared in the examination (Z)	108	110	108
API [X*(Y/Z)]	6.23	6.67	6.36
<b>Average API(AP1+AP2+AP3/3) :</b>	<b>6.42</b>		
<b>Assessment [1.5*Average API]</b>	<b>9.63</b>		

**8.4. Attainment of Course Outcomes of first year courses****(10)****8.4.1. Describe the assessment processes used to gather the data upon which the evaluation of Course Outcomes of first year is done****(5)**

(Examples of data collection processes may include, but are not limited to, specific exam questions, laboratory tests, internally developed assessment exams, oral exams assignments, presentations, tutorial sheets etc.)

**Internal Tests/ Exams:**

- The Course Coordinator will design the flow of curriculum, Laboratory related problems and distribute to the students.
- After commencement of the course, the course coordinator will conduct 3 tests in a given semester distributed as one test per month.
- Course coordinator will follow the scheme of evaluation set by the department and evaluate the paper.
- It is preferable that a student shall obtain not less than 40% of the maximum marks prescribed for the course
- The final IA marks will be based on the average of best of the two tests

**Laboratory Exam Evaluation:**

- Laboratory in-charges will follow rubrics, which is set by the Department for evaluation of laboratory programs.
- The laboratory in-charge will conduct two tests.

**Representative RUBRICS for Lab****Internal Assessment Marks: 25**

Divided into two components: **Continuous Assessment: 15 marks**

**Internal Test: 10 marks****Continuous Assessment:**

- The student will be assessed during the performance of each experiment.
- Each experiment will be evaluated for 10 marks. Total will be averaged out to 10
- The submission of records at the end of each experiment shall be given 5 marks
- After the completion of all experiments an internal test shall be conducted for 50 marks and scaled to 10marks.

Break up of 15 marks (in every lab):

Attributes	Descriptors	Scores
<b>Preparation(2)</b>	Well prepared with concepts	2
	Not so clear but correct	1
	Incomplete / incorrect	0
<b>Performance(2)</b>	Done the complete experiment	2
	Done with slight error in reading	1
<b>Execution &amp; Results(4)</b>	Well done with expected result	4
	Done with slight deviation in result	3
	Error in calculation	2
	Not completed	0
<b>VIVA VOCE(2)</b>	Answers correctly	2
	Answers satisfactorily	1
	Do not answer any question	0
<b>Record completion and submission(5)</b>	Submits in time and completed (during subsequent lab)	5
	Fails to submit the record in time / incomplete submission	0

**8.4.2. Record the attainment of course outcomes of all first year courses (5)**

Program shall have set attainment levels for all first year courses.

(The attainment levels shall be set considering average performance levels in the university examination or any higher value set as target for the assessment years.

Attainment level is to be measured in terms of student performance in internal assessments with respect the Cos of a subject plus the performance in the University examination)

**TARGET & ATTAINMENT LEVELS OF COS FOR INTERNAL ASSESSMENT**

Target is stated in terms of number of students scoring greater than or equal to 16 ( $\geq 16$ ) in the internal assessment for a maximum marks of 25.

**Attainment Level**

60% of the students scoring greater than or equal to 16 ( $\geq 16$ ) in the internal assessment is set as an attainment level and if the targets are achieved then all the course outcomes are attained for that year

**TARGET & ATTAINMENT LEVELS OF COS FOR EXTERNAL ASSESSMENT**

Target is stated in terms of number of students scoring greater than or equal to 35 ( $\geq 35$ ) in the external exam for a maximum marks of 100.

**Attainment Level**

75% of the students scoring greater than or equal to 35 ( $\geq 35$ ) in the external assessment is set as an attainment level and if the targets are achieved then all the course outcomes are attained for that year



Target & attainment levels of COs using internal assessment (internal exams) for courses in 1st year- C.A.Ym1

Table 8.4.2.1. Target & attainment levels of COs using internal assessment (internal exams) for courses in 1st year- C.A.Ym1

Course	INTERNAL ASSESSMENTS											
	Targeted Percentage of COs						Attainment Percentage of COs					
	CO1	CO2	CO3	CO4	CO5	CO6	CO1	CO2	CO3	CO4	CO5	CO6
<b>I Semester</b>												
10MAT11	74	74	74	74	74	74	82	82	82	82	82	82
10CHE12	70	70	70	70	70	70	54	54	54	54	54	54
10CCP13	70	70	70	70	70	70	86	86	86	86	86	86
10CAED14	80	80	80	80	80	80	93	93	93	93	93	93
10ELN15	70	70	70	70	70	70	82	82	82	82	82	82
10CPL16	80	80	80	80	80	80	75	75	75	75	75	75
10CHEL17	80	80	80	80	80	80	87	87	87	87	87	87
10CIV18	80	80	80	80	80	80	97	97	97	97	97	97
<b>II Semester</b>												
10MAT21	74	74	74	74	74	74	87	87	87	87	87	87
10PHY22	70	70	70	70	70	70	80	80	80	80	80	80
10CIV23	70	70	70	70	70	70	81	81	81	81	81	81
10EME24	80	80	80	80	80	80	80	80	80	80	80	80
10ELE25	75	75	75	75	75	75	88	88	88	88	88	88
10WSL26	80	80	80	80	80	80	83	83	83	83	83	83
10PHYL27	80	80	80	80	80	80	89	89	89	89	89	89
10CIP28	80	80	80	80	80	80	96	96	96	96	96	96

Target & attainment levels of COs using external assessment (External exams) for courses in 1st year- C.A.Ym1

**Table 8.4.2.1.** Target & attainment levels of COs using external assessment (External exams) for courses in 1st year- C.A.Ym1

Course	EXTERNAL ASSESSMENTS											
	Targeted Percentage of COs						Attainment Percentage of COs					
	CO1	CO2	CO3	CO4	CO5	CO6	CO1	CO2	CO3	CO4	CO5	CO6
<b>I Semester</b>												
10MAT11	75	75	75	75	75	75	75	75	75	75	75	75
10CHE12	75	75	75	75	75	75	70	70	70	70	70	70
10CCP13	75	75	75	75	75	75	85	85	85	85	85	85
10CAED14	75	75	75	75	75	75	93	93	93	93	93	93
10ELN15	75	75	75	75	75	75	75	75	75	75	75	75
10CPL16	90	90	90	90	90	90	100	100	100	100	100	100
10CHEL17	90	90	90	90	90	90	99	99	99	99	99	99
10CIV18	75	75	75	75	75	75	100	100	100	100	100	100
<b>II Semester</b>												
10MAT21	75	75	75	75	75	75	91	91	91	91	91	91
10PHY22	75	75	75	75	75	75	86	86	86	86	86	86
10CIV23	75	75	75	75	75	75	93	93	93	93	93	93
10EME24	75	75	75	75	75	75	91	91	91	91	91	91
10ELE25	75	75	75	75	75	75	94	94	94	94	94	94
10WSL26	90	90	90	90	90	90	100	100	100	100	100	100
10PHYL27	90	90	90	90	90	90	99	99	99	99	99	99
10CIP28	75	75	75	75	75	75	94	94	94	94	94	94

**8.5. Attainment of Program Outcomes from first year courses (20)****8.5.1. Indicate results of evaluation of each relevant PO and/or PSO, if applicable (15)**

The relevant program outcomes that are to be addressed at first year need to be identified by the institution.

Program Outcome attainment levels shall be sent for all relevant POs and/or PSOs through first year courses.

(Describe the assessment processes that demonstrate the degree to which the Program Outcomes are attained through first year courses and document the attainment levels.

Also include information on assessment processes used to gather the data upon which the evaluation of each Program Outcome is based indicating the frequency with which these processes are carried out)

**POs Attainment: CAYm1**

2013-2017												
Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>I Semester</b>												
10MAT11	2.67	2.83	2.00	2.00	2.00	-	-	-	1.50	1.50	-	1.50
10CHE12	1.70	1.70	1.80	1.30	1.20	0.60	0.60	0.96	1.20	-	-	1.20
10CCP13	1.67	1.83	1.67	2.17	1.83	2.33	2.00	1.40	1.67	-	-	2.00
10CAED14	3.00	2.00	2.00	2.00	2.83	1.00	-	-	-	-	-	2.00
10ELN15	3.00	2.83	2.00	1.00	1.00	1.83	1.67	1.00	2.17	1.00	1.25	2.00
10CPL16	1.24	1.40	1.71	1.87	1.40	2.05	1.40	-	1.87	-	-	1.31
10CHEL17	3.00	3.00	2.00	2.00	1.00	-	1.00	2.00	2.00	-	-	2.00
10CIV18	1.17	2.00	2.00	1.75	1.67	2.00	1.80	1.25	1.50	2.00	2.00	2.00
<b>II Semester</b>												
10MAT21	2.67	2.83	2.00	2.00	2.00	-	-	-	1.50	1.50	-	1.50
10PHY22	3.00	3.00	3.00	1.00	-	-	1.00	-	2.33	1.00	-	2.00
10CIV23	3.00	2.83	2.67	3.00	2.00	2.00	3.00	2.00	2.00	1.00	3.00	1.50
10EME24	2.67	2.17	2.00	2.17	2.00	1.00	1.00	-	-	-	-	2.17
10ELE25	3.00	3.00	2.00	-	1.00	1.00	1.00	-	-	-	-	2.00
10WSL26	2.83	2.00	3.00	2.17	-	1.00	1.00	-	2.50	1.17	1.00	1.50
10PHYL27	3.00	2.20	2.20	1.00	-	-	1.00	-	3.00	1.00	-	2.00
10CIP28	-	-	-	-	-	1.00	1.00	3.00	1.00	2.00	-	1.00

**PO Attainment Level:**

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>PO Attainment</b>	2.51	2.38	2.14	1.82	1.66	1.44	1.34	1.66	1.86	1.35	1.81	1.73

**8.5.2. Actions taken based on the results of evaluation of relevant POs (5)**

(The attainment levels by direct (student performance) are to be presented through program level course – PO matrix as indicated)

**POs attainment levels and actions for improvement – CAY**

P0s	Target Level	Attainment Level	Observations
<b>P01 : Engineering knowledge</b>			
<b>P01</b>	<b>2.5</b>	<b>2.53</b>	Target Achieved
<b>Role of Basic Sciences in Engineering – an Interactive session by Mr. Vikas Chellani on 17-08-2015</b>			
<b>P02 : Problem analysis</b>			
<b>P02</b>	<b>2.3</b>	<b>2.34</b>	Target Achieved
<b>Organized Expert Lecture on Simplifying Complex problem on 24-08-2015 by Dr. Karunakar Nanda, IISC, Bangalore</b>			
<b>P03 :Design/development of solutions</b>			
<b>P03</b>	<b>2.1</b>	<b>2.15</b>	Target Achieved
<b>Safety measure on usage of electronic equipments by V. Dharmambal on 07-10-2015</b>			
<b>P04: Conduct investigations of complex problems</b>			
<b>P04</b>	<b>2.18</b>	<b>1.81</b>	Target Achieved
<b>Importance of literature survey for any research-lecture given Dr. Gangadhariah Y. Hon 21-08-2015</b>			
<b>P05: Modern tool usage</b>			
<b>P05</b>	<b>1.6</b>	<b>1.72</b>	Target Achieved
<b>Handling of electronic equipments – A hands on experience by Dr. Sanjay Jain on 22-08-2015</b>			
<b>P06 : The Engineer and Society</b>			
<b>P06</b>	<b>1.4</b>	<b>1.43</b>	Target Achieved
<b>Complimented by the course constitution of India and Professional ethics</b>			
<b>P07 :Environment and sustainability</b>			
<b>P07</b>	<b>1.3</b>	<b>1.33</b>	Target Achieved
<b>Talk on Ecological and Environmental consciousness by Dr. Ananda Vardhan on 19-08-2015</b>			

<b>P08 : Ethics</b>			
<b>P08</b>	<b>1.6</b>	<b>1.63</b>	Target Achieved
<b>Complimented by the course constitution of India and Professional ethics</b>			
<b>P09 : Individual and team work</b>			
<b>P09</b>	<b>1.8</b>	<b>1.8</b>	Target Achieved
<b>More group based activities like Quiz, GD, Group mini Projects conducted</b>			
<b>P010: Communication</b>			
<b>P010</b>	<b>1.3</b>	<b>1.36</b>	Target Achieved
<b>Soft skills enhanced via the course Business English communication</b>			
<b>P011: Project management and finance</b>			
<b>P011</b>	<b>1.7</b>	<b>1.75</b>	Target Achieved
<b>An Insight on Managerial skill set development – an interactive session on 24-08-2015</b>			
<b>P012 :Life-long learning</b>			
<b>P012</b>	<b>1.7</b>	<b>1.74</b>	Target Achieved
<b>Patenting the ideas an interactive session by Dr. Sheelan Mishra on 20-08-2015</b>			

**POs attainment levels and actions for improvement – CAYm1**

<b>P0s</b>	<b>Target Level</b>	<b>Attainment Level</b>	<b>Observations</b>
<b>P01 : Engineering knowledge</b>			
<b>P01</b>	<b>2.5</b>	<b>2.51</b>	Target Achieved
<b>Deliberated the role of fundamental sciences in all branches of engineering by Dr. M.S. Ganesha Prasad on 16-08-2014</b>			
<b>P02 : Problem analysis</b>			
<b>P02</b>	<b>2.4</b>	<b>2.38</b>	Target Marginally Missed
<b>Guest lecture on Mathematical Modelling by Dr. Rudraiah N on 06-09-2014</b>			
<b>P03 :Design/development of solutions</b>			
<b>P03</b>	<b>2.1</b>	<b>2.14</b>	Target Achieved
<b>Usage of solid edge softwares explained by Professor. Nagabhushan on 14-08-2014.</b>			

P04: Conduct investigations of complex problems			
P04	1.8	1.82	Target Achieved
<b>Importance of literature survey for any research-lecture given Dr. Joyce on 11-08-2014</b>			
P05: Modern tool usage			
P05	1.6	1.66	Target Achieved
<b>Lecture and Practice on Tools for simulation by Dr. Asha V on 11-08-2014</b>			
P06 : The Engineer and Society			
P06	1.4	1.44	Target Achieved
<b>Complimented by the course constitution of India and Professional ethics</b>			
P07 :Environment and sustainability			
P07	1.3	1.34	Target Achieved
<b>Visit to waste water treatment plant</b>			
P08 : Ethics			
P08	1.6	1.66	Target Achieved
<b>Complimented by the course constitution of India and Professional ethics</b>			
P09 : Individual and team work			
P09	1.8	1.86	Target Achieved
<b>More group based activities like Quiz, GD, Group mini Projects conducted</b>			
P010: Communication			
P010	1.3	1.35	Target Achieved
<b>Guest lecture on Communication Skills and techniques by Mr. Anoop Singh, Infosys on 13-08-2014</b>			
P011: Project management and finance			
P011	1.7	1.81	Target Achieved
<b>Principles of management by Mr. Manoj Jain EMC<sup>2</sup> on 12-08-2014</b>			
P012 :Life-long learning			
P012	1.7	1.73	Target Achieved
<b>Patenting the ideas an interactive session by Dr. Sheelan Mishra on 14-08-2014</b>			

## POs attainment levels and actions for improvement – CAYm2

P0s	Target Level	Attainment Level	Observations
<b>P01 : Engineering knowledge</b>			
<b>P01</b>	<b>2.0</b>	<b>2.49</b>	Target Achieved
<b>Importance of Basic Sciences in the role of engineering &amp; technology emphasized by Prof. Shivabalan on 19-8-2013</b>			
<b>P02 : Problem analysis</b>			
<b>P02</b>	<b>2.0</b>	<b>2.36</b>	Target Achieved
<b>Organized Expert Lectures by Dr. T. S. Natarajan, IIT- Madras on 22-08-2013</b>			
<b>P03 :Design/development of solutions</b>			
<b>P03</b>	<b>2.0</b>	<b>2.14</b>	Target Achieved
<b>Youtube videos related to modern design and development showed to students.</b>			
<b>P04: Conduct investigations of complex problems</b>			
<b>P04</b>	<b>1.5</b>	<b>1.81</b>	Target Achieved
<b>Importance of literature survey for any research-lecture given Dr. Suma on 19-08-2013</b>			
<b>P05: Modern tool usage</b>			
<b>P05</b>	<b>1.5</b>	<b>1.68</b>	Target Achieved
<b>Orientation on Hands on experience on CAED tools by Mr. Nagabhushan on 20-08-2013</b>			
<b>P06 : The Engineer and Society</b>			
<b>P06</b>	<b>1.2</b>	<b>1.47</b>	Target Achieved
<b>Complimented by the course constitution of India and Professional ethics</b>			
<b>P07 :Environment and sustainability</b>			
<b>P07</b>	<b>1.2</b>	<b>1.36</b>	Target Achieved
<b>Talk on e-waste management and societal importance by Dr. Illango, on 23-08-2013</b>			
<b>P08 : Ethics</b>			
<b>P08</b>	<b>1.5</b>	<b>1.73</b>	Target Achieved
<b>Complimented by the course constitution of India and Professional ethics</b>			

<b>P09 : Individual and team work</b>			
<b>P09</b>	<b>1.5</b>	<b>1.86</b>	Target Achieved
<b>More group based activities like Quiz, GD, Group mini Projects encouraged among students</b>			
<b>P010: Communication</b>			
<b>P010</b>	<b>1.2</b>	<b>1.28</b>	Target Achieved
<b>Need for effective communication and interactive session by Ms Rasajna on 24-08-2013</b>			
<b>P011: Project management and finance</b>			
<b>P011</b>	<b>1.5</b>	<b>1.78</b>	Target Achieved
<b>Lecture on Principle of management by Mr. Alex Rajan on 24-08-2013</b>			
<b>P012 :Life-long learning</b>			
<b>P012</b>	<b>1.5</b>	<b>1.73</b>	Target Achieved
<b>Patenting the ideas an interactive session by Dr. Sheelan Mishra on 21-08-2013</b>			



CRITERION - 9	STUDENT SUPPORT SYSTEMS	50
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### 9.1. Mentoring system to help at individual level

(5)

**Type of mentoring:** Professional guidance / career advancement / course work specific / laboratory specific / all-round development.

**Number of Faculty Mentors:** 18

**Number of Mentees/Mentor:** Average 20

#### Mentoring system to help at individual levels

##### I. Details of mentoring system:

- Each student is allotted with a faculty mentor, and each mentor maintains a Proctor form with details like parents/guardian's name, addresses, contact numbers and academic details, academic scores.
- Professional counselors are available to all the students who are counseled individually, aided therapeutically and are supported in their aspirations related to academics, career plans; to air their grievances and cope with issues which may impede their progress in the above areas.
- All student mentors encourage the students' participation, apart from curricular guidance in co-curricular, extra-curricular and other professional activities, which will motivate them, stimulate their growth into well groomed young professionals.
- Parent meetings are conducted bringing parents into the monitoring / mentoring system as key stake-holders.
- A parent and/or student login is exclusively provided in the institution's website for sharing of pertinent information like attendance and academic performance of the student.
- Follow up sessions with the parents/faculty/counselors and mentors are regularly arranged with the students who have poor performance and attendance to enable them to improve their attendance and performance.

**Table 9.1.1:** Summary of mentoring system

Parameters	Description
Type of mentoring system	Professional guidance / career advancement / course work specific / laboratory specific / total development / personal development
Number of faculty mentors	18
Average number of	20

students per mentor/	
Frequency of meeting	Thrice in a semester, <i>in some cases, as and when needed</i>
Counselor available for specific number of students	One dedicated counselor for BE Electrical and Electronics Engineering students

## II. Description of mentoring system:

Table 9.1.2: Description of mentoring system

Sl. No.	Type of mentoring system	Functions
1	Professional guidance	<ul style="list-style-type: none"> <li>• <b>Skill Enhancement for better employability:</b> Support their learning and enhance their laboratory and research skills through attending technical workshops, hands on training programmes and student symposiums. Industry based training is offered to selected student so as to enhance their chances of employability</li> <li>• <b>Enhancing the Research Ideas:</b> Encourage students to develop and discuss their ideas as a poster and oral presentations in different national and international conferences.</li> <li>• <b>Industry oriented VIII SEM projects:</b> Projects are designed based on the needs of industry as a custom designed live projects to give the real time experience to the students to not only understand the expectations of the industry but also making them familiar with the working nature of the industry and molding them industry ready.</li> <li>• <b>Publication in journals/Patents:</b> Persuade them to upgrade their domain knowledge through active perusing and encouraged them to publish review, research articles and filing Patents.</li> </ul>
2	Academic guidance	<ul style="list-style-type: none"> <li>• <b>Information sharing:</b> Share information of academic planners, academic schedules and e-learning resources to enhance their knowledge database.</li> <li>• <b>Academic Counseling:</b> Identify students with less attendance and ensure that they improve their attendance by getting counseled in the presence of mentor, counselor and HOD.</li> <li>• <b>Support to the poor performers:</b> Focus on academically weak students, by providing them with additional reading materials, model questions along with solutions and special make-up classes.</li> </ul>

3	<b>Career advancement</b>	<ul style="list-style-type: none"> <li>• <b>Professional bodies registration:</b> To create awareness and to enhance the knowledge about the various activities and state of art research in the Electrical and Electronics Engineering, the students are encouraged and guided to take up registration in the professional bodies i.e.,IEEE, ISTE etc...</li> <li>• <b>MOOCs:</b> Motivate and support the students to take up online certification courses to strengthen and build up their qualifications for their Academic progression and to achieve higher career paths in the applied areas of Electrical and Electronics Engineering.</li> <li>• <b>Value added training programmes:</b> Students undergone various training programmes (50 hrs) like Electrical Autocad, Revitmep, Primavera and labview to enhance their placement opportunities.</li> <li>• <b>Training &amp; Placement Cell guidance:</b> Provide Career Guidance and other Training apart from arranging campus recruitment drives by the Training &amp; Placement Cell. Support their research into Industry, companies, job and candidate profiles.</li> </ul>
4	<b>Laboratory specific</b>	<ul style="list-style-type: none"> <li>• <b>Laboratory manual:</b> Providing the students with tailor made laboratory manual based on the experiments of the course to make them understand and knowhow about the different laboratory experiments.</li> <li>• <b>PPT Explanation:</b> Students are given with PPT explanation before the commencement of the each experiment to make them understand the principle of the experiment and the working procedure of the instruments / Experiments.</li> <li>• <b>Experiment demonstration:</b> Faculty gives demonstration on the important experiments to enhance their hands on skills to achieve the results.</li> <li>• <b>Student Counseling:</b> Counsel irregular students to attend laboratory classes regularly and complete backlog experiments during specified extra hours.</li> </ul>
5	<b>All – round development</b>	<ul style="list-style-type: none"> <li>• Encourage and support students towards all round development through participation in literary, cultural and sports activities which helps to develop leadership qualities, decision making abilities, team spirit, socio-psychological awareness, and shapes the student into an intellectually integrated person.</li> </ul>
6	<b>Personal development</b>	<ul style="list-style-type: none"> <li>• Empower and enable inner adjustments by individual students to counter and cope with physical, emotional, mental, social and environmental challenges through student-counselor interaction/</li> </ul>

		<p>through meditation workshops/ through other specialized workshops / activities.</p> <ul style="list-style-type: none"> <li>• Use of therapeutic interventions by counselors where necessary; such as Cognitive Behavior Therapy(CBT), Rational Emotive Behavior Therapy (REBT),Desensitization Therapy, Psychodynamic therapy, Group therapy and so on.</li> <li>• Engage in family/peer counseling by Counselor/Mentor/HOD to strengthen student's interpersonal relationships thereby improving their grades</li> </ul>
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### III. Efficacy of mentoring/counseling system:

The mentoring/counseling system developed by the college has proved to be effective as defined by different parameters:

- STUDENT'S ATTENDANCE: **Enhanced / improved**
- THE INVOLVEMENT OF STUDENTS IN THE ACADEMICS, CO-CURRICULAR AND EXTRA-CURRICULAR: **Improved**
- Individual student's talents/skills identified and nurtured towards excellence (the mentor/counselor/student ratio being optimum for supported growth).
- STUDENTS' SELF-CONFIDENCE/SELF-ESTEEM: Improved over the time, thus developing perseverance and ability to cope better in external professional environment and successfully tackling the external challenges. Some of the key deliverables recorded by department are – developed capacity to appear in job interviews/speaking in public/making presentations/even mentoring peers.

NEW HORIZON COLLEGE OF ENGINEERING  
 DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

STUDENT MENTORING SYSTEM

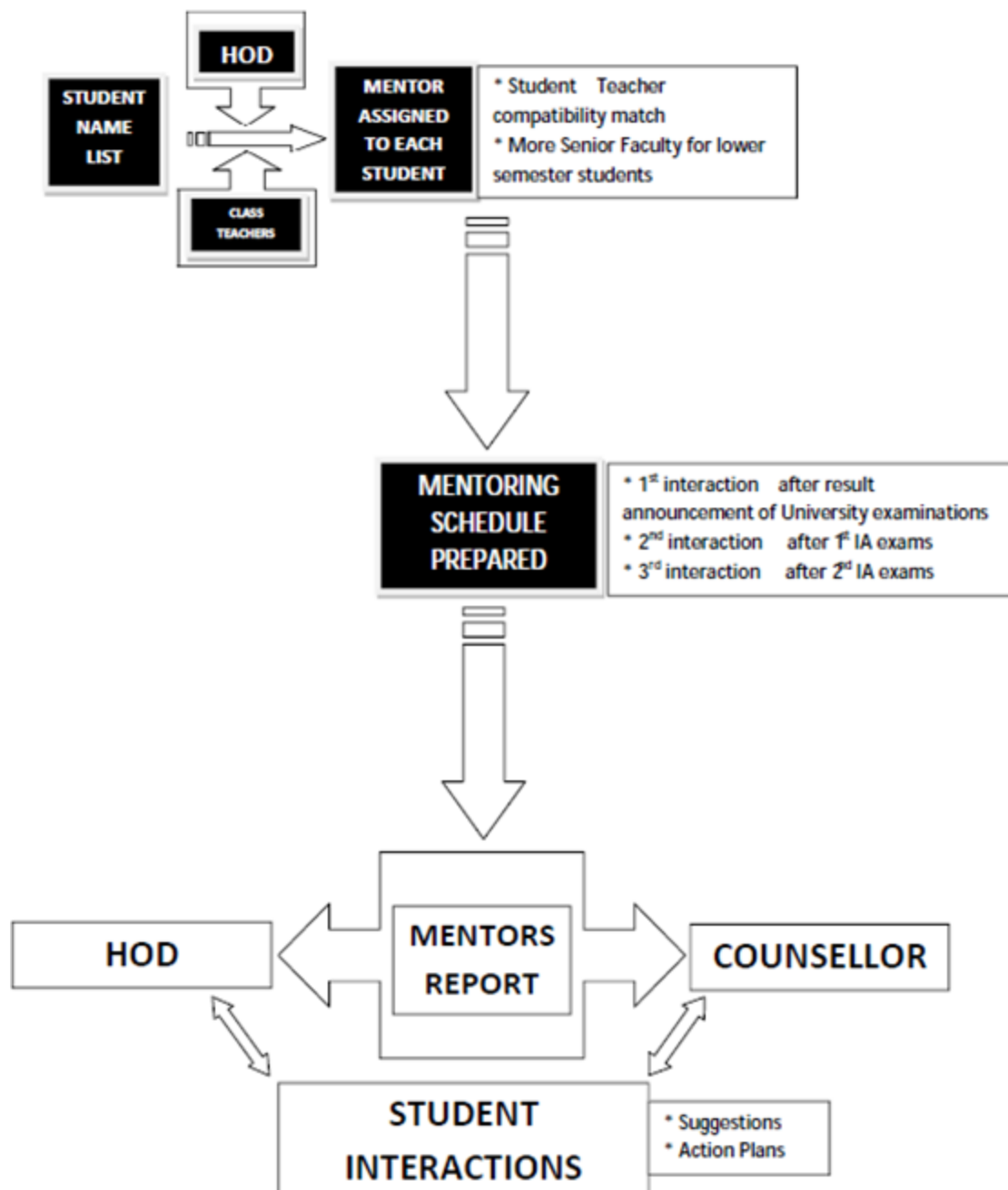


Figure 9.1.1: Mentoring System

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**NEW HORIZON COLLEGE OF ENGINEERING**  
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

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**PARENT TEACHER INTERACTION**

**Student Name:**

**Date:**

**Semester & USN Number:**

**Parent / Guardian Name:**

**Contact Details:**

**PARENT FEEDBACK:**

**Parent Signature**

**HOD**

### No. of students improved in various aspects in last 3 years

**Table 9.1.3:** Impact of efficacy of mentoring/counseling system

Type of Mentoring/Counseling	2017-18		2016-17		2015-16	
	No. of students counseled	No. of students improved	No. of students counseled	No. of students improved	No. of students counseled	No. of students improved
Academic guidance	31	15	27	19	25	13
Patent filing	8	4	5	3	-	-
Academic progression to M.Tech and MS	20	4	20	3	20	2
Entrepreneurs/Start up	30	3	30	3	30	2
Industry Interaction	60	32	60	31	60	10
Cocurricular Activities	310	140	310	78	310	26

### 9.2. Feedback analysis and reward / corrective measures taken, if any

(10)

Feedback collected for all courses: **YES**

Specify the feedback collection process: **Through software**

Average Percentage of students who participate: **Around 85%**

Specify the feedback analysis process:

The minimum feedback for a faculty member from the students is 3.5 for 5 scale rating system. For faculty scoring less than the institution standard, necessary corrective actions are followed.

- Necessary advice by the Head of the department about handling and monitoring the class to the faculty.
- Deputing faculty to the Faculty Development Program (FDP)
- Counseling the faculty through counselors about building confidence in handling the subjects.

If there is no improvement seen even after the above mentioned activities, he/she can be terminated from the institution.

**Feedback analysis and reward / corrective measures taken**

Feedback collection process for all courses: **YES**

**I. Methodology of feedback analysis:**

- a. Feedback collection process
- b. Feedback assessment process
- c. System of reward / corrective measures

**a. Feedback collection process**

- Feedback mechanism is well organized system in the college for all courses.
- All the students are allowed to give feedback.
- Computerized feedback is collected from students for all the courses.

**Table 9.2.1:** Feedback collection process

Items	Description
<b>Feedback collection process</b>	YES for all courses
<b>Process</b>	Computerized using <b>Knowledge Pro</b> software
<b>Feedback receiver</b>	Program coordinator / HOD
<b>Frequency of feedback collection</b>	Once in a semester (But oral feedback from Class Representatives is taken by HOD almost every month)
<b>Metrics used for calculation</b>	6- Not Applicable(NA) 5-Excellent 4-Very good 3-Good 2-Satisfactory 1-Below average
<b>Purpose of comment</b>	For improving the quality of education

**b. Feedback assessment process**

- The feedback collected from students is first analyzed by an Assessment Committee headed by the Principal.
- The contents of the feedback are shared with each faculty member individually.
- Performance of each individual faculty is assessed by the concerned committee members.

All the courses mentioned in the feedback form will be analyzed as follows:

<b>Step-1</b>	Collection of feedback forms for all the subjects from the students based on parameters specified in questionnaire.
<b>Step-2</b>	Estimation of average for all the parameters and calculation of cumulative otherwise called threshold
<b>Step-3</b>	After the recommendations of IQAC, threshold value will be finalized. The normal value setup at present is 3.5
<b>Step-4</b>	If the threshold exceeds 3.5, it is considered as good to excellent and if lesser than 3.5; the faculty performance is considered as average to below average.



<b>Step-5</b>	If the faculty receives good performance, he is appreciated by the Principal and HOD @ Departmental appreciation meets and also rewarded with monetary benefits. If he / she receives average or below average performance, he / she gets counseling and allows them to get correct their performances.
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**c. System of reward / corrective measures**

**System of reward process: Best faculty award is given based on the following factors:**

1. Student's feedback (Format enclosed)
2. The faculty's self-appraisal report (Format enclosed)
3. HOD's evaluation
4. The marks given by faculty appraisal committee, headed by principal
5. The increments and promotions also add some effect to these scores
6. If the faculty achieves 90% - 100%, an appreciation from the management is awarded along with a monetary benefit of increment.

**II. Corrective measures:**

- Explanation from the faculty will be demanded for the inappropriate result and subsequent action will be processed.
- Counseling will be given to the concerned faculty by HOD and Principal.
- Promoting and encouraging faculty to attend the faculty development programs (FDP) related to effective teaching methodologies.

**FORMAT of Student Feedback on Faculty**

**Questionnaire**

1. Clarity in explaining the subject
2. Subject explained was easy to understand
3. Content quality is relevant and useful
4. Faculty answers to your queries/questions
5. Coverage of topic/subject is on time
6. The concepts were explained with examples
7. Faculty preparation for the class
8. Faculty guidance for preparation of seminar, conference and exam
9. Punctuality of the faculty for the class
10. Communicates distinctly and effectively
11. Treats students with respect and effectively
12. Control of the classroom by faculty
13. Relevance of assignments to the subject
14. Overall satisfaction

**Rating of Scale**

6-NA 5-Excellent      4-very good      3-good      2-satisfactory      1-below average

**FORMAT of Faculty Performance-Appraisal Report****PART-A (Personal Particular)**

Name : \_\_\_\_\_

Educational Qualifications : \_\_\_\_\_

(If you possess a Doctorate degree, state if you are a recognized guide) : \_\_\_\_\_

Department : \_\_\_\_\_

Designation : \_\_\_\_\_

No of years served in NHCE till date : \_\_\_\_\_

Total Experience till date : \_\_\_\_\_

Any extraordinary achievement during the assessment period : \_\_\_\_\_

**Part - B****ACADEMIC DUTIES AND RESPONSIBILITIES ASSIGNED**

<b>ODD Semester</b>	<b>Theory</b>	<b>Subject Assigned</b>	<b>No. of Classes Planned</b>	<b>No. of Classes Conducted</b>	<b>Remarks</b>
	<b>Lab</b>	<b>Laboratory</b>	<b>No. of Experiments Planned</b>	<b>No. of Experiments Conducted</b>	<b>Remarks</b>
<b>EVEN Semester</b>	<b>Theory</b>	<b>Subject Assigned</b>	<b>No. of Classes Planned</b>	<b>No. of Classes Conducted</b>	<b>Remarks</b>
	<b>Lab</b>	<b>Laboratory</b>	<b>No. of Experiments Planned</b>	<b>No. of Experiments Conducted</b>	<b>Remarks</b>

**APPLICABLE TO FACULTIES HANDLED AUTONOMOUS**

ODD Semester	Subjects Assigned	Self Study / Sem / Student	Assignments / Semester	Quiz / Semester
EVEN Semester				

**PART - C**

A brief pen picture of self, not exceeding in 5 to 6 lines, highlighting the administrative and support activities entrusted

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**PART -D**

Note: Please put a tick in the appropriate rating

**1) Proper maintenance of course files and attendance registers (as per Check list) with necessary proof:**

25 <input type="checkbox"/>	20 <input type="checkbox"/>	15 <input type="checkbox"/>	10 <input type="checkbox"/>	5 <input type="checkbox"/>
Outstanding	Very Good	Good	Fair	Poor

**2) Proper valuation & maintenance of blue books of Students with necessary proof:**

15 <input type="checkbox"/>	12 <input type="checkbox"/>	9 <input type="checkbox"/>	6 <input type="checkbox"/>	3 <input type="checkbox"/>
Outstanding	Very Good	Good	Fair	Poor

**3) Contribution in development of lab manuals, addition of new experiments and innovations and modernization of labs:**

5 <input type="checkbox"/>	4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>
Outstanding	Very Good	Good	Fair	Poor

**4) Participation in co-curricular activities:**

5 <input type="checkbox"/>	4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>
Outstanding	Very Good	Good	Fair	Poor

(Here contributions in areas like ISTE, forum activities, arranging guest lectures, symposiums/ seminars, Workshops, blood donation, sports and other fruitful activities need to be taken into consideration.)

5) **Initiatives taken towards counseling / Mentoring, guidance & overall character building of students:**

10 <input type="text"/>	8 <input type="text"/>	6 <input type="text"/>	4 <input type="text"/>	2 <input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

6) **Initiatives and interest shown in acquiring and disseminating new knowledge and skill through publications, books, attending seminars etc:**

**Publications – Minimum 02 per Academic Year**

5 <input type="text"/>	4 <input type="text"/>	3 <input type="text"/>	2 <input type="text"/>	1 <input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

7) **Initiatives and interest shown in acquiring and disseminating new knowledge and skill through publications, books, attending seminars etc:**

**FDP – Minimum 03 per Academic Year**

5 <input type="text"/>	4 <input type="text"/>	3 <input type="text"/>	2 <input type="text"/>	1 <input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

8) **Contribution in guiding students for completion of their projects:**

5 <input type="text"/>	4 <input type="text"/>	3 <input type="text"/>	2 <input type="text"/>	1 <input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

9) **Efforts made in attending continuing education programmes:**

5 <input type="text"/>	4 <input type="text"/>	3 <input type="text"/>	2 <input type="text"/>	1 <input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

10) **Initiative & involvement in curriculum development (Suggestions to improve the Curriculum):**

5 <input type="text"/>	4 <input type="text"/>	3 <input type="text"/>	2 <input type="text"/>	1 <input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

- 11) Endeavors towards self-development by upgrading/acquiring qualifications, gaining experience through professional activities, including membership of Professional societies.

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

- 12) Contribution in promoting institute industry, R&D activities & consultancy services (Minimum 02 Proposals per Academic Year).

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

- 13) The efforts made by individual to motivate & guide fellow faculty persons for acquiring higher education :( Guidance for M Sc., Eng, Ph D etc) (Applicable only for Ph.D Holders)

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

- 14) Contribution in shouldering the administrative responsibilities pertaining to the institution

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

- 15) Initiatives & involvement in the field of policy planning, monitoring evaluation & promotional activities at departmental & institutional level:

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

- 16) Involvement in design & development of new academic/training programmes:

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

- 17) Efforts made towards judicious utilization, management & development of institutional facilities.

5	4	3	2	1
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**18) Involvement in planning & implementation of staff development activities:**

5 <input type="text"/>	4 <input type="text"/>	3 <input type="text"/>	2 <input type="text"/>	1 <input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**19) Initiative taken towards Societal Development (adult literacy drives & bringing awareness in the society towards hygiene/moral & ethical value etc):**

5 <input type="text"/>	4 <input type="text"/>	3 <input type="text"/>	2 <input type="text"/>	1 <input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**20) Effort made in promotion of entrepreneurship & job creation:**

5 <input type="text"/>	4 <input type="text"/>	3 <input type="text"/>	2 <input type="text"/>	1 <input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**21) Degree of integrity, efficiency, effectiveness & dedication shown during the course of discharging assigned responsibilities:**

5 <input type="text"/>	4 <input type="text"/>	3 <input type="text"/>	2 <input type="text"/>	1 <input type="text"/>
Outstanding	Very Good	Good	Fair	Poor

**SUMMARY OF PART "D"**

- ❖ Total points awarded to staff: (D1) \_\_\_\_\_ (Points Obtained / Maximum Points \*5)
- ❖ Points awarded with 60% weight age: (D1\*0.6) \_\_\_\_\_

**PART – E**

**Formula Used: (Grand Result % \* 5) / 100**

(Result Conversion Scale: 100% - 5, 80% - 4, 60% - 3, 40% - 2, 20% - 1, 0% - 0)

ODD Semester						
	Sub 1	Sub 2	Sub 3	Sub 4	Sub 5	Average
<b>Student Feedback</b>						
<b>Result</b>						
EVEN Semester						
	Sub 1	Sub 2	Sub 3	Sub 4	Sub 5	Average
<b>Student Feedback</b>						
<b>Result</b>						
<b>Grand Average</b>						

	ODD	EVEN	Grand
Student Feedback			
Result			

**SUMMARY OF PART “E”**

- ❖ Average of student Feedback and Result (E1)=
- ❖ 40% weightage based on grand average:  $(E1*0.4)$ \_\_\_\_\_

**OVERALL SUMMARY**

- ❖ Annual performance index (D + E) = \_\_\_\_\_

**CORRESPONDING RANKING TAKING INTO ACCOUNT THE POINT SCORE AND CONVERTING IT TO TOTAL WEIGHTAGE OF 60%+40%= 100**

**Final Grade:**

- 4.5 – 5.0: OUTSTANDING**
- 4.0 – 4.4: Very good**
- Less than 2: Poor**
- 3.0 – 3.9: Good**
- 2.0 – 2.9: Fair**

Signature of faculty member with date

Areas \_\_\_\_\_ for \_\_\_\_\_ improvement:  
 \_\_\_\_\_  
 \_\_\_\_\_

Signature of HOD with date

**REMARKS & SIGNATURE OF PRINCIPAL**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Signature of the Principal with date

**GUIDELINES TO HEADS OF DEPARTMENT FOR FILLING UP PERFORMANCE APPRAISAL FORM IN RESPECT OF TEACHING STAFF**

1. Every faculty person will be assessed on 21 items/areas of achievement on the pressure point rating scale. The concept of rating scale are given below:

- ❖ **Outstanding:** Excellent professional competence, unblemished track record, utmost efficiency & effectiveness, optimum human capacity utilization, punctuality, sincerity and dedication of highest order.
- ❖ **Very good:** Satisfactory professional competence with reasonable efficiency & effectiveness, reasonable extent of human capacity utilization and high order of punctuality, sincerity and dedication.
- ❖ **Good:** Just satisfactory performance with marginal level of efficiency and effectiveness. Medium human capacity utilization, punctuality, sincerity and dedication just adequate to deliver minimum satisfactory performance.
- ❖ **Fair:** Performance much below the level of expectations. Lack of efficiency and effectiveness, zeal and enthusiasm in performing his/her duties. Under utilization of capacity advertently or inadvertently(due to physical, mental disabilities)
- ❖ **Poor:** A deplorable performance devoid of initiative efforts, zeal or enthusiasm. A liability for the organization with either total lack of capacity, utilization to perform or advertently shirking from responsibilities.

## 2. PROCEDURE OF COMPUTATION OF GRADING

- ❖ 60% weightage of the total points awarded in performance appraisal.
- ❖ 40% weightage is given for points awarded in the faculty evaluation by students from both the semesters.

## 3. CORRESPONDING RANKING TAKING INTO ACCOUNT THE POINT SCORE AND CONVERTING IT TO TOTAL WEIGHTAGE OF 60%+40%= 100

### Final Grade:

**4.5 – 5.0:** OUTSTANDING

**3.0 – 3.9:** Good

**4.0 – 4.4:** Very good

**2.0 – 2.9:** Fair

**Less than 2:** Poor

4. HOD's are required to fill up the performance appraisal Performa in presence of the concerned teaching staff by asking the staff explain item wise performance and their perceptions about the point grades. The HOD's after taking into account the submissions and expectations of the concerned staff & his own perceptions/ option about the capability of the staff, will put a tick on mark particular point scale. In case the ticked grade does not tally with the expectations of the staff, the reasons for variations must be told to staff by HOD in explicit terms.
5. The HOD ensures that assessment is based on the performance of the individual throughout the stipulated assessment period and not based on seasonal performance. Further biases, preferential treatment to selected ones are avoided to make the appraisal system totally transparent and purposeful.
6. Both the HOD and the staff put signatures in the appraisal performa at the appropriate place meant for the purpose. The employees should invariably sign even if they have some reservation on the assessment grades given by HOD's on certain items. They can mention the particular items where they have reservations/ disagreement below their signature at the appropriate place mentioned there in. These dissenting items/points or divergences are discussed by the staff with Principal at appropriate time after seeking interview or if otherwise automatically called by Principal.



7. The decision of the Principal on all dissenting matters is deemed as final & binding on employees. No further query or representations on the subject are entertained at later stages.

**Table 9.2.2:** Details of reward / corrective measures taken

Awards / rewards/ corrective actions	No. of corrective actions / awards / rewards in last 3 years		
	2017-18	2016-17	2015-16
No. of faculty achieved appraisal awards (additional Increments)	8	7	5
No of faculty counseled for below average performance	-	1	2

### 9.3. Feedback on facilities

(5)

Assessment is based on student feedback collection, analysis and corrective action taken.

#### Feedback on facilities (Format enclosed)

A standard procedure for feedback on facilities is taken up in the department as per the following steps:

Feedback is collected from the students on the facilities available in the college such as class room infrastructure, library, labs, canteen, playground, internet facility, etc.

The feedback is analyzed and the necessary corrective measures are implemented after discussions with the management.

#### Following is the process of feedback on facilities.

- 1) Feedback collection process
- 2) Feedback analysis
- 3) Corrective measures

#### 1) Feedback collection process:

**Table 9.3.1:** Details of feedback collection process

Items	Description
Feedback collected on all facilities provided by the college.	YES
Feedback collection process	Computerized
Feedback receiver	Administrative officer / Admin manager
Frequency of feedback collection	Once in an academic year
Metrics used for calculation	5-Excellent 4-Very good 3-Good 2-Satisfactory 1-Below average
Purpose of comments	For improving the quality of facilities.

### **FORMAT of Student Feedback on Facility Questionnaire**

How do you rate the Canteen facilities provided by the institution?

How do you rate the class room Infrastructure?

How do rate the cyber lab facility provided by the institution?

Are you satisfied with the Extra – curricular infrastructure at College?

Are you satisfied with the Hostel Facility provided by the institution?

How do you rate the Lab facilities at the institution?

How do you rate the Library Facilities provided by the institution?

Are you satisfied with the placement support provided?

How is the responsiveness of Accounts office?

How is the responsiveness of College Admin office?

How is the responsiveness of Exam office?

How do you rate the Sports facilities provided by the Institution?

Are you satisfied with the toilet facilities and Maintenance?

How do you rate the transport facility provided by the college?

#### **Rating of Scale**

6 Not applicable

5-Excellent

4-Very good

3-Good

2-Satisfactory

1-Below average

### **2) Feedback analysis**

The feedback given by the students is consolidated and analyzed. The Registrar / Principal discuss about the consolidated report with the management and come out with necessary actions.

### **3) Corrective measures**

Some of the corrective actions initiated are:

- Student Recreation Centre
- Hostel welfare committee is created to monitor the food quality in boys and girls hostel.

**9.4. Self – Learning****(5)**

(The institution needs to specify the facilities, materials and scope for self – learning / learning beyond syllabus, webinars, podcast, MOOCs etc., and evaluate their effectiveness)

**Self–Learning**

Self-Learning method is an individualized method of learning collecting information, processing it, and retaining it without the needs for another individual to teach it.

**I. Scope of Self – Learning**

- Library
- Digital library (centralized in college) for Literature Database i.e Science Director/Pubmed central/Scirus/Medminer
- Departmental library
- Web based learning i.e MOOCs (NPTEL,SWAYAM, Coursera, Udemi, EdX),YouTube, Nat Geo etc (independently by students)
- National Digital Library
- Professional bodies
- Club activities
- Assignments
- Seminars, workshops, Symposiums and Exhibitions.
- Industrial visits
- CD ROMs study

**II. Detailed list of Self – Learning facilities:****Table 9.4.1:** Detailed list of self learning facilities

Sl. No.	Self – Learning process	Description
1	Library	<ul style="list-style-type: none"> <li>• The college library provides information and ideas that are fundamental to functioning successfully in today’s information and knowledge based society.</li> <li>• College library equips students with learning skills and develop the knowledge.</li> </ul>
2	Digital Library	<ul style="list-style-type: none"> <li>• Availability of NPTEL videos</li> <li>• Sufficient systems with multimedia facilities.</li> <li>• Institutional membership of DELNET, a library networking database.</li> <li>• Internet facility</li> </ul>
3	Departmental Library	<ul style="list-style-type: none"> <li>• The department is facilitated with books for UG and different 3-D models to interpret different 3D based functions.</li> <li>• PPTs and illustrative animations and videos are also</li> </ul>

		<p>stored in the department database.</p> <ul style="list-style-type: none"> <li>• Availability of course material intranet.</li> <li>• Language lab facility.</li> <li>• LCD projector for presentation.</li> </ul>
4	<b>Web based learning</b>	<ul style="list-style-type: none"> <li>• The internet is an open information system in which various sources of information, media and materials such as texts, images, video sequences can be linked together in diverse ways to form so-called self learning environment.</li> <li>• Internet offers new possibilities to structure, represent, adopt and integrate various learning content and materials.</li> </ul>
5	<b>Professional bodies / other association</b>	<ul style="list-style-type: none"> <li>• Joining a professional association will be one of the most important activities in a student's career.</li> <li>• To increase knowledge in their own fields, expand networking possibilities or jump start to job hunt, a professional association membership is an option which is worth exploring.</li> <li>• All career options are corresponding professional association that offers valuable information and resources for their career enhancement.</li> <li>• ISTE and IEEE student chapters are established where the students get platform to achieve the knowledge about the advance engineering skills.</li> </ul>
6	<b>Club Activities</b>	<ul style="list-style-type: none"> <li>• Esoft Club</li> <li>• Green Energy Club</li> </ul>
7.	<b>Assignments</b>	<ul style="list-style-type: none"> <li>• It enabled students to go through the topics in a more elaborate manner in order to explore the academic topic which lead to an overall better learning experience for students.</li> <li>• Assignments help the students to understand the subject in a more detailed pattern.</li> <li>• Faculty will conduct assignments on regular basis with two units of every subject and these are graded.</li> </ul>
8.	<b>Seminars, workshops, Symposiums and Exhibitions.</b>	<ul style="list-style-type: none"> <li>• A seminar is group meeting led by an expert that focuses on specific topic or discipline such as emerging technologies, job searches or a literature based field.</li> <li>• Presence in seminar will have numerous benefits to a student like improving communication skills, gaining expert knowledge, networking with others and renewing motivation and confidence.</li> <li>• Seminars are conducted frequently in the department level and the seminars offer students to interact with industry experts, research persons, entrepreneurs and small business partners.</li> </ul>

		<ul style="list-style-type: none"> <li>Workshops allow a student to further develop marketable business skills in an intensive interactive environment.</li> </ul>
9.	<b>Industrial visits</b>	<ul style="list-style-type: none"> <li>It helps students gain first-hand information regarding functioning of the industry.</li> <li>Provides an opportunity to plan, organize and engage in active learning experiences both inside and outside class room.</li> <li>Provides an inside into the real working world.</li> <li>Helps them to see their future place in the working world.</li> <li>Helps to enhance their interpersonal skills and communications.</li> <li>Helps to understand the industrial practice.</li> <li>Industrial visit is a part of college curriculum during which students visit companies and get insight regarding the internal working environment of a company.</li> </ul>

### III. Utilization and its effectiveness:

The overall aim of this review is to evaluate the effectiveness of self-directed learning on the professional development of students.

- Most of the students reached to a conclusion that self learning process is an effective approach for learning but not more than the traditional method of teaching.
- Students are motivated to improve their initiation in reaching their goals.
- Students are able to scan through the reading material available to them.
- Many of the needs of students are best met by learning process. The students are encouraged to learn by themselves for their present and future needs.
- Students are able to do better in competitive examinations and get placed in suitable companies.

#### 9.5. Career guidance, Training, Placement

(10)

(The institution may specify the facility, its management and its effectiveness for career guidance including counseling for higher studies, campus placement support and industry interaction)

#### Career guidance, Training, Placement

NHCE offers career guidance and placement on all aspects of career planning, job searching and post-graduate studies. College will provide individual counseling for all the students towards reaching goals.

#### I. Availability of career guidance facilities:

- The college has career guidance and placement cell with 14 full time staff members, including a full time placement officer to provide career guidance and placement training to the students.
- The placement cell organizes on-campus and off-campus recruitments and pre placement training programs in aptitude test, group discussions, interviews and presentation.

- Mock interviews and GDs are conducted on a regular basis so as to equip final and pre-final students to face the challenges of recruitment scenario.

## II. Career guidance, Training, Placement committee management

**Table 9.5.1:** Details of Career guidance, Training, Placement committee members

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr.S.Sujitha	Assoc. Prof.- EEE	Member
3	Dr. Mohan Kumar Naik	Assoc.- ECE	Member
4	Prof. Girish Tilak	Asst. Prof.- AU	Member
5	Prof. Govinda Raj	Asst. Prof.- MCA	Member
6	Prof. Sudharshan	Asst. Prof.- ME	Member
7	Prof. Bopanna K. D.	Asst. Prof.- ME	Member
8	Prof. Dasegowda	Assoc. Prof.- BT	Member
9	Mr.Sivabalan	Asst. Prof.- CSE	Member
10	Ms.Vandana	Asst. Prof.- ISE	Member
11	Ms. P. Suma	Asst. Prof. – Civil Engg.	Member
12	Dr.Sheelan Mishra	HOD-MBA	Member
13	Dr.Sainath	Professor- MBA	Member
14	Mr.Binod Kumar Singh	Training & Placement Officer	Member
15	Mr. Mahesh Prasad	Training & Placement Officer	Member
16	Mr.Rajendra Dama	Training & Placement Officer	Member
17	Mr.Pavan Kumar M.	Training & Placement Officer	Member
18	Ms.Manisha Joshi	Training & Placement Officer	Member
19	Mr.Anis Mirza	Training & Placement Officer	Member
20	Mr.Gopalakrishna	Training & Placement Officer	Member
21	Mr. Ravi Shankar	Training & Placement Officer	Member
22	Mr. Issac Gabrial	Training & Placement Officer	Member
23	Mr.Viswas	Student Representative	Member
24	Mr.Rajith Bose M.	Student Representative	Member
25	Mr.YashasBharadwaj	Student Representative	Member
26	Mr. Jai Kumar	Student Representative	Member
27	Dr.Lakshminarayana G.	Director- Training & Placements	Member- Secretary



### III. Career guidance and placement cell activities:




1. Review of eligibility students and contact sessions with eligible non-placed students.
2. Internships, Internship – cum – Placements, placements for all the students are planned time to time.
3. Training and Placement Officer (TPO) orients students on core companies' opportunities and preparations required for placements.
4. TPO interacts with companies for remaining student's placements and invite them for internships, internship –cum – placements.
5. TPO with HOD identifies students who require Soft skills training that is forwarded to Head – Life skills for necessary training sessions. Similarly students who require aptitude

development sessions are provided with additional sessions either through vendors and or internal resources.

6. Industry collaboration activities are with VMware India, SAP Labs India, Dell, EMC<sup>2</sup>, Schneider electric, Cisco, etc.

**Table: 9.5.2.** List of MOUs

Sl.No.	Name of the company	Objectives	Outcomes
1	 CoE - Schneider Electric India Private Limited and French Ministry of National Education	<ul style="list-style-type: none"> <li>To carry out vocational training programmes in initial and continuing education in the fields of electricity, automation and energy management.</li> <li>To develop, within an international framework of “academic-industry” links, training programmes in continuing education for technical teachers, training of young engineers and technicians and to prepare them for the job market in the field of electricity, automation and energy management.</li> </ul>	<p><b>POs:</b> PO1, PO2, PO3, PO4, PO5, PO6, PO12</p> <p><b>PSOs:</b> PSO1</p> <p>The MOU has resulted in setting up of laboratory in industrial automation. For academic year 2017-18 a course is offered on Industrial Automation as an industrial open elective in various departments and is a core subject for students of Electrical and Electronics Engineering.</p> <p>In future it is planned for valued added program for practicing engineers, teachers and students of other institution and colleges.</p>
2	 HP VerticaCoE	<ul style="list-style-type: none"> <li>The whole objective is to make fresh engineers and business management graduates more capable, creative &amp; have innovative approach in thinking.</li> <li>To develop resources those can be absorbed from College &amp; ready to perform in various sectors like Banking, Telecom, Manufacturing, E-commerce, Retail etc.</li> <li>HP E will be engaged in overall development of students will invite Industry professional to enhance Big Data Analytics skills through hands on sessions, guest lecturers etc.,</li> </ul>	<p><b>POs:</b> PO1, PO2, PO3, PO4, PO5, PO6, PO11, PO12</p> <p>Big data and data analytics is emerging area where skilled professionals are required. Courses are offered as an elective for the students of the Department to hone their skills in Big Data so that they are industry ready professionals.</p>

3	 VMware Academy IT	<ul style="list-style-type: none"> <li>• Faculty enablement or empowerment</li> <li>• Access to all VMware tools</li> <li>• Curriculums on Virtualization, Devops, MDM and other technological advancements</li> <li>• VMware academic recognition for students (equivalent to certification)</li> <li>• VMware vExperience (CoE)</li> <li>• Local student club including annual project competitions and others.</li> <li>• MOOC and other new offerings</li> </ul>	<p><b>POs:</b> PO1, PO4, PO5, PO9, PO10, PO12</p> <p>VMware IT Academy Program (vITA) is designed to introduce students to VMware technologies and equip them with technical skills needed for the modern IT world. Faculty/ Students will gain access to technology and contents from VMware, which in turn prepare them for the new IT world. Courses are offered as an elective for the students of the Department to hone their skills in VMware Technologies.</p>
4	 Adobe Adobe Digital COE	<ul style="list-style-type: none"> <li>• To train students on Adobe Suite of Products and Services</li> <li>• Adobe Experience Manager (AEM) joint certification</li> <li>• Adobe Experience Manager (AEM) curriculum as an Elective Paper to B.E and MCA students at 4th, 5th Semester level with credits attached to the course.</li> <li>• To deploy Digital Practice Projects by Wipro Technologies immediately after their 8th Semester examinations.</li> </ul>	<p><b>POs:</b> PO1, PO5, PO9, PO10, PO12</p> <p>Adobe is providing required technological and domain related expertise to faculties and students of New Horizon College of Engineering. Courses are offered as an elective for the students of the Department to hone their skills in Adobe Systems.</p>
5	 SAP Next Generation Lab	<ul style="list-style-type: none"> <li>• Hackathons where a corporate using / working on SAP technologies can provide problem statements for NHCE students to work out using SAP products.</li> <li>• Students can work on projects/ problem statements shared by corporate for a longer duration if such problem statements are arrived at.</li> <li>• SAP can support NHCE with putting in place mentors and experts from SAP who will train the students and hand hold the</li> </ul>	<p><b>POs:</b> PO1, PO5, PO9, PO10, PO12</p> <p>SAP modules are integrated as electives in NHCE courses. NHCE to be given special privilege for Industry Visit to SAP LABS.</p>



	students work on the solutions.	
	<ul style="list-style-type: none"> <li>SAP will expose students to the topics via the lectures such as on SAP HANA Cloud Platform, SAP S/4HANA – ERP, Analytics, Design Thinking.</li> </ul>	

#### IV. Pre-Placement Training

- Aptitude Development training sessions are conducted for all programmes of UG.
- VistaMind, Ethnus Consultants, Focus Academy for creative Education are engaged to conduct Aptitude Development training which is scheduled as part of academic schedules.
- Soft skills development sessions are scheduled for all UG programmes. PCC India handles Soft skills for all these students by the seasoned trainers experienced in corporate orientation.
- Technical and domain related sessions are conducted to all the students with basic programming subjects like C, Data Structures, Java and also trained with core subjects to highlight the fundamentals of Electrical and Electronics Engineering.

#### Value added programmes options offered at Department of Electrical and Electronics Engineering

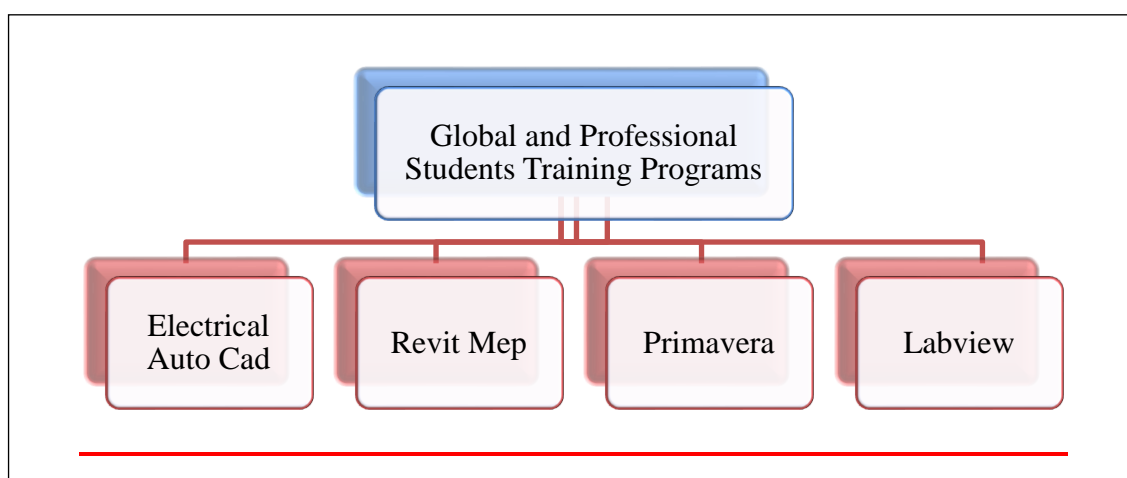


Figure: 9.5.1. Value added programmes options offered

#### V. Career guidance, Training & Placement Department Hierarchy

Director (Training & Placement)	-	1
Senior Manager (Training & Placement)	-	1
Manager (Training & Placement)	-	1
Senior Training & Placement Officers	-	4
Training & Placement Officers	-	2
Assistant Training & Placement Officers	-	1
Office Assistant	-	1

**NEW HORIZON SCHOLAR PROGRAM** has focused an initiative to tap potential students at 2<sup>nd</sup> & 3<sup>rd</sup> year level and groom them to the best possible opportunities in Corporate, Government or Higher Education purposes. The following interventions are provided for the selected students.

- Conduct problem solving and troubleshooting sessions by highly accomplished people in industry / institutions.
- Expose them on areas beyond the engineering textbooks – such as economy, emerging business areas, international affairs, social and ethical issues sustainable utilization of renewable energy etc...
- Focused technology sessions such as Big Data Analytics, SMAC (Social Media – Mobility Analytics – Cloud Computing), Digital marketing etc.
- Motivation sessions by high achievers in business, placement, entrepreneurship etc.
- Sessions on emerging technologies like Fuzzy logics, Genetic algorithms, Automation and Internet of Things (IOT), Artificial Intelligence (Artificial Neural Network)
- Conduct training programmes on various tools used in applied research i.e MATLAB, ORCAD/PSPICE, MI POWER, Electrical CAD etc...

**Selection of students:** Students are selected at 3<sup>rd</sup> / 4<sup>th</sup> semester level by heads of departments. The criteria for selection of students is broadly based on academic performance and exceptionally good students who may not be top in class but have the potential to excel in studies if they are given required support.

**Operational arrangements:** Identified students are provided an environment for each other to discuss debate and interact on their thoughts at regular intervals. An exclusive space of about one class room size is provided with necessary aids within the room such as journals, some latest books on innovation, creativity. Two computers with internet connectivity and Air Conditioning facility with biometric based entry are also provided. This space can be branded and showcased for other students to aspire to belong this group.

#### **VI. Career counseling for higher studies**

Career guidance and motivational lectures by Alumni, entrepreneurs, External guests and faculty are organized frequently.

- The placement cell organizes seminars on higher studies and conduct aptitude training sessions.
- Foundation course for Civil Services is offered for interested students appearing for Civil Services. Many books and periodicals are available in the library for the students.

#### **Skill development (Spoken English, Computer Literacy etc.)**

Communicative English has been additionally incorporated into the curriculum. The English Language communication lab with a capacity of 30 consoles has been set up with innovation.

**VII. Industry interaction for training / Internship / Placement**

- 1) College is encouraging students to go for industrial visits in each semester.
- 2) A separate industrial visit coordinator is deputed to organize all the activities related to industry.
- 3) Experts are invited from various MNCs and other industries to give lectures on recent domain based advancements, high throughput and cutting edge technologies & mechanisms; the state of art research topics, latest software's to bring enhance the knowledge in areas of Electrical and Electronics Engineering.
- 4) Industry academia interactions are further strengthened by sending the students for internship in companies according to MOUs signed by both college and industry.
- 5) There is industry interaction cell at college taking care of all the activities related to industry. This cell is sending students during semester break to various companies for internships.

**Industry – Institute Collaboration Activities:** The purpose of Industry Institute Collaboration cell which shall be referred to as IIC hereon is to ensure a paradigm shift in the thought process of a New Horizon student from J2C (Job to Career). This should lead a student towards identification of a SMART CAREER GOAL. Taking a step further, IIC would endeavor to establish connect between eminent faculty members and the relevant industries to join hands and work towards mutually and beneficial and relevant Assignments/projects. The prime aim of IIC is to work towards making New Horizon College of Engineering, a respectable and most sort after Engineering college which provides the best amalgamation of innovation, entrepreneurship development, skill up gradation, passion and aptitude along with sound theoretical subject knowledge which in turn makes our student industry ready and innovators of tomorrow so that they can pursue their passion and think beyond job.

**VIII. HR meets**

HR meets are conducted by inviting HR managers of various MNC and organization for interaction and collaboration with the student.

**IX. Guidance by external agency for higher studies / foreign studies**

Regular seminars are conducted by the external agency.

**X. Placement process and support for students****1) Eligibility for campus placements**

- a) Standard companies such as product companies, software solution companies, Core companies etc., allow students with 60% and above marks in their current programme without any backlogs as on the date of recruitment and minimum aggregate of 70% attendance in all the training programs conducted by New Horizon.
- b) Dream company opportunities for students are given at the discretion of NHCE. However students can submit a letter to placement office indicating their choice of 'Dream

Company' at least one day before the dream company's campus recruitment event at NHCE.

- c) The following category of students will be provided opportunities in Technical support, Technical writing, Techno-Commercial sales, Technical service, Business Analytics and other profiles.
- Students with less than 60% marks but cleared all subjects in their current programme.
  - Those who have less than 70% aggregate attendance in all training programs.
  - Those students with year backs.
  - Students, who skip participating recruitment drives two times for 1 category companies above, would be brought under category 3 companies.
- d) Students who have more than ONE backlog at 7<sup>th</sup> semester Engineering level are provided with some opportunities.

## 2) NHCE Training & Placement team

- a) Each department has a faculty placement coordinator for a better coordination and timely flow of information about the training and placements to the concerned.
- b) Each department (section wise) has two student coordinators (one male and one female)
- c) A training coordinator monitors the task assigned to all the department faculty coordinators and the student coordinator.

### Efficacy of career Guidance, Training, Placement

**Table 9.11:** Impact of career guidance, training, placement and certification

Sl. No.	Academic year	Total no. of students	No. of students placed	No. of students admitted to higher studies	No. of students as entrepreneur	No. of students having internship certificate
1	2017-18	93	46 (on going)	-	-	32
2	2016-17	97	87	4	3	31
3	2015-16	107	91	3	3	10

### 9.6 Entrepreneurship Cell

(5)

(The institution may describe the facility, its management and its effectiveness in encouraging entrepreneurship and incubation)

#### Entrepreneurship cell

- NH-EDC was established in August 2011, under the aegis of Department of Management Studies. NH-EDC is headed by Dr. Sheelan Mishra, Prof. & HoD - MBA with a team of faculty coordinators from other departments of the college.
- The goal of NH-EDC is to assist students, entrepreneurs, including Institutes' faculty, with pre-venture, start-up or existing business with financial management, marketing, technology and product development and commercialization issues.
- Working in collaboration with National Entrepreneurship Network (NEN), since its inception, NH-EDC has conducted various activities for the college students creating and promoting entrepreneurship awareness at the campus. E-week is one of such initiatives where array of activities are conducted raising the spirit of innovation and creativity which are considered as sparkplugs of entrepreneurship.
- The students are given latest inputs about the industry, the changes happening and the expectations just to make them understand the employability options and opportunities to control unemployment and create better opportunities for youngsters.

#### I) Entrepreneurship Initiatives

- a) To create an environment for self-employment, promote innovation, incubation and Entrepreneurship development through formal and non-formal programs
- b) To introduce the concept of Entrepreneurship in curriculum at degree levels
- c) To develop management personnel at appropriate levels for non-corporate and unorganized sectors like education, rural development, small-scale industry etc
- d) To utilize the infrastructure facilities and technically trained manpower for the development of non-corporate and unorganized sectors.
- e) To promote employment opportunities
- f) Technology Commercialization Assistance and Management Evaluation
- g) Intellectual Property Rights/Management
- h) Help with Regulatory Compliance
- i) Feasibility Study (Technical and Financial)
- j) Help with Business Basics
- k) Marketing Assistance/Market Research/Pilot Study/Test Marketing.
- l) Enhancement of Marketing Skills, Commercialization/: Access to Bank Loans, Loan Funds and Guarantee Programs and Access to Angel Investors or Venture Capital etc
- m) Business Structuring Advisory: Help with Accounting/Financial Management/ Company Formation/Management Team Identification/HR Services
- n) Help with Presentation Skills and Business Etiquettes
- o) Comprehensive Business Training Programs

**II) Entrepreneurship Development Cell facilities:****Table 9.6.1:** List of Entrepreneurship Development Cell facilities and physical infrastructure at NHCE

Sl. No.	Description	Number
1	Computer	3
2	Printer	3
3	Scanner	1
4	LCD Projector	1
5	Interactive White Board	1
6	Furniture	Tables-5, Chairs-30
7	Seminar Halls/Conference Rooms	1
	Discussion Rooms	1
8	Video Conferencing Facilities	50 Seats
9	Incubation Space (Cubicles)	1000 Sq.mt
10	Office Space	250 Sq.mt

**III) Entrepreneurship Development Cell Committee Management****Table 9.6.2:** Details of Entrepreneurship Development Cell committee members

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr. Gopala Krishnan	Dean R&D	Member
3	Mrs. Smitha B S	Asst. Prof.-AU	Member
4	Dr. H AnandaVardhan	HOD-BT	Member
5	Mr. Surendra B V	Professor-Civil	Member
6	Mrs. Gagan Mithra	Asst. Prof.-CSE	Member
7	Mr. Aravinda K	HOD-ECE	Member
8	Mr. Mohan B S	Asst. Prof.-EEE	Member
9	Mrs. Preethi	Asst. Prof.-ISE	Member
10	Dr. V Asha	Asso. Professor- MCA	Member
11	Dr. Sheelan Mishra	HOD-MBA	Member-Secretary

**IV) Effectiveness of EDC cell**

Following list provide the effectiveness of the EDC cell in developing the student skills to a level of Entrepreneur. List of Entrepreneurs is given below:

**Table 9.6.3:** List of Student Entrepreneurs from Department of EEE

S.No	Year of Graduation	Student Name and USN	DESIGNATION /COMPANY NAME/ REGISTERED ADDRESS	CIN NUMBER AND REGISTRATION NUMBER
1	2017	ABHIJEET SINHA 1NH13EE700	DIRECTOR, ASSAR NETWORKS (OPC) PRIVATE LIMITED F-217, JALVAYU VIHAR, GREATER NOIDA Gautam Buddha Nagar UP 201308 IN	DIN NUMBER:07669714 CIN NUMBER: U74999UP2016OPC088329 REGISTRATION NUMBER:88329
2	2017	RAHUL KUMAR 1NH13EE040	DIRECTOR SUN GLOW PHOTON PRIVATE LIMITED 46,47 & 48 Ground Floor, Sainik Enclave, Sector 7, Mohan Garden, SainikVihar, Uttam Nagar New Delhi West Delhi DL 110059 IN	DIN NUMBER: 7272486 CIN NUMBER: U74999DL2015PTC285469 REGISTRATION NUMBER: 285469
3	2017	POOJA KUMARI 1NH13EE730	DIRECTOR PURVA LAKSHYA BUILDCON PRIVATE LIMITED 54, NEHRU TOLA P.O. BEGAMPUR, P.S. CHOWCK, PATNA CITY PATNA BR 800009 IN	DIN NUMBER: 07883937 CIN NUMBER:U45200BR2016PTC0263 08 REGISTRATION NUMBER: 26308
4	2016	SHASHAWAT SWAROOP 1NH12EE752	DIRECTOR Start-up Tatynrds.com MB-08, FIRST FLOOR GALI NO - 1 SHAKARPUR East Delhi DL 110092 IN ,	DIN NUMBER: 07104879 CIN NUMBER: U74140DL2015PTC277949 REGISTRATION NUMBER: 277949
5	2016	SAGAR S 1NH12EE047	DIRECTOR EDUBEE SOLUTIONS PRIVATE LIMITED L-130, STREET NO 9 MAHIPALPUR DELHI South West Delhi DL 110037 IN	DIN NUMBER: 07559656 CIN NUMBER: U74999DL2016PTC303313 REGISTRATION NUMBER: 303313
6	2016	ROSHNI Z SHOLAPURWALA 1NH12EE042	DIRECTOR ZEONICS SYSTECH DEFENCE & AEROSPACE ENGINEERS PRIVATE LIMITED NO.3, ADAR, 10TH MAIN, 7TH CROSS, MARUTHINAGAR, MALLESHPALYA EXTN,NEW THIPPASANDRA P.O, BANGALORE Bangalore KA 560075 IN ,	DIN NUMBER: 07314825 CIN NUMBER: U03190KA1985PTC006621 REGISTRATION NUMBER: 6621
7	2015	YASHODHAR R 1NH11EE761	DIRECTOR GLOBAL CORE BPO SOLUTIONS PRIVATE LIMITED H. NO. R-246 FF, MOHAN GARDEN UTTAM NAGAR, NR. SANJEEVANI PUBLIC SCHOOL NEW DELHI North West DL 110059 IN	DIN NUMBER: 07231424 CIN NUMBER: U74140DL2015PTC284647 REGISTRATION NUMBER: 284647
8	2015	ANKUR PRASAD 1NH11EE706	APS REVANTA DEVELOPERS LLP PS4 INFRATECH PRIVATE LIMITED	DIN NUMBER: 6556753

**9.7. Co-curricular and Extra-curricular activities****(10)**

(The institution may specify the co-curricular and extra-curricular activities) (Quantify activities such as NCC, NSS etc.)

The college encourages the students to take part in both co-curricular and extra-curricular activities. The students are allowed to take part in various sport activities also.

**D) Co-curricular Activities**

Under co-curricular activities NHCE celebrates Engineers day, Teachers day, Nation Science Day, World Food Day, Ozone Day, International Water day, Earth Day along with Professional Society activities under IEEE, ISTE and annual day. Along with the above mentioned events various co-curricular activities like debate and discussion, Quiz, paper presentations, seminars and group discussion sessions are conducted.

The details of various categories of activities are listed below:

**i. Annual activities:****Table 9.7.1:** List of Annual activities

Sl. No.	Event	Facilities	Participants	Months of Conduction
1	College Annual Event (State level) (SARGAM)	Seminar hall, LCD, PCs, Digital and Social media, Accommodation	Students from Engineering colleges across city and state	2015-16 (Sept 2015) 2016-17 (Sept 2016) 2017-18 (Sept 2017)
2	National level Project Expo "TechHorizon"	Seminar hall, LCD, PCs, OHP, Accommodation	Students from Engineering Institutions	2015-16 (May 2016) 2016-17 (May 2017)
3	National level paper presentation "ElectroHorizon"	Seminar hall, LCD, PCs, Accommodation	Students from Engineering Institutions	2014-15 (May 2014) 2014-15 (May 2015) 2015-16 (May 2016) 2016-17 (May 2017)
4	Sports competition "Kreedayantrik"	Recreation centre, indoor & outdoor accommodation	Students from various Engineering disciplines	2016-17 (Oct 2016) 2017-18 (Oct 2017)





Figure 9.7.1: Glimpses of State level Inter-collegiate Fest ‘Sargam’



Figure 9.7.2: Glimpses of Technical Project exhibition- ‘Techhorizon’

## ii. Achievements in Co-curricular activities:

Table 9.7.2: Summary of achievements in Co-curricular activities

Sl. No.	Name of the activity	No. of students participated		
		2015-16	2016-17	2017-18
1	Technical workshops	16	47	108
2	Internships	10	31	32
3	Industrial Visit	105	480	120 (on going)
4	Patents Filed	-	3	4
5	Lead/Guest Talks organized	612	672	714

## Photo Gallery of the Cocurricular Activities



**Figure 9.7.3:** Two day's Workshop on Digital Marketing on 15th and 16th September 2017



**4<sup>th</sup>-A Industrial visit to "10MW grid connected Solar Power plant at Shivanasamudram, Belakavadi Village, Mandya district of Karnataka on 18<sup>th</sup> March 2017.**

**Figure 9.7.4.** Industrial Visit to Grid connected Solar Power Plant



**Figure 9.7.5** Industrial Visit to MGIRED



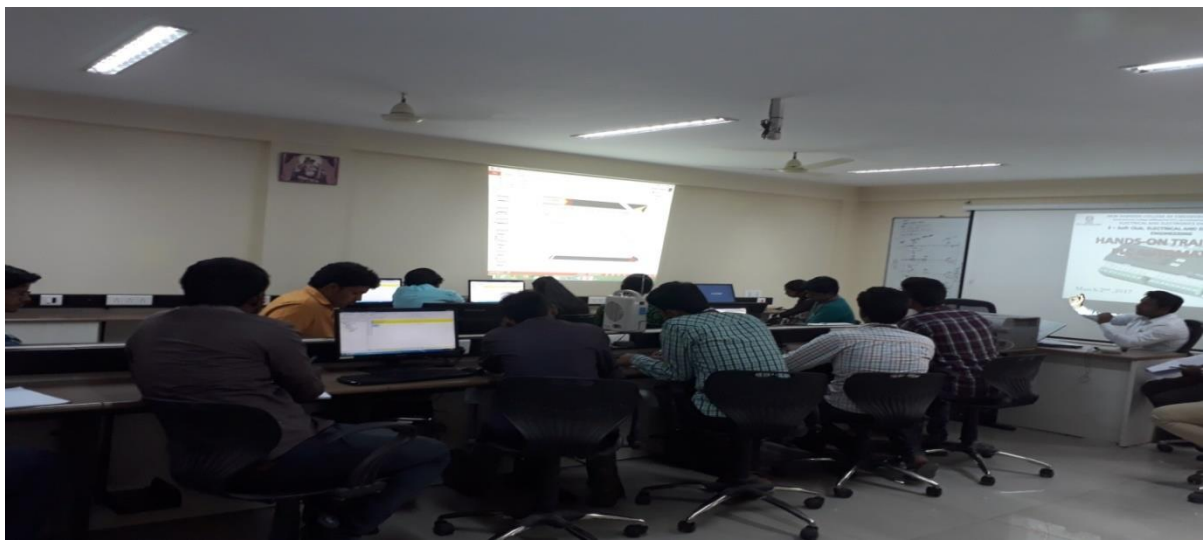
**Figure 9.7.6:** Two day's Workshop on Android for Electrical Engineers on 13<sup>th</sup> and 14<sup>th</sup> October 2017



Figure 9.7.7: Workshop on “REVITMEP AND PRIMEVERA” on 30th March 2017



Figure 9.7.8: Workshop on “INDUSTRIAL AUTOMATION” on 09th March 2017

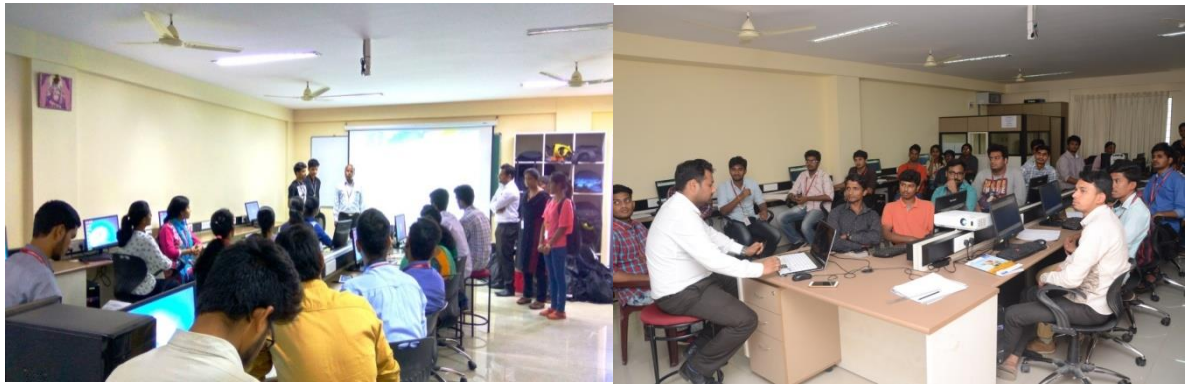


**Figure 9.7.9:** Hands on Training in “PLC Automation” on 2nd March 2017



**Department’s Green Energy Club organized one day work shop on “Solar Energy Harnessing”  
Department thanks, Roshni Sholapurwala(Alumni, EEE department) Stanford University, USA,  
Additional Director, ZEONICS SYSTEM DEFENCE & AEROSPACE ENGINEERING PVT LTD**

**Figure 9.7.10:** Workshop on Solar Energy Harnessing on 23<sup>rd</sup> March 2017



**Figure 9.7.11:** Workshop on “CIRCUIT DRAFTING USING ELECTRICAL AUTOCAD ON 1<sup>ST</sup> Feb 2017”



**Figure 9.7.12:** National Conference on Recent Technologies in Electrical and Electronics RTEE-2017 on 19.04.2017



**National Conference - TechXellence-2017**

**Figure 9.7.13:** National Conference on TechXellence 2017 on 5<sup>th</sup> May 2017

## II) Extra-Curricular activities

Table 9.7.3: List of Extra-Curricular activities organized every year

Sl. No.	Name of the Event	Sl. No.	Name of the Event
1	Republic Day	14	Birthday of Shaheed Bhagat Singh
2	Independence day	15	Birthday of Swami Vivekananda
3	Teachers Day	16	Birthday of Shaheed Hemu Kalani
4	Engineers Day	17	Birthday of Major SandeepUnni
5	Kannada Rajyotsava Day	18	Deepavali Celebration
6	International Women's Day	19	Founders' Day
7	Birthday of Subhash Chandra Bose	20	Induction Program
8	Birthday of Sir. M Visvesvaraya	21	Graduation Day
9	Birthday of Sardar Vallabhai Patel	22	Freshers' Day
10	Birthday of Rani Channamma	23	Annual Day "SARGAM"
11	Birthday of Jhansi Rani	24	Fresh Face
12	Birthday of Chatrapathi Shivaji	25	IT Quiz
13	Birthday of Dr. APJ Abdul Kalam		



Fig 9.7.14: Republic day celebration



Fig 9.7.15: Deepavali celebrations at campus



Fig 9.7.16: Kannada Rajyotsava Day celebrations



Fig 9.7.17: Birthday Celebration of Dr. APJ Abdul Kalam

**Availability of sports facilities:****Table 9.7.4:** List of indoor games available in the campus

Sl. No.	Name of the sport facility	Numbers available	Place of availability	Whether available beyond regular
1	Caroms	08 boards	Students Recreation Centre	YES
2	Chess	08 boards		
3	Table tennis	03 boards		
4	Madison ball	12		
5	Yoga mats	06		

**Table 9.7.5:** List of outdoor games available in the campus

Sl. No.	Name of the sport facility	Place of availability	Whether available beyond college regular timings
1	Volley ball	Open ground	YES
2	Basket ball		
3	Throw ball		
4	Hand ball		
5	Kho-kho		
6	Foot ball/Cricket		
7	Shot put		
8	Badminton		
9	Gym		

**Achievements in sport activities:****Table 9.7.6:** Summary of achievements of Electrical and Electronics Students in sport activities

Sl. No.	Name of the sport	No. of students participated and won in tournaments (VTU/State level)		
		2017-18	2016-17	2015-16
1	Basket ball	10	18	17
2	Football	07	15	09
3	Handball	03	10	11
4	Kabaddi	04	01	-
5	Badminton	-	03	02
6	Volley ball	-	01	01
7	Hockey	01	08	05
8	Net Ball	04	-	-
9	Judo	01	-	-
10	Cricket	08	06	01



**a) National Service Scheme (NSS):**

NSS is a voluntary association of young people in Colleges, Universities. The cardinal principal of the NSS program is that it is organized through participation in community service; gets a sense of involvement in the task of nation building.

**List of NSS Events:****Table 9.7.7:** Summary of NSS events conducted in the academic years of 2015-18

Sl. No.	Event Name	No. of students participated	Date
1	Blood donation camp (Lions club)	210	4/11/2016
2	Women Empowerment	70	17/10/2016
3	Orphanage Visit	25	02/10/2016
4	Tree Plantation	102	31/03/2016
5	Blood donation camp (NIMHANS & Kidwai Hospital, Bangalore)	143	12/9/2015
6	Blood donation camp (NIMHANS)	203	3/4/2015
7	Blood donation camp (Grace Blood Bank)	127	4/3/2015

**b) National Cadet Corps (NCC):** The College has applied for NCC facility in the campus. Some of the students have participated in national level NCC activities.

**Figure 9.7.18:** Orphanage Visit to "Love in action children home"**Figure 9.7.19:** Tree plantation by Principal**Figure 9.7.20:** Blood donation camp

<b>CRITERION 10</b>	<b>GOVERNANCE, INSTITUTION SUPPORT AND FINANCIAL RESOURCES</b>	<b>120</b>
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### 10.1. Organization, Governance and Transparency

(40)

#### 10.1.1. State the Vision and Mission of the Institute

(5)

*(Vision statement typically indicates aspirations and mission statement states the broad approach to achieve aspirations)*

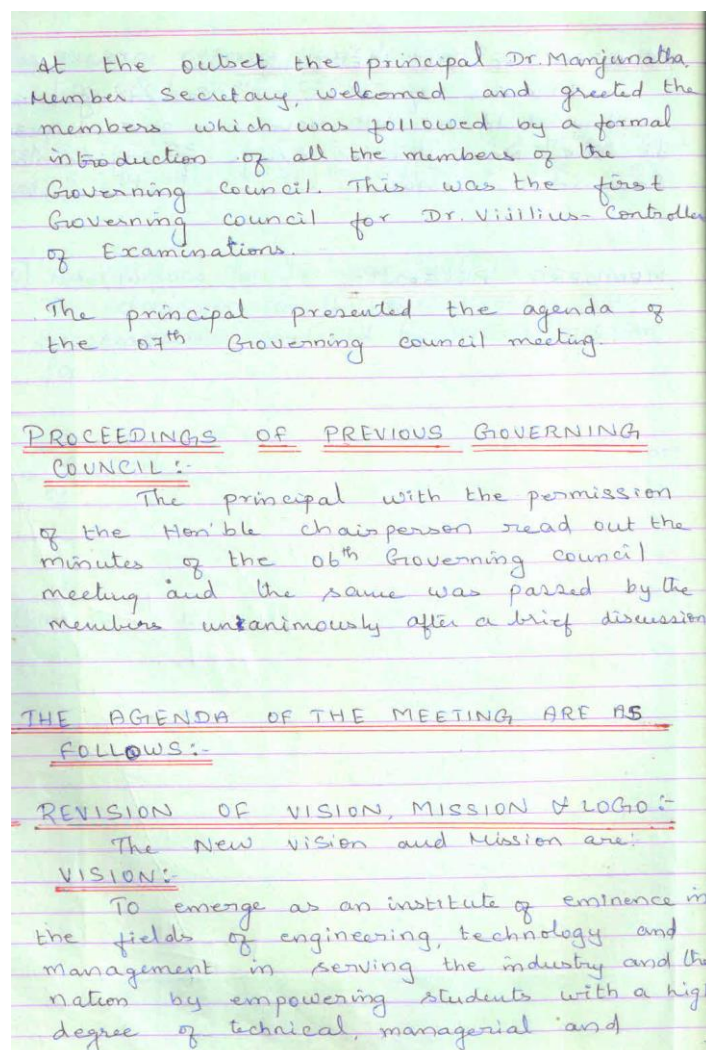
#### VISION OF THE INSTITUTE

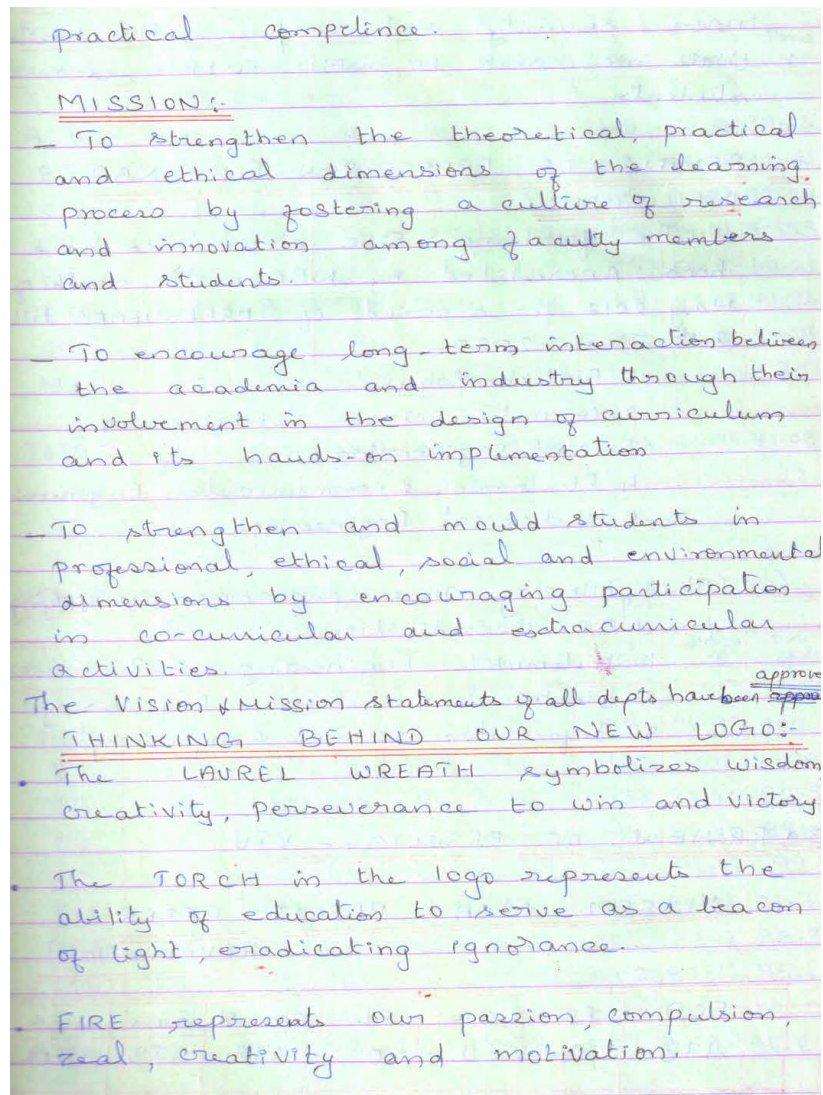
To achieve total quality in education and excellent knowledge management through specific, measurable, attainable, relevant, time-bound goals and continuous improvement methods.

#### MISSION OF THE INSTITUTE

To mould our students into a holistic personality accomplished in emotional, moral, intellectual, social and mental capabilities, besides inculcating a capacity for critical and lateral thinking.

#### MINUTES OF MEETING OF REVISED VISION AND MISSION OF INSTITUTE





### 10.1.2. Governing Body, Administrative Setup, Functions of Various Bodies, Service Rules, Procedures, Recruitment and Promotional Policies (10)

List the governing, senate and all other academic and administrative bodies; their memberships, functions and responsibilities; frequency of the meetings and attendance therein, in a tabular form. A few sample minutes of the meetings and action-taken reports should be annexed.

The published rules including service rules, policies and procedures; year of publication shall be listed. Also state the extent of awareness among the employees/students.

❖ **Governing Council**

The composition of the Governing Council is as follows:

**Table 10.1.2.1: Governing Council**

SL. NO.	MEMBER	ADDRESS	DESIGNATION	POSITION
1	Mrs.Renuka Manghnani	New Horizon College of Engineering, Marathalli, Outer Ring Road, Kadubisanahalli, Bangalore- 560 103	Executive Director, NHEI	Chairperson
2	Mr. H N Surya Prakash		Registrar	Member
3	Dr.R Bodhisatvan		Principal-NHC(M)	Member
4	Dr. Edwin Christopher		Principal-NHC(K)	Member
5	Dr. M. S. Ganesha Prasad		Dean-Student Affairs & HOD-ME	Member
6	Dr.Prashanth C S R		Dean-Academics	Member
7	Dr.Vijilius H Raj		Deputy Controller of Examinations	Member
8	Prof. S K Sinha	Professor, CEDT, IISc.,Bangalore- 560007	Educationist	Member
9	Dr. Mathew Maniwala	Professor, IIM (B), Bannerghatta Road, Bangalore- 560076	Educationist	Member
10	Prof. H. Devraj UGC Nominee	New No. 23/2 III Main Road, Gandhi Nagar, Adyar, Chennai- 600020	Commission (UGC) Nominee	Member
11	AICTE Nominee	Director, AICTE, Palace Road, Bangalore- 560001	Council (AICTE) Nominee	Member
12	DTE Nominee	Directorate of Technical Education, Bangalore – 560001	State Government Nominee	Member
13	Sri. S. B. Jangannavar	Visveswaraya Technological University, Jnana Sangama Belgavi- 590018	University (VTU) Nominee	Member
14	Dr.Manjunatha	New Horizon College of Engineering, Marathalli, Outer Ring Road, Kadubisanahalli, Bangalore- 560 103	Principal	Ex Officio Member Secretary

- The Governing Council of the college is the supreme administrative body.
- It is constituted as per the norms fixed by AICTE, New Delhi; Affiliating University and Govt. Of Karnataka.
- The Governing Council is ambitious and converts aspirations into outcomes with a rigorous framework of governance.
- The Governing Council approves the mission and strategic vision of the institution, long term business plans and annual budgets in accordance to meeting the interests of the stakeholders.

- The Head of the Institution is appointed as the Chief Executive of the Institution and suitable arrangements are made to monitor his/ her performance.
- The council ensures the establishment and monitoring systems of control and accountability including financial & operational controls and risk assessment; clear procedure for handling internal grievances.
- Governing Council monitors the institutions performance against the plans approved; and also benchmarks this against other institutions wherever possible.
- The Governing Council should ensure the achievement of the mission and vision of the organization; future academic plans and research activities should be promoted by providing direction of implementation and overall monitoring of the activities.
- Governing Council must approve the budgetary allocation towards infrastructure, staffing and R & D.
- The Chairperson is responsible for leading the governing body, is also responsible for its effectiveness and should ensure that the institution is well connected with the stake holders.
- The Chairperson should support the head of the institution in execution of the programmes.
- Frequency of meeting of the Governing Council is minimum two times a year or whenever needed.

#### **Major Responsibilities of the Governing Council**

- To uphold the legal stature of the college in view of AICTE, UGC, State Government and affiliating University (VTU) or any other body or agency.
- To take decisions regarding the intake and addition or discontinuation of any program accordingly recommending the Principal to take formal steps with the affiliating body to put this into action.
- Fix the fee structure and any charges applicable in accordance with the recommendation of the Central Planning and Budgeting Committee and prescribed fee structure of affiliating university.
- Extension, Renovation or Procurement plans recommended by Central Planning and Budgeting Committee.
- Decide the promotions or penalties as recommended by Central Academic Monitoring Committee.
- Approve the budget and recommend necessary corrections.
- Nominate and constitute other central committees for smooth discharge of responsibilities.

#### **Powers and Functions of the Governing Council**

The Governing Council shall exercise powers and discharge the functions as follows:

- Ensure proper management, maintenance and custody of the institution in relation to land, infrastructure, equipment and funds, including loans and grants received from AICTE, Central Government and Government of Karnataka.
- To ensure good condition of the campus.
- Instructions are imparted in accordance with norms and standards prescribed by Government of Karnataka and affiliating University.
- To ensure approval of appointment of staff by way of selection committee of the institute in accordance with the norms prescribed by AICTE and Government of Karnataka.
- To ensure implementation of provision of acts, instructions, rules and regulations prescribed by AICTE and Government of Karnataka in matters of service conditions of staff relating to appointment, leave, Provident Fund, age of retirement and disciplinary actions.

- To ensure observance and compliance of instructions issued by AICTE, Government of Karnataka and affiliating University.
- To ensure that the building, land, furniture and facilities are not being used for any other purpose (such as holding political meetings, communal meetings), except for running AICTE approved courses in the institute.
- To submit reports and returns from time to time to AICTE, Government of Karnataka and affiliating University.
- Create peaceful and favourable atmosphere for study free from ragging.

#### **Powers and Functions of Chairperson of Governing Council**

- The Chairperson shall intimate the date of the Governing Council meeting to the Principal-cum-Member Secretary for arrangement of Governing Council meeting. In case the Principal-cum-Member Secretary fails or ignores to arrange Governing Council meeting, the Chairperson can call for Governing Council meeting.
- In the event of taking vote on any decision and if a tie occurs, then decision of Chairperson shall be final.
- The Chairperson shall ensure that the decisions taken in Governing Council meeting are implemented by Member Secretary.
- The Chairperson shall ensure that the Governing Council is functioning properly to meet the mission of the Institute.

#### **Powers and Functions of Member Secretary of Governing Council**

- Member Secretary of Governing Council of the Institute shall be the Principal, who executes the decisions taken in the Governing Council on behalf of the Governing Council.
- By the order of the Chairperson, Member Secretary shall arrange the Governing Council meeting. In case of unfavouring situations, he/she will intimate the cancellation of the meeting the Chairperson and other members of the Governing Council.
- He would take correspondence on behalf of the Governing Council meeting in relation with the decisions taken in it and get it confirmed by the Chairperson and members present. With confirmation, the proceedings would be forwarded to AICTE, Government of Karnataka and affiliating University.
- The Member Secretary would maintain the properties of the institution and remain in-charge of it, the title deeds and papers related to the need of the institution.
- He will exercise powers and functions as maybe imposed and assigned by the Governing Council from time to time.
- The Member Secretary would issue appointment letters to the staffs selected by the Recruitment Committee after the approval from the sponsoring trust and the Governing Council of the institute.

## ❖ College Committees

A number of committees are present in the college that are formed taking into the considerations of the students and faculties. There is diversification that ensures that the committees address any issues faced by the stake holders and also aims for the improvements under the purview of the respective committees. The various committees and their in-charges are as follows:

Table 10.1.2.2: College Committees

SL. NO.	COMMITTEES	IN-CHARGES	DESIGNATION
1	Accreditation Committee	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME
2	Admission Committee	Mr.H N Suryaprakash	Registrar
		Ms.Aruna	Head- Admissions
3	Alumni Committee	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME
4	Anti- Ragging Committee	Mr. H N Suryaprakash	Registrar
		Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME
5	Anti- Sexual Harassment Committee	Mrs. Padma Narayanamurthy	Asso. Professor- Chemistry
6	Co- Curricular Committee	Dr.Asha V.	Asso. Professor - MCA
7	Community Development Centre (Public Welfare Committee)	Mr. H N Suryaprakash	Registrar
		Ms.Deepa Ganesh	HOD- Marketing & Branding
8	Counselling Committee	Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME
9	Cultural Committee	Dr.Anitha S. Rai	Head- Library & Information Centre
10	Curriculum Development Committee	Dr. C S R Prashanth	Dean- Academics
11	Disciplinary Committee	Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME
12	Energy Conservation Audit Committee	Dr. R Elumalai	HOD-EEE
		Mr.Karthik	Estate Manager
13	Examination Committee	Dr.Vijilius Helena Raj	Deputy Controller of Examinations (Autonomous)
14	Finance Committee	Mrs.Malathi Madhusudan	Director- Accounts and Finance
15	Hostel (Boys) Development & Welfare Committee	Mr. H N Suryaprakash	Registrar
16	Girls Hostel Development & Welfare Committee	Ms.Aruna	Head- Admissions
17	Infrastructure Development Committee	Dr. P S Niranjan	Head- GPE Program & HOD- Civil Engg.
		Mr.Rao	Project Manager

18	In-Plant Training/ Industrial/ Career Guidance/ Placement Committee	Dr.Lakshminarayana G.	Director- Training & Placements
19	Instrumentation Cell	Prof. C.K.Aravindha	HOD- ECE
20	Internal Quality Assurance Cell	Dr. K. Gopala Krishnan	Dean- R & D
		Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME
21	Library Committee	Dr.Anitha S. Rai	Head- Library & Information Centre
22	NCC Committee	Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME
		Mr. H N Suryaprakash	Registrar
23	NSS Committee	Dr.Anitha S. Rai	Head- Library & Information Centre
24	News Letter Committee	Dr.Chinnaiyan	Asso.Professor- ISE
25	Physical Education & Sports Committee	Mr.Suryaprakash H.N	Registrar
		Mr.Vinay J.T.	Physical Education Director
26	Professional Societies	Dr. K. Gopala Krishnan	Dean- R & D
27	Public Relations & Marketing Committee	Ms.Deepa Ganesh	HOD- Marketing & Branding
28	Purchase Committee	Mrs.MalathiMadhusudan	Director- Accounts & Finance
		Mr. H N Suryaprakash	Registrar
29	Recruitment Cell	Ms.Manjula V.	Head- HR
30	Research & Development Committee	Dr. K. Gopala Krishnan	Dean- R & D
31	SC/ST Welfare Cell	Mr. H N Suryaprakash	Registrar
32	Software / Hardware Training Committee	Dr. C S R Prashanth	Dean- Academics
33	College Internal Complaint Committee	Ms.Manjula V.	Head- HR
34	Staff Welfare Committee	Ms.Manjula V.	Head- HR
35	Student Mentoring Committee	Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME
36	Students Grievances Redressal Committee	Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME
37	Value Added Programs Committee	Dr. P S Niranjan	Head- GPE Program & HOD- Civil Engg.
38	Women Empowerment Committee	Mrs. Padma Narayanamurthy	Asso. Professor- Chemistry
39	Entrepreneurship Development Cell Committee	Dr. Sheelan Mishra	Head- MBA



❖ **Accreditation Committee**

As an upcoming engineering college in Bangalore as well as in Karnataka, the college which is already recognised by accreditation councils has formed this committee to look into the requirements for upcoming state and national level accreditations.

**Table 10.1.2.3:** Accreditation Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Dr. C S R Prashanth	Dean- Academics	Member
4	Dr. K. Gopala Krishnan	Dean- R & D	Member
5	Dr.Sheelan Mishra	HOD- MBA	Member
6	Dr.Anitha S Rai	Head- Library & Information Centre	Member
7	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member-Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	08-08-2017	5	2
	12-06-2017	7	Nil
CAYm1 (2016-17)	10-02-2017	7	Nil
	19-08-2016	7	Nil
	05-07-2016	7	Nil
CAYm2 (2015-16)	25-02-2016	6	1
	19-08-2015	All	Nil
CAYm3 (2014-15)	11-05-2015	All	Nil
	17-10-2014	All	Nil
CAYm4 (2013-14)	10-04-2014	All	Nil
	20-08-2013	06	1
CAYm5 (2012-13)	01-02-2013	6	1
	25-07-2012	All	Nil

## ❖ Admission Committee

This is an integral committee of the institute that deals with the admission of the students into the various undergraduate and postgraduate programs. Based on the students' qualifications and rankings in entrance exams, this committee provides admissions to the students to pursue their course of choice.

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Mrs.Malathi Madhusudan	Director- Accounts & Finance	Member
4	Ms.Manjula V.	Head- HR	Member
5	Ms.Aruna	Head- Admissions	Member-Secretary

**Table 10.1.2.4:** Admission Committee

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	09-04-2018	All	Nil
CAYm1 (2016-17)	04-04-2017	All	Nil
CAYm2 (2015-16)	20-04-2016	All	Nil
CAYm3 (2014-15)	13-04-2015	All	Nil
CAYm4 (2013-14)	22-04-2014	All	Nil
CAYm5 (2012-13)	18-04-2013	All	Nil

❖ **Alumni Committee**

Alumina of an educational institute contributes a lot to the growth of the organization. Besides being a major stakeholder of the institute, they give guidance and feedback to their juniors with respect to their career opportunities. This committee was constituted to keep constant rapport with the alumni.

**Table 10.1.2.5: Alumni Committee**

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr.C S R Prashanth	Dean- Academics	Member
3	Dr. P S Niranjana	Head- GPE Program &HOD- Civil Engg.	Member
4	Dr. R Elumalai	HOD- EEE	Member
5	Dr.Jitendranath Mungara	HOD- ISE	Member
6	Dr.Sheelan Mishra	HOD- MBA	Member
7	Dr.Ilango V.	HOD- MCA	Member
8	Dr.Revathi V.	HOD- Physics	Member
9	Dr. M S Ganesh Prasad	Dean-Student Affairs & HOD-ME	Member-Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
<b>CAY (2017-18)</b>	04-08-2017	7	2
	05-07-2017	5	4
<b>CAYm1 (2016-17)</b>	11-01-2017	8	1
	14-12-2016	9	Nil
	10-08-2016	8	1
<b>CAYm2 (2015-16)</b>	12-05-2016	19	02
	19-11-2015	18	03
<b>CAYm3 (2014-15)</b>	09-04-2015	20	01
	15-10-2014	20	01
<b>CAYm4 (2013-14)</b>	06-05-2014	All	Nil
	19-11-2013	19	02
<b>CAYm5 (2012-13)</b>	06-02-2013	20	01
	28-07-2012	17	04

❖ **Anti-Ragging Committee**

Ragging is a very common problem faced by students in the campus during and after college hours. The consequences of students who faced ragging are very serious and shocking. Thus this committee was constituted to control ragging and provide relief to students who come under this shadow. The committee has the powers to take stringent action on students involving in such activities. Committee comprises of the following members.

**Table 10.1.2.6: Anti-Ragging Committee**

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Ms.Aruna	Head- Admissions	Member
4	Dr. C S R Prashanth	Dean- Academics	Member
5	Dr.Revathi V.	HOD- Physics	Member
6	Ms.Harini Govindan	Student Counsellor	Member
7	Mr.Devraj R.	Senior Warden- Boys Hostel	Member
8	Ms. Shanti P.	Senior Warden- Girls Hostel	Member
9	Mr. Harish	Student Representative	Member
10	Ms.Bhavana	Student Representative	Member
11	Ms.Sreeja	Parent	Member
12	Mr.Karthik	Parent	Member
13	Mr.Nanjundiah	BEO (Retd.)	Member
14	Police Inspector- Marathalli Police Station		Member
15	Dr. M S Ganesha Prasad	Dean-Student Affairs & HOD-ME	Member-Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	22-01-2018	14	01
	20-07-2017	13	02
CAYm1 (2016-17)	11-01-2017	14	01
	23-07-2016	13	02
CAYm2 (2015-16)	21-01-2016	14	01
	22-07-2015	13	02
CAYm3 (2014-15)	20-01-2015	14	01
	16-07-2014	All	Nil
CAYm4 (2013-14)	27-01-2014	14	01
	31-07-2013	All	Nil
CAYm5 (2012-13)	21-01-2013	13	02
	26-07-2012	14	02

❖ **Anti-Sexual Harassment Committee**

Sexual Harassment is a very sensitive issue and the students facing such problems will not be in a mind-set to address these issues. Thus this committee was constituted to tackle such problems and help the students. Powers are vested in the hands of the committee to take stringent action on students involving in such activities. The committee is constituted as follows.

**Table 10.1.2.7:** Anti-Sexual Harassment Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Ms.Manjula V.	Head- HR	Member
3	Ms.Aruna	Head- Admissions	Member
4	Dr.Revathi V.	HOD- Physics	Member
5	Ms.RevathiSrinivasan	Student Counselor	Member
6	Ms.Shanthi P.	Senior Warden- Girls Hostel	Member
7	Ms.Vijaya	Advocate	Member
8	Police Inspector- MarathalliPolice Station		Member
9	Ms.Bhavana	Student Representative	Member
10	Mrs. Padma Narayanamurthy	Asso. Professor- Chemistry	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	02-01-2018	All	Nil
	20-09-2017	09	01
CAYm1 (2016-17)	17-09-2016	All	Nil
	10-08-2016	09	01
	06-08-2016	09	01
CAYm2 (2015-16)	22-09-2015	07	03
CAYm3 (2014-15)	16-02-2015	09	01
	25-09-2014	All	Nil
CAYm4 (2013-14)	28-03-2014	09	01
	20-09-2013	All	Nil
CAYm5 (2012-13)	21-02-2013	09	01
	22-10-2012	09	01

❖ **Co-curricular Committee**

This committee of the college is constituted to look into the likes of the students, besides academics. Aimed at ensuring an overall development of the youngsters, the committee promotes various activities by forming clubs involving students, helping them excel in competitions.

**Table 10.1.2.8: Co-Curricular Committee**

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr.Anitha S. Rai	Head- Library & Information Centre	Member
3	Prof. Krishna Chandra	Asst. Professor-MCA	Member
4	Prof. Rakesh C.	Asst. Professor-ME	Member
5	Prof. Aravinda	HOD - ECE	Member
6	Akarsh R.	Student Representative	Member
7	Chandan Kumar V.T.	Student Representative	Member
8	Santhosh Kadali	Student Representative	Member
9	Dr.Asha V.	Asso. Professor - MCA	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	17-01-2018	All	Nil
	14-08-2017	08	01
CAYm1 (2016-17)	19-01-2017	All	Nil
	11-10-2017	08	01
CAYm2 (2015-16)	18-07-2016	08	01
	08-12-2015	06	02
CAYm3 (2014-15)	15-12-2014	All	Nil
	04-07-2014	06	02
CAYm4 (2013-14)	18-12-2013	All	Nil
	18-07-2013	08	01
CAYm5 (2012-13)	21-05-2013	06	03
	18-12-2012	08	01

❖ **Community Development Centre (Public Welfare Committee)**

This committee looks into the interest and development of the faculties and students of the college. Issues pertaining to campus facilities are addressed to this committee who resolve it.

**Table 10.1.2.9:** Community Development Centre (Public Welfare)

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Mrs.Malathi Madhusudan	Director- Accounts & Finance	Member
4	Ms.Manjula V.	Head- HR	Member
5	Ms.Deepa Ganesh	Head- Marketing & Branding	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	24-01-2018	All	Nil
CAYm1 (2016-17)	23-01-2017	All	Nil
CAYm2 (2015-16)	11-01-2016	All	Nil
CAYm3 (2014-15)	12-01-2015	All	Nil
CAYm4 (2013-14)	03-01-2014	All	Nil
CAYm5 (2012-13)	07-01-2013	All	Nil

❖ **Counselling Committee**

An essential committee in the college addressing issues of students. This committee was constituted to help distracted, diverted and students who lack concentration in studies to get back to studying. The committee includes the counsellors who assist and guide the students to get back to the curriculum.

**Table 10.1.2.10: Counselling Committee**

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Ms.Harini Govindan	Student Counsellor	Member
3	Ms.Revathi Srinivasan	Student Counsellor	Member
4	Dr.Sudha Thomas	Student Counsellor	Member
5	Ms. Cynthia M. War	Student Counsellor	Member
6	Ms.Rakhi N. Gopan	Student Counsellor	Member
7	Ms.Sunitha	Student Counsellor	Member
8	Dr. M. S. Ganesh Prasad	Dean-Student Affairs & HOD-ME	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
<b>CAY (2017-18)</b>	05-02-2018	07	01
	08-11-2017	07	01
	02-08-2017	06	02
<b>CAYm1 (2016-17)</b>	23-01-2017	05	03
	26-10-2016	08	Nil
	15-09-2016	07	01
	03-08-2016	07	01
<b>CAYm2 (2015-16)</b>	10-05-2016	07	01
	18-10-2015	06	02
<b>CAYm3 (2014-15)</b>	23-04-2015	07	01
	16-10-2014	All	Nil
<b>CAYm4 (2013-14)</b>	29-04-2014	All	Nil
	30-10-2013	All	Nil
<b>CAYm5 (2012-13)</b>	28-03-2013	All	Nil
	28-09-2012	All	Nil



## ❖ Cultural Committee

Based on the lines of the Co-curricular committee, the Cultural committee helps the students to distinguish themselves apart from their curriculum. Students are encouraged to take part in various cultural events in college and other colleges and showcase their talents.

Table 10.1.2.11: Cultural Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr.RevathiV.	HOD-Physics	Member
3	Dr.Asha V.	Asso. Professor - MCA	Member
4	Prof. Kavitha	Asst. Professor - ISE	Member
5	Prof. Shailaja	Asst. Professor-Life Skills	Member
6	Prof. Rakesh C.	Asst. Professor-ME	Member
7	Mr.Amrithnath	Student Representative	Member
8	Ms.Harshitha	Student Representative	Member
9	Dr.Anitha S. Rai	Head- Library & Information Centre	Member- Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	05-02-2018	08	01
CAYm1 (2016-17)	01-08-2017	All	Nil
CAYm2 (2015-16)	11-08-2016	08	01
	07-10-2015	08	01
CAYm3 (2014-15)	21-08-2015	All	Nil
	17-11-2014	08	01
CAYm4 (2013-14)	05-08-2014	All	Nil
	19-11-2013	08	01
CAYm5 (2012-13)	22-07-2013	All	Nil
	19-01-2013	All	Nil

## ❖ Curriculum Development Committee

This committee is essential with respect to the framing of the academic syllabus for undergraduate and postgraduate courses across all departments. The committee involving the Heads of all the Departments aims at framing a curriculum that brings out syllabus that meets the outside/ industry requirements and at the same time ensures teaching is done in a very effective way.

Table 10.1.2.12: Curriculum Development Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME	Member
3	Dr. P S Niranjan	Head- GPE Program &HOD- Civil Engg.	Member
4	Dr.Jitendranath Mungara	HOD- ISE	Member
5	Prof. C.K.Aravindha	HOD - ECE	Member
6	Dr. R Elumalai	HOD- EEE	Member
7	Dr.AnandaVardhan	HOD-BT	Member
8	Dr.Sheelan Mishra	HOD- MBA	Member
9	Dr.Ilango V.	HOD- MCA	Member
10	Dr.RevathiV.	HOD- Physics	Member
11	Dr. V.S. Anusuya Devi	HOD- Chemistry	Member
12	Dr. C S R Prashanth	Dean- Academics	Member- Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	08-02-2018	All	Nil
CAYm1 (2016-17)	16-10-2017	All	Nil
CAYm2 (2015-16)	20-01-2016	All	Nil
	10-06-2015	All	Nil
CAYm3 (2014-15)	02-02-2015	All	Nil
	27-10-2014	All	Nil
CAYm4 (2013-14)	20-01-2014	11	01
	29-07-2013	All	Nil
CAYm5 (2012-13)	16-01-2013	All	Nil
	10-09-2012	All	Nil

❖ **Disciplinary Committee**

Indiscipline is a serious aspect of concern amongst students owing to peer pressure and other kinds of distractions around them. Their behaviour changes and they react differently to various situations. This committee monitors the students and ensures that no indiscipline happens. Also, in the event of any indiscipline activities, action is taken by the committee.

**Table 10.1.2.13:** Disciplinary Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Dr.Lakshminarayana G.	Director- Training & Placements	Member
4	Dr. C S R Prashanth	Dean- Academics	Member
5	Dr. P S Niranjan	Head- GPE Program &HOD- Civil Engg.	Member
6	Dr. R Elumalai	HOD- EEE	Member
7	Dr.Jitendranath Mungara	HOD- ISE	Member
8	Dr.Sheelan Mishra	HOD- MBA	Member
9	Dr.Ilango V.	HOD- MCA	Member
10	Dr.Revathi V.	HOD- Physics	Member
11	Dr. V.S. Anusuya Devi	HOD- Chemistry	Member
12	Ms.Manjula V.	Head- HR	Member
13	Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
<b>CAY (2017-18)</b>	02-02-2018	12	01
	16-08-2017	All	Nil
<b>CAYm1 (2016-17)</b>	09-05-2017	All	Nil
<b>CAYm2 (2015-16)</b>	07-04-2016	11	02
	10-09-2015	All	Nil
<b>CAYm3 (2014-15)</b>	13-05-2015	All	Nil
	04-09-2014	All	Nil
<b>CAYm4 (2013-14)</b>	07-05-2014	All	Nil
	06-11-2013	All	Nil
<b>CAYm5 (2012-13)</b>	21-03-2013	All	Nil
	29-08-2012	All	Nil

❖ **Energy Conservation Audit Committee**

This committee constituted by the Electrical department, is responsible of an eco- friendly campus. They are responsible for conservation of electricity in the college campus buildings and ensure that there is no wastage for power, thus saving it for the future.

**Table 10.1.2.14:** Energy Conservation Audit Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr.Karthik	Estate Manager	Member
3	Mr. Mohan	Asst. Professor- EEE	Member
4	Mr.Inbasakaran	Asst. Professor- EEE	Member
5	Mr. Sunil	Asst. Professor- EEE	Member
6	Mr.Lithesh	Asst. Professor- EEE	Member
7	Dr. Mahesh K.	Professor- EEE	Coordinator
8	Dr. R Elumalai	HOD- EEE	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	24-08-2017	All	Nil
CAYm1 (2016-17)	31-03-2017	All	Nil
	13-02-2017	All	Nil
	13-10-2016	All	Nil
	07-10-2016	All	Nil
CAYm2 (2015-16)	02-02-2016	07	01
	06-01-2016	All	Nil
	03-08-2015	All	Nil
CAYm3 (2014-15)	16-02-2015	06	02
	10-09-2014	07	01
CAYm4 (2013-14)	06-01-2014	All	Nil
	08-07-2013	All	Nil
CAYm5 (2012-13)	07-01-2013	07	01
	23-08-2012	All	Nil

## ❖ Examination Committee

This committee monitors the autonomous examinations conducted in the college. Starting from the notification of the exam till the declaration of the results, the committee manages all the activities in co-ordination with the heads of the departments ensuring smooth running of the entire process.

Table 10.1.2.15: Examination Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr.Revathi V.	HOD- Physics	Member
3	Dr.Guruprasad	Professor- ISE	Member
4	Prof. Aravinda	HOD - ECE	Member
5	Dr.Vijilius Helena Raj	Deputy Controller of Examinations (Autonomous)	Member-Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	23-02-2018	05	Nil
	26-09-2017	05	Nil
CAYm1 (2016-17)	13-02-2017	05	Nil
	01-09-2016	05	Nil
CAYm2 (2015-16)	27-01-2016	All	Nil
	08-09-2015	All	Nil
CAYm3 (2014-15)	NA	NA	NA
CAYm4 (2013-14)	NA	NA	NA
CAYm5 (2012-13)	NA	NA	NA

## ❖ Finance Committee

This committee is responsible for all the monetary activities in the institution. Students' fee collection, funds for procurement of equipment, dispatching salaries and remuneration are under the purview of this committee.

Table 10.1.2.16: Finance Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME	Member
4	Dr. C S R Prashanth	Dean- Academics	Member
5	Dr. K. Gopala Krishnan	Dean- R & D	Member
6	Dr.Sheelan Mishra	HOD- MBA	Member
7	Ms.Geetha	Senior Accounts Executive	Member
8	Mrs.MalathiMadhusudan	Director- Accounts & Finance	Member- Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	19-03-2018	All	Nil
	20-09-2017	All	Nil
CAYm1 (2016-17)	14-03-2017	All	Nil
	19-09-2016	All	Nil
CAYm2 (2015-16)	18-03-2016	All	Nil
	15-09-2015	All	Nil
CAYm3 (2014-15)	19-03-2015	All	Nil
	08-09-2014	All	Nil
CAYm4 (2013-14)	10-03-2014	All	Nil
	13-09-2013		
CAYm5 (2012-13)	11-03-2013	All	Nil
	10-09-2012	All	Nil

❖ **Hostel (Boys) Development & Welfare Committee**

This committee looks into the requirement of the students (boys) staying on the campus, in the hostel. Aspects that this committee look into are the food, accommodation and the discipline in the hostel.

**Table 10.1.2.17:** Hostel (Boys) Development Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member
3	Mr.Devraj R.	Senior Warden	Member
4	Mr.SambashivaRao	Warden	Member
5	Mr.SundaraRao	Warden	Member
6	Mr.Pankajaksaan	Warden	Member
7	Mr. H N Suryaprakash	Registrar	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	29-01-2018	All	Nil
	25-07-2017	All	Nil
CAYm1 (2016-17)	20-01-2017	06	01
	06-10-2016	All	Nil
CAYm2 (2015-16)	25-02-2016	All	Nil
	28-07-2015	06	01
CAYm3 (2014-15)	30-01-2015	All	Nil
	23-07-2014	All	Nil
CAYm4 (2013-14)	20-01-2014	All	Nil
	23-07-2013	All	Nil
CAYm5 (2012-13)	22-01-2013	All	Nil
	23-07-2012	All	Nil

❖ **Hostel (Girls) Development & Welfare Committee**

On the same lines as the Boys hostel, this committee looks into the requirement of the students (girls) staying on the campus, in the hostel. Aspects that the committee look into are the food, accommodation and the discipline in the hostel.

**Table 10.1.2.18:** Hostel (Girls) Development Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME	Member
4	Ms. Shanti	Senior Warden	Member
5	Ms.Yogita	Warden	Member
6	Ms.Aruna	Head- Admissions	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	30-01-2018	All	Nil
	24-07-2017	05	01
CAYm1 (2016-17)	23-01-2017	All	Nil
	06-10-2016	05	01
CAYm2 (2015-16)	27-01-2016	All	Nil
	27-07-2015	All	Nil
CAYm3 (2014-15)	13-02-2015	05	01
	24-07-2014	All	Nil
CAYm4 (2013-14)	23-01-2014	All	Nil
	18-07-2013	All	Nil
CAYm5 (2012-13)	28-01-2013	All	Nil
	24-07-2012	All	Nil



❖ **Infrastructure Development Committee**

All hardware infrastructure requirements of the college are taken care by this committee. Furniture & furnishings, lights & fans, other essential infrastructure in the buildings and on the campus are provided by this committee.

**Table 10.1.2.19:** Infrastructure Development Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr.Rao	Project Manager	Member
3	Ms.Shailee	Quantity Surveyor	Member
4	Dr. P S Niranjana	Head- GPE Program & HOD- Civil Engg.	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	04-10-2017	All	Nil
	05-06-2017	All	Nil
CAYm1 (2016-17)	05-04-2017	All	Nil
	10-02-2017	All	Nil
	02-12-2016	All	Nil
	10-08-2016	All	Nil
CAYm2 (2015-16)	06-05-2016	All	Nil
	01-02-2016	All	Nil
	05-10-2015	All	Nil
CAYm3 (2014-15)	25-02-2015	All	Nil
	20-08-2014	All	Nil
CAYm4 (2013-14)	10-08-2013	All	Nil
CAYm5 (2012-13)	24-05-2013	All	Nil
	05-02-2013	All	Nil
	15-09-2012	All	Nil
	09-08-2012	All	Nil

❖ **In-Plant Training/ Industrial/ Career Guidance/ Placement Committee**

This committee is very essential for the graduating undergraduate and postgraduate students, aspiring to get placed in companies as well as to start companies of their own. In-Plant Training and Career Guidance are given to the students in their pre-final year and pre-final semester respectively, preparing them for the forthcoming campus interviews.

Table 10.1.2.20: In-Plant Training/Industrial/Career Guidance/Placement Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr.S.Sujitha	Assoc. Prof.- EEE	Member
3	Dr. Mohan Kumar Naik	Assoc.- ECE	Member
4	Prof. Girish Tilak	Asst. Prof.- AU	Member
5	Prof. Govinda Raj	Asst. Prof.- MCA	Member
6	Prof. Sudharshan	Asst. Prof.- ME	Member
7	Prof. Bopanna K. D.	Asst. Prof.- ME	Member
8	Prof. Dasegowda	Assoc. Prof.- BT	Member
9	Mr.Sivabalan	Asst. Prof.- CSE	Member
10	Ms.Vandana	Asst. Prof.- ISE	Member
11	Ms. P. Suma	Asst. Prof. – Civil Engg.	Member
12	Dr.Sheelan Mishra	HOD-MBA	Member
13	Dr.Sainath	Professor- MBA	Member
14	Mr.Binod Kumar Singh	Training & Placement Officer	Member
15	Mr. Mahesh Prasad	Training & Placement Officer	Member
16	Mr.Rajendra Dama	Training & Placement Officer	Member
17	Mr.Pavan Kumar M.	Training & Placement Officer	Member
18	Ms.Manisha Joshi	Training & Placement Officer	Member
19	Mr.Anis Mirza	Training & Placement Officer	Member
20	Mr.Gopalakrishna	Training & Placement Officer	Member
21	Mr. Ravi Shankar	Training & Placement Officer	Member
22	Mr. Issac Gabrial	Training & Placement Officer	Member
23	Mr. Viswas	Student Representative	Member
24	Mr.Rajith Bose M.	Student Representative	Member
25	Mr.YashasBharadwaj	Student Representative	Member
26	Mr. Jai Kumar	Student Representative	Member
27	Dr.Lakshminarayana G.	Director- Training & Placements	Member- Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2015-16)	02-02-2018	25	02
	10-11-2017	All	Nil
CAY (2016-17)	04-02-2017	26	01
	07-11-2016	All	Nil
	18-07-2016	All	Nil
CAY (2015-16)	06-02-2016	All	Nil
	07-11-2015	All	Nil
	18-07-2015	All	Nil
CAY (2014-15)	07-11-2014	All	Nil
	17-07-2014	All	Nil
CAY (2013-14)	08-11-2013	All	Nil
	15-07-2013	All	Nil
CAY (2012-13)	09-01-2013	All	Nil
	16-07-2012	All	Nil

## ❖ Instrumentation Cell

This body constituted in the college plays a very important role with respect to the laboratory equipment's. Timely calibrations and preventive maintenance ensures that the machines (electrical) do not come for repairs or come in less numbers. Thus this cell is responsible for keeping a check on the machines and certifying the same.

Table 10.1.2.21: Instrumentation Cell

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member
3	Dr.Elumalai	HOD- EEE	Member
4	Mr. Krishna Prakash	Systems Head	Member
5	Prof. C.K.Aravindh	HOD - ECE	Member-Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	11-10-2017	All	Nil
CAYm1 (2016-17)	15-05-2017	All	Nil
	19-08-2016	All	Nil
CAYm2 (2015-16)	19-05-2016	All	Nil
CAYm3 (2014-15)	22-05-2015	All	Nil
CAYm4 (2013-14)	23-05-2014	All	Nil
CAYm5 (2012-13)	24-05-2013	All	Nil

❖ **Internal Quality Assurance Cell (IQAC)**

This committee was constituted to ensure that all the standards with regard to curriculum are met. Any discrepancies with respect to internal valuation, methods of teaching-learning are addressed by this committee. The Principal is the Chairman of this committee and it is constituted as follows.

**Table 10.1.2.22: Internal Quality Assurance Cell (IQAC)**

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member
3	Dr. C S R Prashanth	Dean- Academics	Member
4	Dr. P. S. Niranjana	Head- GPE Program & HOD- Civil Engg.	Member
5	Dr.Sheelan Mishra	HOD- MBA	Member
6	Dr.Ilango V.	HOD- MCA	Member
7	Dr.Anitha S. Rai	Head- Library & Information Centre	Member
8	Mr. Raghu Ram	Student Representative	Member
9	Dr. K. Gopala Krishnan	Dean- R & D	Member-Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	09-08-2017	All	Nil
CAYm1 (2016-17)	10-05-2017	All	Nil
	22-03-2017	All	Nil
	25-01-2017	All	Nil
	06-09-2016	All	Nil
CAYm2 (2015-16)	07-07-2016	All	Nil
	05-05-2016	All	Nil
	28-03-2016	All	Nil
	16-01-2016	All	Nil
CAYm3 (2014-15)	09-07-2015	All	Nil
	17-04-2015	All	Nil
	26-02-2015	All	Nil
	10-12-2014	All	Nil
	15-10-2014	All	Nil
CAYm4 (2013-14)	05-02-2014	All	Nil
	29-10-2013	All	Nil
CAYm5 (2012-13)	28-05-2013	All	Nil
	14-11-2012	All	Nil

❖ **Library Committee**

Books and other e-learning media are very essential for gaining knowledge as learning is a continuous process. Faculties and students require resources to attain knowledge for the day-to-day requirements. The Library Advisory Committee headed by the Principal ensures all these requirements are fulfilled through the Member Secretary and the inputs from the other members. Procuring books, Technical Journals, Technical Magazines, Applying for access to E-Journals, Providing good reference books and adequate reading spaces are provided by this committee, which comprises the following members.

**Table 10.1.2.23:** Library Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member
4	Dr. C S R Prashanth	Dean- Academics	Member
5	Prof. C.K.Aravindha	HOD - ECE	Member
6	Dr.Revathi V.	HOD- Physics	Member
7	Dr.Sheelan Mishra	HOD-MBA	Member
8	Dr.Siddamallaiah	Principal Librarian(Retd.), NIMHANS	External Member
9	Ms.Priya	Student Representative	Member
10	Mr.Avi Goyal	Student Representative	Member
11	Dr.Anitha S Rai	Head – Library & Information Centre	Member-Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	11-12-2017	All	Nil
CAYm1 (2016-17)	13-05-2017	All	Nil
CAYm2 (2015-16)	03-05-2016	All	Nil
	14-12-2015	All	Nil
CAYm3 (2014-15)	05-05-2015	09	02
	13-12-2014	All	Nil
CAYm4 (2013-14)	09-04-2014	All	Nil
	13-12-2013	10	01
CAYm5 (2012-13)	15-04-2013	All	Nil
	12-09-2012	All	Nil

❖ **NCC Committee**

This committee in the college is constituted to look into the students interests inclined towards National Cadet Corps (NCC). NCC is the Indian military cadet corps, which is open to school and college students on voluntary basis. National Cadet Corps is a Tri-Services Organization, comprising the Army, Navy and Air Force, engaged in grooming the youth of the country into disciplined and patriotic citizens. The National Cadet Corps in India is a voluntary organization which recruits cadets from high schools, colleges and universities all over India. The committee in college has the same motto.

**Table 10.1.2.24: NCC Committee**

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Mr.Vinay J.T.	Physical Education Director	Member
4	Mr.PavanPrabhakar	Asst. Professor- ME	Member
5	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	02.02.2018	All	Nil
CAY (2016-17)	25.01.2017	All	Nil
CAY (2015-16)	19-04-2016	All	Nil
	21-09-2015	All	Nil
CAY (2014-15)	12-05-2015	All	Nil
	06-10-2014	All	Nil
CAY (2013-14)	15-05-2014	All	Nil
	17-09-2013	All	Nil
CAY (2012-13)	04-05-2013	All	Nil
	09-08-2012	All	Nil

## ❖ NSS Committee

The National Service Scheme is an Indian government-sponsored public service program conducted by the Department of Youth Affairs and Sports of the Government of India. Popularly known as NSS, the scheme was launched in 1969. Aimed at developing student's personality through community service, NSS is a voluntary association of young people in Colleges, Universities and at +2 level working for a campus-community linkage. The committee in college aims at moulding interested students on the same lines.

Table 10.1.2.25: NSS Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member
4	Dr.Mahesh K.	Professor- EEE	Member
5	Prof. Krishna Chandra	Asst. Prof.- MCA	Member
6	Mr.Santhosh	Student Representative	Member
7	Ms.Pratiksha	Student Representative	Member
8	Dr.Anitha S Rai	Head – Library & Information Centre	Member Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	19-01-2018	All	Nil
CAYm1 (2016-17)	08-07-2017	All	Nil
	09-01-2017	All	Nil
CAYm2 (2015-16)	04-01-2016	All	Nil
	07-07-2015	All	Nil
CAYm3 (2014-15)	01-01-2015	All	Nil
	04-07-2015	07	01
CAYm4 (2013-14)	08-01-2014	All	Nil
	09-07-2013	All	Nil
CAYm5 (2012-13)	03-01-2013	All	Nil
	04-07-2012	All	Nil

## ❖ News Letter Committee

Events and other happenings on the campus and off the campus with regard to the students and college is brought out in the college newsletter. The committee constituted helps to achieve this. Besides getting articles and covering the relevant issues; compiling, editing, printing and publishing of the newsletter is taken care by this committee.

Table 10.1.2.26: News Letter Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Ms.Deepa Ganesh	HOD- Marketing & Branding	Member
4	Mr.Md. Yasin	Student Representative	Member
5	Mr.Sumukh	Student Representative	Member
6	Dr.Chinnaiyan	Asso. Professor- ISE	Member- Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	02-02-2018	All	Nil
	07-08-2017	05	01
CAYm1 (2016-17)	03-01-2017	All	Nil
CAYm2 (2015-16)	03-05-2016	05	01
	02-01-2016	All	Nil
	14-12-2015	All	Nil
CAYm3 (2014-15)	05-05-2015	All	Nil
	13-12-2014	All	Nil
CAYm4 (2013-14)	09-04-2014	All	Nil
	13-12-2013	All	Nil
CAYm5 (2012-13)	15-04-2013	All	Nil
	12-09-2012	All	Nil



❖ **Physical Education & Sports Committee**

Parallel to studies, in order to give motivation and an opportunity to excel in sports to interested students, this committee looks into the needs of budding sports persons. The college campus has facilities and equipment for a number of sports, for which there is good participation & boys and girls, pursuing undergraduate and postgraduate programs. Students participate in the sports, helping them to perform well in college events at state and national levels.

**Table 10.1.2.27:** Physical Education & Sports Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Surya Prakash	Registrar	Member
3	Mr.PrasannaVenkatesh	Coach	Member
4	Sanjay H. R.	Student Representative	Member
5	Ms. Monica Yadav	Student Representative	Member
6	Mr.Vinay J.T.	Physical Education Director	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	17-01-2018	All	Nil
	27-06-2017	All	Nil
CAYm1 (2016-17)	16-01-2017	All	Nil
	20-06-2016	All	Nil
CAYm2 (2015-16)	20-01-2016	All	Nil
	10-06-2015	All	Nil
CAYm3 (2014-15)	02-02-2015	All	Nil
	27-10-2014	All	Nil
CAYm4 (2013-14)	20-01-2014	All	Nil
	29-07-2013	All	Nil
CAYm5 (2012-13)	16-01-2013	All	Nil
	10-09-2012	All	Nil

## ❖ Professional Societies

Membership in Professional Societies is very essential to and individual as well as an institute as a whole. Amongst the various state, national and international professional societies, the same is reflected, where faculties as well as students and student groups are members. The committee encourages and promotes in obtaining memberships for faculties and students.

Table 10.1.2.28: Professional Societies

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member
3	Dr. C S R Prashanth	Dean- Academics	Member
4	Dr. P S Niranjan	Head- GPE Program & HOD- Civil Engg.	Member
5	Dr. R Elumalai	HOD- EEE	Member
6	Dr.JitendranathMungara	HOD- ISE	Member
7	Prof. C.K.Aravindh	HOD - ECE	Member
8	Dr.AnandaVardhan	HOD-BT	Member
9	Dr.Sheelan Mishra	HOD-MBA	Member
10	Dr.Ilango V.	HOD- MCA	Member
11	Dr.Anitha S. Rai	Head- Library & Information Centre	Member
12	Dr.Revathi V.	HOD- Physics	Member
13	Dr.V.S.Anusuya Devi	HOD- Chemistry	Member
14	Dr.Vijilius Helena Raj	Deputy Controller of Examinations (Autonomous)	Member
15	Dr. K. Gopala Krishnan	Dean- R & D	Member-Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	17-10-2017	All	Nil
	09-08-2017	All	Nil
CAYm1 (2016-17)	10-04-2017	All	Nil
CAYm2 (2015-16)	05-05-2016	All	Nil
	08-03-2016	All	Nil
	20-10-2015	14	01
CAYm3 (2014-15)	10-05-2015	All	Nil
	06-04-2015	All	Nil
	16-09-2014	All	Nil
CAYm4 (2013-14)	23-04-2014	13	02
	05-11-2013	All	Nil
CAYm5 (2012-13)	17-04-2012	All	Nil

❖ **Public Relations & Marketing Committee**

An essential committee in the running of the organization, this committee is a preface for the admission committee. This committee is required to have a constant rapport with the public and must ensure that people know about the institution so as to help students who want to pursue undergraduate and postgraduate programs to get admission to the college.

**Table 10.1.2.29:** Public Relations & Marketing Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member
4	Ms.Manjula	Head- HR	Member
5	Mr. Deepak Kumar	Web Developer	Member
6	Ms.Deepa Ganesh	Head- Marketing & Branding	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	26-03-2018	All	Nil
	12-08-2017	All	Nil
CAYm1 (2016-17)	28-02-2017	All	Nil
CAYm2 (2015-16)	03-05-2016	All	Nil
	14-12-2015	All	Nil
CAYm3 (2014-15)	05-05-2015	All	Nil
	13-12-2014	All	Nil
CAYm4 (2013-14)	09-04-2014	All	Nil
	13-12-2013	All	Nil
CAYm5 (2012-13)	15-04-2013	All	Nil
	12-09-2012	All	Nil

❖ **Purchase Committee**

This committee of the college is constituted to meet all the hardware requirements for the smooth running of the institute. Requisitions given by all the departments for its running are provided by this committee.

**Table 10.1.2.30: Purchase Committee**

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Mr.Umesh	Purchase Officer	Member
4	Mr.Premnathan	Stores In-charge	Member
5	Mrs.MalathiMadhusudhan	Director- Accounts & Finance	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAYm1 (2016-17)	05-04-2017	All	Nil
CAYm2 (2015-16)	18-04-2016	All	Nil
CAYm3 (2014-15)	15-04-2015	All	Nil
CAYm4 (2013-14)	10-04-2014	All	Nil
CAYm5 (2012-13)	16-04-2013	All	Nil

### ❖ Recruitment Committee

This committee of the college is responsible for the recruitment of staff for the college, which includes the non-teaching faculty also. The preliminary interview takes place at the department level under the HoD. The final round and selection comes under the purview of this committee.

**Table 10.1.2.31: Recruitment Committee**

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Dr. M. S. Ganesh Prasad	Dean-Student Affairs & HOD-ME	Member
4	Dr. C S R Prashanth	Dean- Academics	Member
5	Dr.Mahendra	External Expert	Member
6	Ms.Manjula V.	Head-HR	Member- Secretary

### Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
<b>CAY (2017-18)</b>	22-02-2018	All	Nil
	12-02-2018	All	Nil
	18-10-2017	All	Nil
	10-10-2017	All	Nil
	21-08-2017	All	Nil
<b>CAYm1 (2016-17)</b>	26-07-2017	All	Nil
	17-04-2017	All	Nil
	20-02-2017	All	Nil
	12-12-2016	All	Nil
	22-08-2016	All	Nil
<b>CAYm2 (2015-16)</b>	14-01-2016	All	Nil
<b>CAYm3 (2014-15)</b>	14-01-2015	All	Nil
<b>CAYm4 (2013-14)</b>	09-12-2014	All	Nil
	11-11-2014	All	Nil

### ❖ Research and Development Committee

Research and Development (R & D) plays a major role in the development of any organization, which also includes educational institutions. The research committee headed by the Principal was constituted for the same reason. The committee encourages faculties and students to publish technical papers and articles, write textbooks, apply for support for project work, get grants for research, apply for patents, etc. The committee Co-ordinator oversees all the activities. The members of this committee are as follows.

Table 10.1.2.32: Research &amp; Development Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member
3	Dr. C S R Prashanth	Dean- Academics	Member
4	Dr. P S Niranjan	Head- GPE Program &HOD- Civil Engg.	Member
5	Dr. R Elumalai	HOD- EEE	Member
6	Dr.JitendranathMungara	HOD- ISE	Member
7	Prof. C.K.Aravindha	HOD - ECE	Member
8	Dr.AnandaVardhan	HOD-BT	Member
9	Dr.Sheelan Mishra	HOD-MBA	Member
10	Dr.Ilango V.	HOD- MCA	Member
11	Dr.Anitha S. Rai	Head- Library & Information Centre	Member
12	Dr.Revathi V.	HOD- Physics	Member
13	Dr.V.S.Anusuya Devi	HOD- Chemistry	Member
14	Dr.Vijilius Helena Raj	Deputy Controller of Examinations (Autonomous)	Member
15	Dr. K. Gopala Krishnan	Dean- R & D	Member-Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
<b>CAY (2017-18)</b>	09-02-2018	All	Nil
	01-12-2017	All	Nil
	17-10-2017	All	Nil
	17-08-2017	All	Nil
<b>CAYm1 (2016-17)</b>	19-04-2017	All	Nil
	27-03-2017	All	Nil
	09-02-2017	All	Nil
	28-10-2016	All	Nil
<b>CAYm2 (2015-16)</b>	03-06-2016	All	Nil
	18-05-2016	All	Nil
	27-04-2016	All	Nil
	31-03-2016	All	Nil
	16-02-2016	All	Nil
	29-02-2016	All	Nil
	13-01-2016	14	01
	09-11-2015	All	Nil
	13-10-2015	All	Nil
	04-09-2015	All	Nil
<b>CAYm3 (2014-15)</b>	06-05-2015	All	Nil
	13-04-2015	All	Nil
	06-03-2015	All	Nil
	31-10-2014	All	Nil
	02-09-2014	13	02
<b>CAYm4 (2013-14)</b>	24-04-2014	All	Nil
	11-03-2014	All	Nil
	10-10-2013	All	Nil
<b>CAYm5 (2012-13)</b>	20-03-2013	All	Nil
	27-09-2012	All	Nil

## ❖ SC/ST Welfare Cell

This committee in the college is set up to look into the welfare of the SC/ST students admitted for the various courses. Besides this, the committee allocates monetary assistance to the students in the form of scholarship so as to help them pursue their education.

**Table 10.1.2.33: SC/ST Welfare Cell**

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr.Vishwanath Y.	Professor- ISE	Member
3	Mr. Ravi Kumar M.	Asst. Professor- ME	Member
4	Mr.Madhusudan	Asst. Professor- ME	Member
5	Mr. H N Suryaprakash	Registrar	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	26-02-2018	All	Nil
	01-09-2017	All	Nil
CAYm1 (2016-17)	20-02-2017	All	Nil
	17-08-2016	All	Nil
CAYm2 (2015-16)	10-02-2016	All	Nil
	25-08-2015	All	Nil
CAYm3 (2014-15)	24-02-2015	All	Nil
	08-09-2014	All	Nil
CAYm4 (2013-14)	12-02-2014	All	Nil
	12-08-2013	All	Nil
CAYm5 (2012-13)	11-02-2013	All	Nil
	21-08-2012	All	Nil

❖ **Software/ Hardware Training Committee**

This committee is responsible for given training to the staff (technical) who have been newly recruited on using the laboratory equipment in the respective departments. Besides, training is also given to them on operating any newly procured machines, so as to facilitate the smooth running of the laboratory sessions.

**Table 10.1.2.34:** Software/Hardware Training Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr.JitendranathMungara	HOD- ISE	Member
3	Prof. C.K.Aravindha	HOD - ECE	Member
4	Dr. R Elumalai	HOD- EEE	Member
5	Dr.Ilango V.	HOD- MCA	Member
6	Dr. C S R Prashanth	Dean- Academics	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	08-03-2018	All	Nil
	11-12-2017	All	Nil
CAYm1 (2016-17)	13-04-2017	All	Nil
	13-12-2016	All	Nil
CAYm2 (2015-16)	05-03-2016	05	01
	14-12-2015	All	Nil
CAYm3 (2014-15)	05-05-2015	All	Nil
	13-12-2014	All	Nil
CAYm4 (2013-14)	09-04-2014	All	Nil
	13-12-2013	All	Nil
CAYm5 (2012-13)	15-04-2013	All	Nil
	12-09-2012	All	Nil



## ❖ College Internal Complaint Committee

This committee in the college was formed to address all the internal issues of the faculties, so that they get solutions to the various problems. Suggestions and remedies are given by the members so that the problems are tackled by the faculties.

Table 10.1.2.35: College Internal Complaint Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Girija Srinivasalu	Director- NHQASDC	Chairman
2	Dr.Manjunatha	Principal	Member
3	Mr. H N Suryaprakash	Registrar	Member
4	Ms. Vijaya A	Asst Prof	Member (With Legal Knowledge)
5	Ms. Jagdeeswari	Chief- Training AWAKE (Association of Women Entrepreneurs of Karnataka)	Member (NGO)
6	Ms.Manjula V.	Head-HR	Member-Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	22-06-2017	All	Nil
CAYm2 (2016-17)	07-03-2017	All	Nil
	06-02-2017	All	Nil
CAYm2 (2015-16)	16-04-2016	All	Nil
	22-03-2016	All	Nil
	01-03-2016	All	Nil
	27-01-2016	All	Nil
	22-12-2015	All	Nil

❖ **Staff Welfare Committee**

This committee constituted on the similar lines of the Staff Grievances Redressal Committee looks into providing welfare schemes to all the staff of the college. The committee addresses the requirements of the staff and takes necessary steps of action.

**Table 10.1.2.36: Staff Welfare Committee**

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Mrs.Malathi Madhusudhan	Director- Accounts & Finance	Member
4	Ms.Manjula V.	Head-HR	Member- Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAYm1 (2016-17)	27-03-2017	All	Nil
	08-03-2017	All	Nil
	23-01-2017	All	Nil
CAYm2 (2015-16)	02-04-2016	All	Nil
	13-10-2015	All	Nil
	11-08-2015	All	Nil
	09-06-2015	All	Nil
CAYm3 (2014-15)	09-12-2014	All	Nil
	11-11-2014	All	Nil

## ❖ Student Mentoring Committee

This committee of the college is responsible for keeping a constant track of the students' performance at the department level. The heads of the department along with the class teachers allocate a group of students to a mentee (faculty) who keeps track of the academic performance of the student. Extreme cases are dealt in the presence of parents; some are referred to the Counsellors by the committee to resolve the issue.

Table 10.1.2.37: Student Mentoring Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr.C S R Prashanth	Dean- Academics	Member
3	Dr. P S Niranjan	Head- GPE Program &HOD- Civil Engg.	Member
4	Dr. R Elumalai	HOD- EEE	Member
5	Dr.JitendranathMungara	HOD- ISE	Member
6	Dr.Sheelan Mishra	HOD-MBA	Member
7	Dr.Ilango V.	HOD- MCA	Member
8	Dr.Revathi V.	HOD- Physics	Member
9	Dr.V.S.Anusuya Devi	HOD- Chemistry	Member
10	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member- Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	17-01-2018	07	03
	01-08-2017	08	02
CAYm1 (2016-17)	09-01-2017	067	03
CAYm2 (2015-16)	12-04-2016	All	Nil
	20-10-2015	All	Nil
CAYm3 (2014-15)	30-04-2015	All	Nil
	14-10-2014	11	01
CAYm4 (2013-14)	13-05-2014	All	Nil
	23-10-2013	All	Nil
CAYm5 (2012-13)	02-04-2013	All	Nil
	04-10-2012	All	Nil

## ❖ Students Grievances Redressal Committee

Adolescence students who come from various backgrounds to study face a lot of problems. Besides a number of distractions are available to take them off their path of learning. Thus to address the numerous problems of the diverse students from varied backgrounds, the students grievance redressal cell was formed to resolve the issues of the students. The committee is as follows.

Table 10.1.2.38: Students Grievances Redressal Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Mr. H N Suryaprakash	Registrar	Member
3	Dr. C S R Prashanth	Dean- Academics	Member
4	Dr. P S Niranjan	Head- GPE Program &HOD- Civil Engg.	Member
5	Dr. R Elumalai	HOD- EEE	Member
6	Dr.JitendranathMungara	HOD- ISE	Member
7	Dr.Sheelan Mishra	HOD-MBA	Member
8	Dr.Ilango V.	HOD- MCA	Member
9	Dr.RevathiV.	HOD- Physics	Member
10	Dr. V.S. Anusuya Devi	HOD- Chemistry	Member
11	Mr.Rakesh S.	Student Representative	Member
12	Mr.TanmayTiwari	Student Representative	Member
13	Mr.Vishwambhar R.K.	Student Representative	Member
14	Mr.Gaurav K. R. Gupta	Student Representative	Member
15	Ms.UtshaSaha	Student Representative	Member
16	Ms. G. AnkitaShetty	Student Representative	Member
17	Ms.AshaYadav	Student Representative	Member
18	Dr. M. S. Ganesha Prasad	Dean-Student Affairs & HOD-ME	Member-Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	01-02-2018	17	01
	29-08-2017	16	02
CAYm1 (2016-17)	17-01-2017	All	Nil
	27-10-2016	16	02
CAYm2 (2015-16)	01-03-2016	All	Nil
	04-11-2015	All	Nil
CAYm3 (2014-15)	02-04-2015	All	Nil
	07-11-2014	12	01
CAYm4 (2013-14)	07-05-2014	All	Nil
	05-09-2013	All	Nil
CAYm5 (2012-13)	12-03-2013	11	02
	04-09-2012	All	Nil

## ❖ Value Added Programs Committee

The college has a number of streams of study- Global, Professional & Executive. The streams are distinct and provide exclusive training to help in the overall development of the students. Organizing industrial trips at International and National levels, providing industry enriched training are some of the responsibilities of this committee.

Table 10.1.2.39: Value Added Programs Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr. M. S. Ganesha Prasad	Dean-Student Affairs &HOD-ME	Member
3	Dr.C S R Prashanth	Dean- Academics	Member
4	Prof. C.K.Aravindha	HOD - ECE	Member
5	Dr.AnandaVardhan	HOD-BT	Member
6	Dr.JitendranathMungara	HOD- ISE	Member
7	Dr.R Elumalai	HOD- EEE	Member
8	Dr.Sheelan Mishra	HOD-MBA	Member
9	Dr.Ilango V.	HOD- MCA	Member
10	Dr. Sridhar Kurse	HOD – AU	Member
11	Dr.P S Niranjan	Head- GPE Program &HOD- Civil Engg.	Member-Secretary

## Meetings:

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAY (2017-18)	05-10-2017	All	Nil
CAYm1 (2016-17)	08-05-2017	10	01
	05-10-2016	All	Nil
CAYm2 (2015-16)	05-05-2016	10	01
	05-10-2015	All	Nil
CAYm3 (2014-15)	02-05-2015	10	01
	10-02-2015	All	Nil
	26-10-2014	All	Nil
CAYm4 (2013-14)	08-05-2014	10	01
	12-02-2014	10	01
	20-09-2013	All	Nil
CAYm5 (2012-13)	18-02-2013	All	Nil
	10-09-2012	All	Nil

❖ **Women Empowerment Committee**

This committee of the college addresses issues regarding to the empowerment of the women staff on the campus. The committees' role is in ensuring that the powers are also vested in the hands of the women.

**Table 10.1.2.40:** Women Empowerment Committee

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr.Anitha S. Rai	Head- Library & Information Centre	Member
3	Dr.Sheelan Mishra	HOD-MBA	Member
4	Dr. V. S. Anusuya Devi	HOD-Chemistry	Member
5	Ms.Dharmambal	Asso. Professor- ECE	Member
6	Ms.Rajeswari	Asst. Professor- ISE	Member
7	Dr.Sudha Thomas	Student Counsellor	Member
8	Ms.Shanthi	Warden (Girls Hostel)	Member
9	Ms.Bhavana	Student Representative	Member
10	Mrs. Padma Narayanamurthy	Asso. Professor- Chemistry	Member-Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
<b>CAY (2017-18)</b>	12-02-2018	All	Nil
	11-10-2017	All	Nil
	12-08-2017	09	01
<b>CAYm2 (2016-17)</b>	15-10-2016	All	Nil
<b>CAYm2 (2015-16)</b>	31-03-2016	09	01
	11-09-2015	08	02
<b>CAYm3 (2014-15)</b>	27-03-2015	All	Nil
	22-09-2014	09	01
<b>CAYm4 (2013-14)</b>	29-03-2014	All	Nil
	23-09-2013	All	Nil
<b>CAYm5 (2012-13)</b>	06-03-2013	All	Nil
	28-09-2012	All	Nil

❖ **Entrepreneurship Development Cell Committee**

Entrepreneurship Development Cell [EDC] was established to assist students, entrepreneurs, including Institutes' faculty, with pre-venture, start-up or existing business with financial management, marketing, technology and product development and commercialization issues.

**Table 10.1.2.41: Entrepreneurship Development Cell committee**

SL. NO.	NAME	DESIGNATION	POSITION
1	Dr.Manjunatha	Principal	Chairman
2	Dr. Gopala Krishnan	Dean R&D	Member
3	Mrs. Smitha B S	Asst. Prof.-AU	Member
4	Dr. H AnandaVardhan	HOD-BT	Member
5	Mr. Surendra B V	Professor-Civil	Member
6	Mrs. Gagan Mithra	Asst. Prof.-CSE	Member
7	Mr. Aravinda K	HOD-ECE	Member
8	Mr. Mohan B S	Asst. Prof.-EEE	Member
9	Mrs. Preethi	Asst. Prof.-ISE	Member
10	Dr. V Asha	Asso. Professor- MCA	Member
11	Dr. Sheelan Mishra	HOD-MBA	Member-Secretary

**Meetings:**

Academic Year	Date of Meeting	No. of Members Attended	No. of Members Absent
CAYm1 (2016-17)	15-05-2017	All	Nil
CAYm2 (2015-16)	19-05-2016	All	Nil
CAYm3 (2014-15)	22-05-2015	All	Nil
CAYm4 (2013-14)	23-05-2014	All	Nil
CAYm5 (2012-13)	24-05-2013	All	Nil

At least once in a semester, Committee meetings are convened by the Member-Secretary to review the progress/developments in the college under the purview of the respective committees. Further, meetings are conducted more than once a semester, if needed.

Published rules, including service rules, policies and procedures is available in the college website. Extent of awareness about the same among employees/students is through electronic media-college website.

**10.1.3. Decentralization in working and grievance redressal mechanism****(10)**

List the names of the faculty members who have been delegated powers for taking administrative decisions. Mention details in respect of decentralization in working. Specify the mechanism and composition of grievance redressal cell including Anti Ragging Committee & Sexual Harassment Committee.

**Table 10.1.3.1:** Delegation of Powers

SL. NO.	DEPARTMENT	DELEGATION OF POWER TO	COMMON RESPONSIBILITY	EXCLUSIVE RESPONSIBILITY
1	Mechanical Engg.	Prof. & HOD	Administrative work of the Respective Department	Student Counselling & Mentoring, Student Medical Leaves
2	Civil Engg.			Global Trips & GPE Program
3	Electronics & Communication Engg.			College Club Activities
4	Computer Science & Engineering			IT Infrastructure
5	Bio- Technology			Waste Segregation & Management
6	Electrical and Electronics Engineering			Energy Management
7	Information Science and Engineering			SC/ST Welfare Cell
8	Automobile Engineering			College Club Activities
9	Basic Sciences			College News Letter
10	Library & Information Center	Head		Procurement of Books, e Resources and Journals; College Newsletter

Composition of Grievance Redressal Cell, Anti Ragging Committee & Anti- Sexual Harassment Committee has been mentioned in 10.1.2



**10.1.4. Delegation of financial powers****(10)**

Institution should explicitly mention financial powers delegated to the Principal, Heads of Departments and relevant in-charges. Demonstrate the utilization of financial powers for each year of the assessment years.

Budgets for running the department are very essential. These are prepared by every department before the commencement of the academic year. In this regard, Heads of the Departments, with senior faculties give the requisition to the Principal with regard to stationery, lab requirements, etc, for which budget allocations are approved by the Principal in discussion with the Management.

On the same lines, proposals are sent to the Principal for procuring new equipment for the labs, interactive technologies in the classrooms, conduction of workshops/ conferences/ seminars by the Heads of Departments for which fund allocations are made.

**Table 10.1.4.1: Financial Powers**

SL.NO.	DESIGNATION	FINANCIAL POWER ( inRs.)
1	Principal	50,000/-
2	Registrar	10,000/-
3	HODs of Engineering Departments	10,000/-
4	HODs of Basic Sciences	10,000/-
5	HODs of PG Studies	10,000/-
6	Head- Library & Information Center	10,000/-
7	Dean- Accounts & Finance	5,00,000/-
8	Dean- R & D	50,000/-

- The Finance Committee has the power to approve bills worth Rs. 10,00,000/- (Rupees Ten Lakhs only)
- Further, bills worth more than Rs. 10,00,000/- (Rupees Ten Lakhs) will be approved by the NEW HORIZON EDUCATIONAL & CULTURAL TRUST (NHCE)

**10.1.5. Transparency and availability of correct/unambiguous information in public Domain (5)**

(Information on policies, rules, processes and dissemination of this information to Stakeholders is to be made available on the web site)

Information on policies, rules, processes and its dissemination is made available to the stakeholders on the college website. Besides, the same is there in the college brochure also.

**10.2. Budget Allocation, Utilization, and Public Accounting at Institute level (30)**

Summary of current financial year's budget and actual expenditure incurred (for the institution exclusively) in the three previous financial years.

**Total Income at Institute level: For CFY, CFYm1, CFYm2 & CFYm3**

**CFY: Current Financial Year, CFYm1 (Current Financial Year minus 1), CFYm2 (Current Financial Year minus 2) and CFYm3 (Current Financial Year minus 3)**

**Table 10.2.1:** Institute Income and expenditure for CFY 2016-17

Total Income				Actual Expenditure (till 31/03/16)			Total No. of Students 4876
Fee	Govt.	Grant (s)	Other Sources (Placement Training, Bus Fees, etc.,)	Recurring Including Salaries	Non-recurring	Special Projects (Land, Building, WIP)	Expenditure per student
<b>519390450</b>	NIL	204500	61427871	421819930	35200582	4744489	94702

**Table 10.2.2:** Institute Income and expenditure for CFYm1 2015-16

Total Income				Actual Expenditure (till 31/03/16)			Total No. of Students 4772
Fee	Govt.	Grant (s)	Other Sources (Placement Training, Bus Fees, etc.,)	Recurring Including Salaries	Non-recurring	Special Projects (Land, Building, WIP)	Expenditure per student
<b>464908560</b>	NIL	4573615	47819165	395703591	25693559	49826733	98748

**Table 10.2.3:** Institute Income and expenditure for CFYm2 2014-15

Total Income				Actual Expenditure (till 31/03/15)			Total No. of Students 4255
Fee	Govt.	Grant (s)	Other Sources (Placement Training, Bus Fees, etc.,)	Recurring Including Salaries	Non-recurring	Special Projects (Land, Building, WIP)	Expenditure per student
408043400	NIL	3321000	31258473	334756762	29039003	102830523	109665

**Table 10.2.4:** Institute Income and expenditure for CFYm3 2013-14

Total Income				Actual Expenditure (till 31/03/14)			Total No. of Students 3845
Fee	Govt.	Grant (s)	Other Sources (Placement Training, Bus Fees, etc.,)	Recurring Including Salaries	Non-recurring	Special Projects (Land, Building, WIP)	Expenditure per student
350549515	NIL	4746681	17271560	246182080	9696970	88908602	89672

**Table 10.2.5:** Institute Budget and expenditure for assessment years 2016-17, 2015-16, 2014-15, 2013-14

Items	Budgeted In CFY	Actual expenses in CFY (31/03/17)	Budgeted in CFYm1	Actual expenses in CFYm1 (till 31/03/16)	Budgeted In CFYm2	Actual expenses in CFYm2 (till 31/03/15)	Budgeted In CFYm3	Actual expenses in CFYm3 (till 31/03/14)
Infrastructure Built- Up	30000000	23875237	60000000	60775909	120000000	116011657	100000000	91971609
Library	3500000	2969855	3650000	3663981	1200000	1114137	2500000	2037442
Laboratory Equipment	16500000	15569663	14100000	14207983	15000000	14907600	6500000	6280414
Laboratory Consumables	4500000	3962939	6500000	6884372	5000000	5130605	2500000	2844566
Teaching & Non-Teaching Staff salary	230000000	228149600	215000000	217105888	175000000	175367843	150000000	147675210
Maintenance and Spares	147500000	146651509	140000000	134705543	125000000	128806742	78000000	77043935
Research & Development	11000000	10173740	10000000	9248855	8200000	8158500	6500000	6153000
Training & Travel	15000000	13049675	15000000	13967288	8000000	7549353	6000000	6001042
Others (Global & Professional Training)	19000000	17362782	11000000	10664064	9550000	9579851	5000000	4780437
Total	477000000	461765000	475250000	471223883	466950000	466626288	357000000	344787655

**10.2.1. Adequacy of budget allocation****(10)**

(The institution needs to justify that the budget allocated during assessment years was adequate)

**Table 10.2.1.1:** Institute planned budget and expenditure

SL. NO.	ASSESSMENT YEAR	BUDGET ALLOCATED IN (RS.)	ACTUAL EXPENDITURE IN (RS.)	ADEQUATE/ NON ADEQUATE
1	CFY	477000000	461765000	Adequate
2	CFYm1	475250000	471223883	Adequate
3	CFYm2	466950000	466626288	Adequate
4	CFYm3	357000000	344787655	Adequate

**10.2.2. Utilization of allocated funds****(15)**

(The institution needs to state how the budget was utilized during assessment years)

**Table 10.2.2.1:** Utilization of funds

SL. NO.	ASSESSMENT YEAR	BUDGET ALLOCATED IN (RS.)	ACTUAL EXPENDITURE IN (RS.)	PERCENTAGE OF UTILIZATION
1	CFY	477000000	461765000	96.80%
2	CFYm1	475250000	471223883	99.15%
3	CFYm2	466950000	466626288	99.93%
4	CFYm3	357000000	344787655	96.57%

**10.2.3. Availability of the audited statements on the institute's website****(5)**

(The institution needs to make audited statements available on its website)

The audited statements is available on the institution website [www.newhorizonindia.edu](http://www.newhorizonindia.edu)

**10.3. Program Specific Budget Allocation, Utilization****(30)**

**Total Budget at program level: For CFY, CFYm1, CFYm2 & CFYm3**

**CFY: Current Financial Year, CFYm1 (Current Financial Year minus 1), CFYm2 (Current Financial Year minus 2) and CFYm3 (Current Financial Year minus 3).**

**Table 10.3.1:** Program specific budget allocation for CFY 2016-17

<b>Total Budget :46500000</b>		<b>Adequate Expenditure (till 31/03/17) :45172663</b>		<b>Total No of Students : 477</b>
<b>Non-Recurring</b>	Recurring	Non-Recurring	Recurring	Expenditure per student
<b>4000000</b>	42500000	3907670	41264993	<b>94702</b>

**Table 10.3.2:** Program specific budget allocation for CFYm1 2015-16

<b>Total Budget :44500000</b>		<b>Adequate Expenditure (till 31/03/16) :43547723</b>		<b>Total No of Students : 441</b>
<b>Non-Recurring</b>	Recurring	Non-Recurring	Recurring	Expenditure per student
<b>7000000</b>	37500000	6979138	36568584	<b>98748</b>

**Table 10.3.3:** Program specific budget allocation for CFYm2 2014-15

<b>Total Budget :46700000</b>		<b>Adequate Expenditure (till 31/03/15) :46607796</b>		<b>Total No of Students : 425</b>
<b>Non-Recurring</b>	Recurring	Non-Recurring	Recurring	Expenditure per student
<b>13200000</b>	33500000	13171457	33436339	<b>109665</b>

**Table 10.3.4:** Program specific budget allocation for CFYm3 2013-14

<b>Total Budget :42000000</b>		<b>Adequate Expenditure (till 31/03/14) :41517793</b>		<b>Total No of Students : 463</b>
<b>Non-Recurring</b>	Recurring	Non-Recurring	Recurring	Expenditure per student
<b>12000000</b>	30000000	11873101	29644292	<b>89672</b>

Table 10.3.5: Program specific budget and expenses for assessment years 2016-17, 2015-16, 2014-15, 2013-14

Items	Budgeted In CFY	Actual expenses in CFY (31/03/17)	Budgeted in CFYm1	Actual expenses in CFYm1 (till 31/03/16)	Budgeted In CFYm2	Actual expenses in CFYm2 (till 31/03/15)	Budgeted In CFYm3	Actual expenses in CFYm3 (till 31/03/14)
Infrastructure Built-Up	2700000	2335621	5870000	5616550	11600000	11587533	11460000	11074865
Library	330000	290529	350000	338603	113000	111283	250000	245341
Laboratory Equipment	1600000	1523119	1350000	1313018	1490000	1489008	780000	756263
Laboratory Consumables	420000	387679	650000	636213	520000	512458	350000	342532
Teaching & Non-Teaching Staff Salary	22500000	22318983	20500000	20063641	17527000	17516177	17800000	17782477
Maintenance and Spares	14500000	14346343	12600000	12448689	12900000	12865538	9300000	9277332
Research & Development	1000000	995257	860000	854724	825000	814891	750000	740920
Training & Travel	1300000	1276599	1320000	1290774	765000	754048	730000	722622
Others (Global & Professional Training)	2150000	1698533	1000000	985510	960000	958659	580000	575642
<b>TOTAL EXPENSES</b>	<b>46500000</b>	<b>45172663</b>	<b>44500000</b>	<b>43547723</b>	<b>46700000</b>	<b>46607796</b>	<b>42000000</b>	<b>41517993</b>
<b>PER STUDENT EXPENSE</b>		<b>94702</b>		<b>98748</b>		<b>109665</b>		<b>89672</b>
No. of students		<b>477</b>		<b>441</b>		<b>425</b>		<b>463</b>

**10.3.1. Adequacy of budget allocation****(10)**

(Program needs to justify that the budget allocated over the assessment years was adequate for the program)

Table 10.3.1.1: Program budget and expenditure

SL. NO.	ASSESSMENT YEAR	BUDGET ALLOCATED IN (RS.)	ACTUAL EXPENDITURE IN (RS.)	ADEQUATE/ NON ADEQUATE
1	CFY	46500000	45172663	Adequate
2	CFYm1	44500000	43547723	Adequate
3	CFYm2	46700000	46607796	Adequate
4	CFYm3	42000000	41517993	Adequate

**10.3.2. Utilization of allocated funds****(20)**

(Program needs to state how the budget was utilized during the last three assessment years)

**Table 10.3.2.1:** Utilization of allocated funds

SL. NO.	ASSESSMENT YEAR	BUDGET ALLOCATED IN (RS.)	ACTUAL EXPENDITURE IN (RS.)	PERCENTAGE OF UTILIZATION
1	CFY	46500000	45172663	97.14%
2	CFYm1	44500000	43547723	97.86%
3	CFYm2	46700000	46607796	99.80%
4	CFYm3	42000000	41517993	98.85%

**10.4. Library and Internet****(20)**

(Indicate whether zero deficiency report was received by the Institution for all the assessment years. Effective availability/purchase records and utilization of facilities/equipment etc. to be documented and demonstrated)

<b>Library Services</b>	Yes
<b>Carpet Area of library (in m<sup>2</sup>)</b>	4055 m <sup>2</sup>
<b>Reading Space (in m<sup>2</sup>)</b>	6703 m <sup>2</sup>
<b>Number of seats in reading space</b>	441
<b>Number of users (issue book) per day</b>	220
<b>Number of users (reading space) per day</b>	600
<b>Timings: Ground Floor</b>	24 hours, 365 days
<b>Timings: Lower Level</b>	
• <b>On Working Days</b>	8:00 am- 06:30 pm
• <b>On Holidays</b>	9:00 am- 05:00 pm
• <b>During Examination</b>	8:00 am- 06:30 pm
• <b>During Vacation</b>	8:00 am- 06:00 pm
<b>Number of Library Staff</b>	10
<b>Number of Library Staff with degree in Library</b>	08
<b>Management Computerization for Search, Indexing, Issue/Return records- Bar coding used</b>	Yes
<b>Bar Coding</b>	Yes
<b>Library Additional Services</b>	Internet, Journals, Conference Proceedings, Technical Magazines, Science Direct, Springer, ASCE, ProQuest, Taylor & Francis, K- Nimbus.

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**10.4.1. Quality of learning resources (hard/soft)****(10)**

- ❖ Relevance of available learning resources including e-resources
- ❖ Accessibility to students
- ❖ Support to students for self-learning activities

<b>Digital Library services</b>	Yes
<b>Availability of Digital Library contents</b>	Yes
<b>Number of Courses</b>	11
<b>Number of eBooks</b>	14736
<b>Availability of Exclusive Server</b>	Yes
<b>Availability of intranet/ Internet</b>	Yes
<b>Availability of Exclusive Space/Room</b>	Yes
<b>Number of users per day</b>	250
<b>Digital Library is provided in the Central Library where students can access all kinds of e-journals.</b>	<a href="http://ieeexplore.ieee.org/">http://ieeexplore.ieee.org/</a> <a href="http://www.sciencedirect.com/">http://www.sciencedirect.com/</a> <a href="http://www.crcnetbase.com/">http://www.crcnetbase.com/</a> <a href="http://www.tandfonline.com/">http://www.tandfonline.com/</a> <a href="http://link.springer.com/">http://link.springer.com/</a> <a href="http://ascelibrary.org">http://ascelibrary.org</a> <a href="http://www.knimbus.com/">http://www.knimbus.com/</a> <a href="http://search.proquest.com/">http://search.proquest.com/</a> <a href="http://nlist.inflibnet.ac.in/">http://nlist.inflibnet.ac.in/</a> <a href="http://www.asmedl.org">http://www.asmedl.org</a> <a href="http://saeintl.org">http://saeintl.org</a>
Students can access eBooks/journals using internet in the Library	
Ground Floor section of the Library is open 24 hours a day for utilization. They are spacious, well ventilated, having power sockets, lights & fans and Wi-Fi connectivity. The Digital Library, Video Conference Room, Reading Rooms are all located here. Lower level contains the Main Books Stock, Reference Section, Library Office and Photocopier Room.	
Library has resources for Undergraduate, Postgraduate and PhD students.	
Textbooks, Journals, Bound Volumes, Conference Proceedings, General Reference Material, Technical Magazines, Newspapers and CDs-DVDs are available for reference.	
<b>Video course online</b>	<ul style="list-style-type: none"> <li>• NPTEL-<a href="http://nptel.iitm.ac.in/">http://nptel.iitm.ac.in/</a></li> <li>• NDL (National Digital Library) by MHRD</li> <li>• GnanaSangama by Govt. of Karnataka</li> </ul>



**10.4.2. Internet****(10)**

- ❖ Name of the Internet provider:
- ❖ Available bandwidth:
- ❖ Wi-Fi availability:
- ❖ Internet access in labs, classrooms, library and offices of all Departments:
- ❖ Security arrangements:
  
- ❖ Name of the Internet provider:
  - BSNL and Jio Communication
  
- ❖ Available bandwidth:
  - 200 Mbps
  
- ❖ Wi-Fi availability: Yes
  - Campus is Wi-Fi enabled
  - About 40 access points are available in the campus
  
- ❖ Internet access in labs, classrooms, library and offices of all Departments: Yes
  - Internet can be accessed in labs through Wi-Fi. Few systems provided with internet connection.
  - Wi-Fi at the corridors gives access to internet in the classrooms.
  - Library has a designated browsing centre with about 50 systems having internet connection. Wi-Fi accessibility also available
  - Departments have designated systems with internet connection. Wi-Fi accessibility as well as Ethernet available.
  
- ❖ Security arrangements: Yes
  - Well trained electricians are available on campus for wiring and installation and constant monitoring. Safety measures like earthing are done to avoid electrical shocks.
  - Around 65 security guards are working in the college campus in shifts. Chief Security Officer (CSO) monitors the guards. Security guards are deployed at all blocks, hostels and at open spaces in the campus.



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AUTONOMOUS COLLEGE Permanently Affiliated to VTU, Approved by AICTE & UGC  
Accredited by NAAC with 'A' Grade

## Declaration

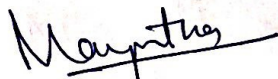
(The head of the institution needs to make a declaration as per the format given)

I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines in force as on date and the institute shall fully abide by them.

It is submitted that information provided in this Self Assessment Report is factually correct. I understand and agree that an appropriate disciplinary action against the Institute will be initiated by the NBA, in case any false statement/information is observed during pre-visit, visit, post visit and subsequent to grant of accreditation.

**Date: 20-03-2018**

**Place: Bangalore**

  
**Signature & Name**  
**(Dr. MANJUNATHA)**  
**Head of the Institution with seal**  
*Principal*  
New Horizon College of Engineering  
Bangalore

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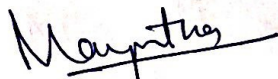
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