SAR Contents

PART A: Institutional Information

1. **Name and Address of the Institution:**
   Fr. Conceicao Rodrigues College of Engineering,
   Fr. Agnel Technical Complex,
   Bandstand, Bandra (West),
   Mumbai – 400 050, India.
2. **Name and Address of the Affiliating University:**
   University of Mumbai,
   M.G. Road,
   Fort, Mumbai – 400 032.
3. **Year of Establishment of the Institution:**
   1984
4. **Type of the Institution:**

University	
Deemed University	
Government Aided	
Autonomous	
Affiliated	√

5. **Ownership Status:**

Central Government	
State Government	
Government Aided	
Self financing	
Trust	√
Society	
Section 25 Company	
Any Other (Please specify)	

Provide Details:

6. **Other Academic Institutions of the Trust/Society/Company etc., if any:**

Name of the Institution	Year of Establishment	Program of Study	Location
Fr. Agnel School	1957	English Medium School	Bandra, Mumbai
Agnel Technical College	1969	Polytechnic	Bandra, Mumbai
Agnel Industrial Training Institute	1969	ITI	Bandra, Mumbai
Fr. Agnel Polytechnic	1982	Polytechnic	Vashi, Navi Mumbai

Fr. Agnel Jr. College	1982	Junior College	Vashi, Navi Mumbai
Fr. Agnel Technical School	1982	English Medium School	Vashi, Navi Mumbai
Fr. Conceicao Rodrigues Institute of Technology	1994	Engineering College	Vashi, Navi Mumbai
Fr. Conceicao Rodrigues Institute of Management studies	2001	Management Institute	Vashi, Navi Mumbai
Fr. Agnel Industrial Training Centre	2012	ITI	Vashi, Navi Mumbai
Fr. Agnel Junior College	1982	Junior College	Ambernath, Thane
Fr. Agnel Multipurpose School	2001	School	Ambarnath, Thane
Agnel Vocational Training Institute	1978	ITI	Goa
Agnel institute of food crafts and culinary sciences	1979	Vocational Training	Goa
Agnel Polytechnic	1981	Polytechnic	Goa
Padre Conceicao College of Engineering	1997	Engineering College	Goa
Agnel Entrepreneurship Development Institute	2000	-	Goa
Agnel institute of Technology and Design Centre of Incubation and Business Acceleration (CIBA)	2013	Engineering College	Goa
Fr. Agnel's Vidyankur School	2002	School	Pune
Fr. Agnel School	1979	School	Gautam Nagar, Noida
Fr. Agnel Polytechnic	1994	Polytechnic	Gautam Nagar, Noida

7. Details of all programs being offered by the institution under consideration:

S. No.	Program Name	Year of Start	Intake	Increase in intake, if any	Year of increase	AICTE Approval	Accreditation Status
1	Production Engineering	1984	60	-	-	Approved	Not accredited **Dates of Visit:** 15-17 October 2004.
2	Electronics Engineering	1987	60	-	-	Approved	Not accredited **Dates of Visit:** 15-17 October

							2004.
3	Computer Engineering	1991	60	-	-	Approved	Applying first time
4	Information Technology	2001	30	30	2010	Approved	Not eligible for accreditation

* Write applicable one:

- Applying first time
- Granted provisional accreditation for two years for the period (specify period)
- Granted accreditation for 5 years for the period (specify period)
- Not accredited (specify visit dates, year)
- Withdrawn (specify visit dates, year)
- Not eligible for accreditation
- Eligible but not applied

8. Programs to be considered for Accreditation vide this application:

S. No.	Program Name
1	UG in Production Engineering
2	UG in Electronics Engineering
3	UG in Computer Engineering

9. Total number of employees in the institution:

A. Regular Employees (Faculty and Staff)

Items		CAY		CAYm1		CAYm2	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	22	22	21	21	20	20
	F	31	31	30	30	27	27
Faculty in Maths, Science & Humanities	M	6	6	6	5	6	6
	F	2	2	3	2	3	3
Non-teaching staff	M	41	41	41	41	43	43
	F	12	12	12	12	13	13

B. Contractual Staff Employees (Faculty and Staff):

Items		CAY		CAYm1		CAYm2	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	3	3	4	5	7	7
	F	6	5	3	4	4	4
Faculty in Maths, Science & Humanities	M	1	1	0	1	0	0
	F	1	1	1	2	1	1
Non-teaching staff	M	1	1	3	3	1	1
	F	0	0	0	0	0	0

10. Total number of Engineering Students:

Undergraduate:

Item	CAY	CAYm1	Caym2
Total no. of boys	864	832	842
Total no. of girls	327	324	337
Total no. of students	1191	1156	1179

Postgraduate:

Item	CAY	CAYm1	Caym2
Total no. of boys	15	29	39
Total no. of girls	13	18	23
Total no. of students	28	47	62

11. Vision of the Institution

"Moulding Engineers who can build the nation"

Fr. Conceicao Rodrigues College of Engineering (CRCE) will be a Center of Excellence in Engineering Education, moulding engineers with state-of-the art technologies, innovative skills and human values matching with the growing expectations of the corporate and the society and thus play an effective role in nation building.

12. Mission of the Institution:

- Create an excellent scholastic ambience for students and faculty, by providing facilities with state-of-the-art technologies and continuously updating based on the needs of user organizations.
- Attract, develop and retain teaching faculty of academic excellence, dedication and commitment.
- Design the academic administration system to ensure effective teaching-learning process facilitating participation from students and teachers and enabling continuous improvement through evaluation and feedback.
- Provide avenues for holistic development of students to become competent engineers with interpersonal skills, leadership qualities and social concern.
- Maintain economic discipline; continuously work for optimal utilization of resources and resource generation through consultancy to make quality education affordable.
- Inculcate ethical values and integrity by observing fairness and transparency in all dealings.

13. Contact Information of the Head of the Institution and NBA coordinator, if designated:

i. **Name:** Dr. Srija Unnikrishnan
Designation: Principal
Mobile No.: 09869005457
Email id: srija@frcrce.ac.in

ii. **NBA coordinator, if any**
Name: Dr. Sunil Surve
Designation: Professor
Mobile No.: 09167635546
Email id: surve@frcrce.ac.in

PART B: Criteria Summary

Name of the Program: UG in Computer Engineering

Criteria No.	Criteria	Mark/Weightage	Institute Marks
Program Level Criteria			
1.	Vision, Mission and Program Educational Objectives	60	53
2.	Program Curriculum and Teaching – Learning Processes	120	98
3.	Course Outcomes and Program Outcomes	120	110
4.	Students' Performance	150	120.43
5.	Faculty Information and Contributions	200	143.74
6.	Facilities and Technical Support	80	73
7.	Continuous Improvement	50	41
Institute Level Criteria			
8.	First Year Academics	50	37.72
9.	Students Support Systems	50	39
10.	Governance, Institutional Support and Financial Resources	120	93
	Total	1000	808.89

CRITERION 1	Vision, Mission and Program Educational Objectives	60

1. VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES (60) (Institute Total Marks 53)

1.1. State the Vision and Mission of the Department and Institute (5)(Institute Marks: 5)

Vision and Mission of the Department:

Vision:

To grow as a center of excellence and prepare high quality engineering graduates capable of excelling in their chosen field of an enterprise through an innovative and rigorous approach to education.

Mission:

- To blend theoretical knowledge with practical applications by imparting high standard technical education.
- To provide the techno-managerial skills for achieving excellence in their respective area of specialization.
- To encourage faculty involvement in pursuing academic excellence through quality research and publications.

Vision and Mission of the Institute:

Vision:

"Moulding Engineers who can build the nation"

Fr. Conceicao Rodrigues College of Engineering (CRCE) will be a center of Excellence in Engineering Education, moulding engineers with state-of-the art technologies, innovative skills and human values matching with the growing expectations of the corporate and the society and thus play an effective role in nation building.

Mission:

- Create an excellent scholastic ambience for students and faculty, by providing facilities with state-of-the-art technologies and continuously updating based on the needs of user organizations.
- Attract, develop and retain teaching faculty of academic excellence, dedication and commitment.
- Design the academic administration system to ensure effective teaching-learning process facilitating participation from students and teachers and enabling continuous improvement through evaluation and feedback.
- Provide avenues for holistic development of students to become competent engineers with interpersonal skills, leadership qualities and social concern.
- Maintain economic discipline; continuously work for optimal utilization of resources and resource generation through consultancy to make quality education affordable.
- Inculcate ethical values and integrity by observing fairness and transparency in all dealings.

1.2. State the Program Educational Objectives (PEOs) (5) (Institute Marks: 5)

At the completion of the program, graduates will have the ability to

- Analyze, formulate and provide solutions for real world problems with social ethics using fundamental scientific, mathematical and computing knowledge.
- Adapt to the ever-changing technologies in computer science and apply them in multidisciplinary scenarios.
- Develop and demonstrate leadership and interpersonal skills to work individually and as part of a team.

1.3. Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (10) (Institute Marks: 9)

The Vision, Mission and PEOs are published at

1. Department web page (http://frcrce.ac.in/comp/)
2. Department floor lobby
3. Notice boards
4. Laboratories
5. Staff room
6. Student journals

Apart from this, Mission, Vision and PEOs are disseminated to all the stakeholders of the programs through faculty meetings, student awareness lecture and department advisory board meetings.

1.4. State the process for defining the Vision and Mission of the Department, and PEOs of the program (25) (Institute Marks: 22)

The vision and mission of the department is defined through direct engagement of all the faculty members, Program Assessment Committee (PAC) and the Department Advisory Board (DAB). Program Assessment Committee (PAC) comprises three faculty members headed by the Program Coordinator (PC). Department Advisory Board (DAB) has representation from major employer of the program's graduates, expert from academia and alumni.

The process of defining the vision and mission is shown in the figure1.4a.

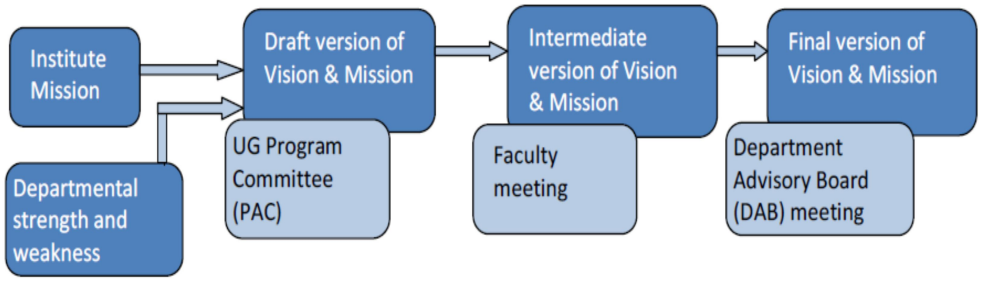

Figure 1.4a: Process for defining of Vision Mission of the Computer Department.

Program Assessment Committee (PAC) members along with Head of the Department has drafted the initial version of vision and mission by referring the mission of the institute and by reviewing the strength/weakness of the department in such a way that it is beneficial to the

students as well as in line with the mission of the institute. Then it is discussed in the faculty meetings and further refined. The final version is further refined in the DAB meeting.

The process of redefining the vision and mission for next revision cycle is shown in the figure1.4b

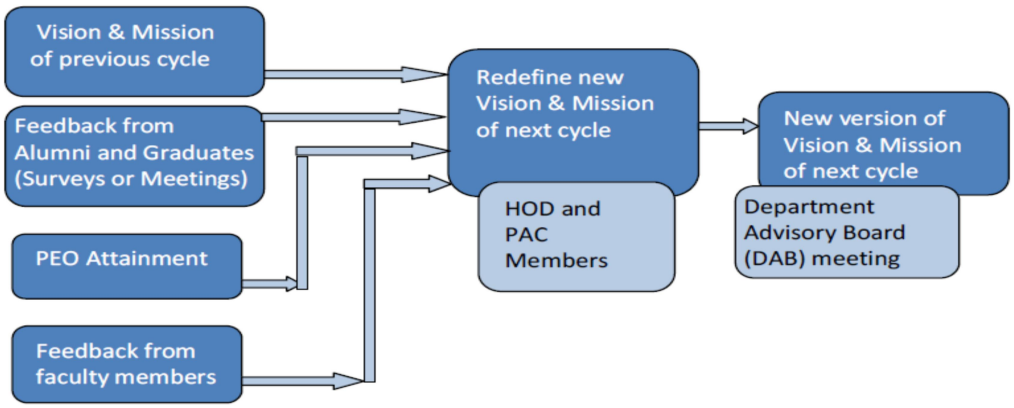

Figure 1.4b: The revision cycle is to be iterated after 6 years.
The vision and mission is defined in the year 2013-14 with the next scheduled revision cycle being in 2019-20

Head of the Department and PAC members have to do the analysis of assessment of PEOs of previous cycle and redefine the vision mission by taking inputs from various stakeholders such as Alumni, Graduates, Faculty and Parents through surveys or meetings. Then that version is to be discussed in DAB meeting and to be finalized for the next cycle.

The process for defining the Program Educational Objectives (PEOs) is shown in Fig. 1.4c

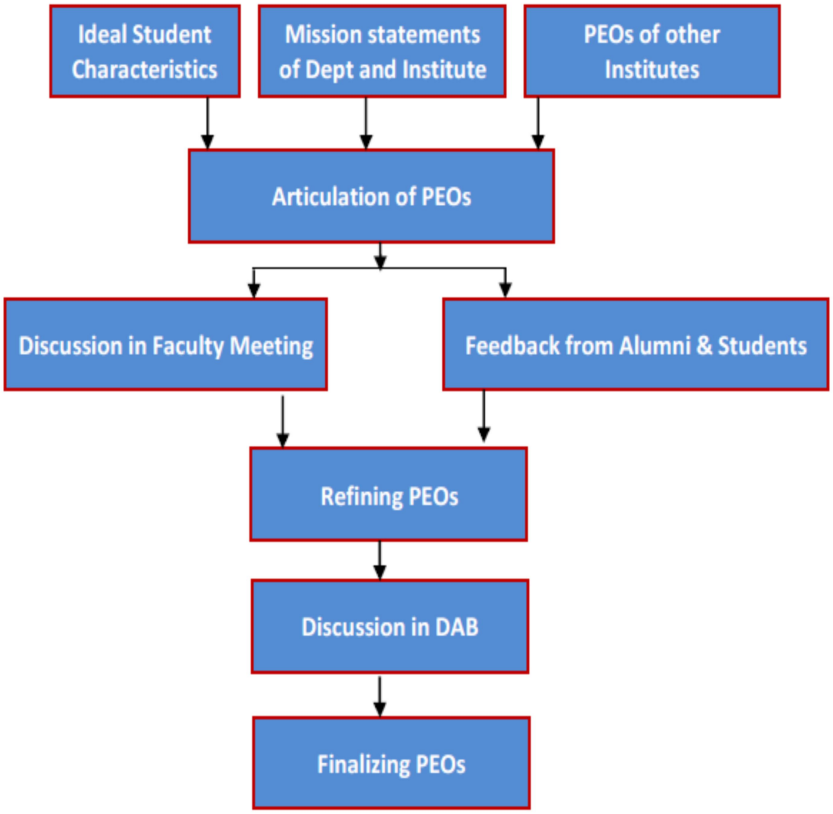

Figure 1.4c: Process for defining of Program Educational Objectives.

The revision cycle is to be iterated after 5 years. The PEOs are defined in 2013-14 with the next scheduled revision cycle being in 2018-19.

Program Assessment Committee (PAC) members along with Head of the department have drafted the initial version of Programme Educational Objectives (PEOs) by referring the mission of the institute, vision & mission of department and graduate attributes. Thus the program objectives are designed to meet the needs of the constituents that hire our graduates (industry), to benefit the students and in line with the mission of the department. Then the feedback is taken from alumni, students and faculty members to refine them. The final version is further refined in the DAB meeting.

1.5. Establish consistency of PEOs with Mission of the Department (15) (Institute Marks: 12)

Mission of the department is

M1: To blend theoretical knowledge with practical applications by imparting high standard technical education.

M2: To provide the techno-managerial skills for achieving excellence in their respective area of specialization.

M3: To encourage faculty involvement in pursuing academic excellence through quality research and publications.

PEO Statements	M1	M2	M3
PEO1: Analyze, formulate and provide solutions for real world problems with social ethics using fundamental scientific, mathematical and computing knowledge.	3	2	3
PEO2: Adapt to the ever-changing technologies in computer science and apply them in multidisciplinary scenarios.	2	3	2
PEO3: Develop and demonstrate leadership and interpersonal skills to work individually and as part of a team.	-	3	-

Mapping Justification:

- M1- PEO1
  Theoretical foundation is necessary to apply real world problems. Learners shall be capable to apply their fundamentals to provide solutions to real world problems with social ethics. PEO1 is in in line with M1.
- M2 - PEO1
  Technical skills are necessary for achieving excellence in the chosen field. Learners shall be capable of using technical skills for providing solutions to real world problems with social ethics. Thus, PEO1 supports M2.
- M3 - PEO1
  Quality research work will enhance fundamental knowledge of faculty members which will help to improve quality teaching resulting into building strong foundation to the students to solve real world problems. Thus, PEO1 will strengthen M3.
- M1 - PEO2
  Adapting newer technologies will help to enhance theoretical knowledge and ability to provide better solutions to real world problems. Also, adapting newer technologies will help students to inculcate lifelong learning. Thus, PEO2 will strengthen M1.
- M2 - PEO2
  Adapting newer technologies will improve technical knowledge which is useful to provide better solution to real world problems. Thus, PEO2 will strengthen M2.
- M3 - PEO2
  Adapting newer technologies will help faculty members to improve their technical skills and research quality. This will help to improve quality of teaching. Thus, PEO2 will strengthen M3.
- M2 - PEO3
  Good interpersonal skills and leadership qualities will enhance managerial skills. Hence, PEO3 will strengthen M2.

CRITERION 2	Program Curriculum and Teaching – Learning Processes	120

2. PROGRAM CURRICULUM AND TEACHING – LEARNING PROCESSES (120) (Institute Total Marks 98)

2.1 Program Curriculum (20) (Institute Marks: 15)

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 gap, if any. (10) (Institute Marks: 8)

We use following process to identify extent of compliance of university curriculum for attaining POs and PSOs:

1. Faculty member formulate Course Outcomes (COs) for the subject assigned before commencement of the semester. The COs formulated are reviewed by Program Assessment Committee (PAC).
2. COs are mapped to POs and PSOs. Mappings of all courses are consolidated and reviewed to identify deficiencies in the University curriculum. This help to identify program level curriculum gap (i.e., a course needs to be included in curriculum) or course level gap (i.e., a particular topic needs to be included in a course).
3. Also, faculty members give their opinion based on observations which is used for identifying deficiencies in the University curriculum. Generally, this helps to identify course level gap.
4. Faculty members use their observations and/or future data to identify course/curriculum gap if any. Generally, this helps to identify program level gap.
5. PO and CO attainment levels analyzed to assess the gaps. This help to identify program level curriculum gap or course level gap.
6. The Departmental Advisory Board (DAB), Experts from Industry, Academia are also consulted in order to figure out the gap in the curriculum for attaining POs and PSOs.

Identified Curricular Gaps:

1. Personal ethics is not included in the curriculum.
2. No course includes use of documentation tools
3. Except project work, no course demands the use of advanced technology.
4. No course includes social aspect and professional responsibilities in context of software development.

2.1.2 State the delivery details of the content beyond the syllabus for the attainment of POs and PSOs (10) (Institute Marks: 7)

CAY (2016-17)

SR. No	GAP	Action Taken	Date-Month-Year	Resource Person with designation	% of students	Relevance to POs, PSOs
1	Advanced Programming	Lab course on advanced	July - Nov 2016, Jan –	Department faculty	100	PO1, 2,3, 5, 12

	Skills	programming	April 2017			
2	Competitive Coding skills	Lab course on Competitive coding	July - Nov 2016, Jan – April 2017	Department faculty	100	PO1, 2,3, 5, 12
3	Web Mining *(CPC 801- Data Warehousing and Mining)*	Guest Lecture	12th April 2017	Prof. Vijaya Padmadas Assistant Professor in TSEC, Bandra	94%	PO12
4	Sudoku using backtracking *(CSC 402, Analysis of Algorithms*)	Guest Lecture	27 Mar 2017	Prof. Nikahat Mulla, Assistant professor, SPIT	85%	PSO1
5	Application of Automata theory in Machine Learning *(CSC 405 - Theoretical Computer Science)*	Guest Lecture	12 April 2017	Mr. Nikhil Badugu	64%	PSO1
6	Aggregation, Swing *(CSC 302 - Object Oriented Programming and Methodology)*	Lecture	2 sept 2016, 14 sept 2016	Prof. Swati Ringe	79%, 47%	PO2, PSO1
7	DSP applications in digital cameras *(CPC 701 - Digital Signal Processing)*	Presentation	13 October 2016	Prof. Supriya Kamoji	50%	PO12
8	Personal Ethics	Seminar	Feb 9. 2017	Redemptorist Fathers	95%	PO6,8
9	Current issues and trends in System and Information Security. *(CPC 702 - Cryptography and Network Security)*	Presentation	16/9/2016 to 7/10/2016	Prof. Monali Shetty	100%	PO1,PO4, PSO1
10	Associative memories-BAM	Guest	13 October	Prof. Nikahat Mulla,	53 out of	PO12

	and Hopfield networks and its Applications *(CPE 7025- Soft Computing)*	Lecture	2016	Assistant professor, SPIT	75	

CAYm1 (2015-16)

S. No.	Gap	Action Taken	Date-Month-Year	Resource Person with designation	% of students	Relevance to POs, PSOs
1	Advanced Programming Skills	Lab course on advanced programming	July - Nov 2015, Jan – April 2016	Department faculty	100	PO1, 2,3, 5, 12
2	Competitive Coding skills	Lab course on Competitive coding	July - Nov 2015, Jan – April 2016	Department faculty	100	PO1, 2,3, 5, 12
3	Database connectivity techniques	Guest Lecture - Advanced Object Oriented Programming Methodology with Database Technology (OOPM-CSC302)	30/09/2015	Shivam Agrawal, Pleiadessoft Inc	94	PO5, PSO2
4	Real world application of TCS and Kernel Customization (OS-CSC 502)	Guest Lecture - Applications of FSM (TCS-CSC405)	21/03/2016	Shreya K., Final Year student	74	PO11
5	Advanced HMI technique	Study assignment on advance topic (HMI - CPC 802)	01/04/2016	Prof. Dipali Koshti, Asst. Prof	100	PO12

6	Currents trends in soft computing technique	Study of technical paper on advance hybrid soft computing techniques (SC - CPE7025)	01/10/2015	Prof. Dipali Koshti, Asst. Prof	100	PO 1,2,3,11 PSO 1,2
7	Latex	Workshop	7th March 2015	Mr. Vaibhav Godbole and Mr. Saurabh Kulkarni	40%	PO10
8	Web Development	Workshop	5,13,14 Sept 2015	Mr. Rishabh and Mr. Mahendra Mehera	40%	PO3
9	Ethical Hacking	Workshop	21st Sept 2015	Mr. Mahendra Mehera	100%	PO6, PO12
10	CSI coding Competition	Competition	6 Feb 2015	-	100%	PO12

CAYm2 (2014-15)

S. No.	Gap	Action Taken	Date-Month-Year	Resource Person with designation	% of students	Relevance to POs, PSOs
1	Usage of flexible architecture for web application	Practical Sessions on Database Connectivity & MVC Architecture (WT Lab-CPL)	15/09/2014	Prof. Sunil Choudhari, Assistant Professor	100	PO 2,3 PSO 1,2
2	Personal ethics	Workshop on Value Education	10/09/2014	Redemptorist Fathers	95	PO6, PO8

		and Career Orientation				
3	Competitive Coding techniques	CSI coding Competition	06/02/2015	CSI Chapter	100	PO12
4	Report Writing tools	Workshop on Latex	07/03/2015	Prof. Vaibhav Godbole and Prof. Saurabh Kulkarni	40	PO10
5	Advanced HCI techniques	Technical Paper Presentation (HCI-CSC 805)	12/03/2015	Prof. Dipali Koshti	100	PO 10,12 PSO 2
6	Apply knowledge to solve real world problems	Practical Sessions on RMI & CORBA (DC-CSC 801)	10/03/2015	Prof. Merly Thomas, Associate Professor	90	PO 3,5
7	Techniques for processing Information in Multimedia	Lecture on Video Processing (MSD-CSC 804)	15/04/2015	Prof. B. S. Daga, Associate Professor	100	PO4, PSO1, PSO2
8	Software architecture	Lecture on Selection of appropriate Software Architecture (SE-CPC 602)	24/04/2015	Dr. Sunil Surve, Professor	78	PO 1,2,3,11 PSO 1,2

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).

Inputs are given to Board of studies through meetings held for syllabus. Many things are incorporated in new syllabus.

2.2 Teaching - Learning Processes (100) (Institute Total Marks: 83)

2.2.1 Describe Processes followed to improve quality of Teaching and Learning (25) (Institute Marks: 22)

Adherence to Academic calendar

The Institute-level Academic Calendar is prepared in the beginning of academic year based on academic calendar provided by University. This calendar includes academic calendar and schedule for various institute-level curricular and co-curricular activities such as

- Term commencement
- Lesson plan and CO submission
- Faculty meetings
- Timelines for academic activities related to attendance, unit tests, term work
- Cultural, Sports and technical events
- Conferences and Seminars
- Practical and Oral examination schedule

Further, department refines the academic calendar by adding timelines and schedules for various department-level activities and events such as :

- Schedule for final year project work
- Faculty Development Programs(FDPs)
- Industrial Visits
- Submission Dates
- Co-curricular Activities-related event dates.
- Department Meetings for review of course completion and any other academic and administration related matters.

Faculty members and students are reminded about these activities through circulars, notices, meetings on timely basis and are particular about effective compliance of the Academic Calendar. Faculty proactively contributes and encourages students to be a part of a high-quality teaching- learning process.

Use of Various Instructional Methods and Pedagogical Initiatives

Faculty members are the backbone of our program. All our faculty members make the best efforts to deliver the courses assigned to them using best practices of teaching. In order to make the teaching-learning process more effective and interactive, all the faculty members prepare themselves before the beginning of the semester by designing the course plan and assessment methods as follows:

- Lesson plan in line with teaching strategies
- The content of teaching
- Various Instruments and instructional methods to be used
- Activities/tasks to be done by students
- Appropriate Assessment Methods
- Course Evaluation Process

During the course of delivery, our faculty explains the Course learning objective and encourages students to ask questions that help them to understand and solve the problems not only in the course learning, but also in their practical lives.

Faculty members use one or more instructional methods to enhance learning experience for the students:

- **Interactive class sessions**: Faculty members insist on an interactive teaching-learning process that encourages students to participate in class-room sessions through Group

Discussions, Question-Answer sessions.

- **Presentation Techniques**: Faculty members use modern presentation techniques to enhance the quality of lecture delivery. It helps students to visualize complex engineering concepts and theories.
- **Models**: Faculty members make use of various working models to explain engineering concepts which help students to visualize actual working of different phenomena.
- **Real-life examples**: Emphasis is given not only on explaining various engineering concepts and theories but also on their real life implications and industrial applications. It helps students to understand the gravity of the knowledge they gain and can correlate theory to actual practices.
- **Seminars:** Faculty members and industry experts share their practical knowledge with students through various seminars. This activity contributes to bridge the gap between academics and industry.
- **Case Studies**: Case studies are discussed with students, which is a very effective tool for gaining fuller understanding of the concept.
- **Assignments and quizzes**: Assignment and quizzes are prepared by the faculty members that will help students to :
  - understand and apply the concepts to solve problems
  - to reason
  - evaluate their decision
  - increase their learning abilities
  - defend their conclusions
- **Mini Projects**: Mini projects are assigned to students as a part of their term-work wherein they apply their knowledge to solve simple engineering problems and in the process improve their understanding.

Methodologies to support weak students and encourage bright students

In the process of making the teaching-learning process effective, faculty members take following initiatives to keep a close track of student's performance and facilitate them to excel.

- Faculty members take regular feedback of student work and encourage them to focus their effort where-ever necessary.
- Faculty members evaluate student’s assignments and tests on clearly articulated standards and feedback is given to them to rectify their mistakes.
- Faculty members encourage students to be regular and attentive in the class.

Faculty members identify weak and strong students by observing individuals during classroom and laboratory sessions, assessing individual’s work, assessing internal test performance.

In order to support and help weak students, following measures are taken :

- Conduct sessions to understand their academic difficulties and propose solutions.
- Arrange for extra practice sessions for weak students to ensure they cope up with the class
- Consult their parents and keeping them informed about the progress of their ward

Faculty members encourage bright students in various ways as follows:

- Encouraging students to participate in technical competitions wherein they get

opportunity to apply their knowledge and improve skills.

- Motivating students having unique ideas and valuable project work to participate in conferences and publish papers in recognized Journals/Conferences.
- Encouraging students to represent the College in various areas such as technical debates, competitions, quizzes, group discussions.
- Arranging various seminars, workshops and training programs to proffer subject matter expertise. Also encouraging them to participate in such programs conducted outside the institute.

Quality of Classroom teaching

Faculty members strive to enhance the learning experience for students by

- Ensuring quality of the content taught in classroom sessions
- Ensuring appropriateness of the knowledge shared in achieving POs and PSOs
- Making use of presentations on projectors, display and demonstration using models to help students understand the concepts
- Making classroom sessions more interactive and maintaining the environment conductive to learning
- Inculcating the habit of reasoning in students which help them in continuous and self-learning
- Observing individual students understanding during classroom sessions through question answers sessions, quizzes

Conduct of Experiments

Faculty members strive to enhance quality of laboratory experience for students by :

- Keeping laboratory manuals updated which provides proper guidelines for conducting experiment
- Explaining the concept or theory supporting the experiment
- Explaining and demonstrating the experiment to every student in a batch
- Ensuring that every individual performs experiments, records observations and analyze results
- Maintaining laboratory equipment to ensure quality of experiments

Continuous Assessment in the Laboratory

Faculty members ensure timely and continuous assessment of laboratory work. Emphasis is given on every individual student conducting the experiment and analyzing the result. Students' performance during laboratory sessions is recorded and is one of the important tools used for internal assessment. This performance is accounted in term-work evaluation and course outcome calculation.

Student feedback of teaching learning process and actions taken

Student feedback of teaching learning process is collected as follows:

Course Exit Survey: Faculty members collect students' feedback for every course at the end of semester through course exit surveys. Students rate their understanding of various topics on a scale of 1 to 5 and also provide comments or improvement needed if any. Faculty members can evaluate the teaching learning process based on this survey and work towards improving the same.

Student Feedback On Portal: Students are supposed to fill online feedback form on college portal at the end of each semester. This activity is carried out on institute level and the

summary of students' feedback is then shared with departments and individual faculties. Faculties are expected to work on the feedback in order to improvise the teaching learning process. The actions taken on the students' feedback are discussed in the performance appraisal.

Graduate Exit Survey: This survey conducted every year collects feedback from students completing the program and the feedback is used for improving the teaching learning process.

2.2.2 Quality of internal semester Question papers, assignments and Evaluation (20) (Institute Marks: 18)

Quality of Question Papers:

1. Announcement of Mid-Term Tests: The schedule of the two mid-term tests is announced well in advance and is intimated to the students through the academic calendar.
2. Time-Table: The time table for the tests is prepared at the institute level (/examination cell) and published on the website as well as on the student notice boards of the department.
3. Question Papers: Question papers are structured in such a way that it covers the curriculum. The questions are designed to represent the course objectives which are duly approved by the PAC. As a tool for CO assessment, blueprint of question papers are a part of the CO assessment plan duly approved by the PAC.
4. The question papers with appropriate marking scheme are submitted by the subject teachers to the PAC for validation.
5. Marking scheme (Evaluation Guidelines) is normally submitted wherever required along with the question paper.
6. Students are informed about such marking schemes and also they can avail this marking scheme after the test along with the model answers.
7. PAC validates the question paper against the following requirements :
    - Correlation of questions and the Course Outcomes
    - Subject Coverage
    - Proportionality of the marking scheme

CO attainment data is stored electronically on Google Doc and is accessible to all faculty members with appropriate rights.

Quality of Assignments:

1. Self-learning is main purpose of the assignments and evaluation of assignment (as per the rubrics set which indicate the percentage of the grade for content, timely submission and writing skills) is also used for CO Assessment.
2. Complete written instructions are given to the students which fits the purpose. (Separate instructions for Problem solving/Design/Paper reading assignments)
3. All assignments are made sure to be oriented towards problem solving/ applications level should not be direct questions, set from multiple sources and should be aligned with COs.
4. A discussion of weak, strong and average work is done in the class after evaluation.

2.2.3 Quality of student projects (25) (Institute Marks: 23)

CRCE has taken steps to improve quality of student projects by

- Encouraging and facilitating more in-house projects to be done by students in the campus facilities under the guidance of faculty members.
- Installing the completed projects in labs for possible further work by next set of students and demonstration to visitors.
- Encouraging and facilitating the students to publish papers in national and international conferences/journals on the project completed.

At departmental level, following procedure is used to monitor and quality check of the final year project work:

- A faculty member is assigned responsibility as Project Coordinator who co-ordinates all the Project related activities
- Project ideas are invited from Faculty members and students. Students discussed their ideas with faculty members, seniors, or industrial experts and submit the abstract to project coordinator at the end of 6th semester.
- Students present their project idea to panel of faculty members in the beginning of the 7th semester. Panel verifies and validates the idea on basis of domain, feasibility, etc.
- Based on project domain and faculty expertise, a faculty mentor is allotted.
- Projects are classified into different categories like research, application, product, etc.
- Course outcomes are defined and mapped with POs and PSOs for the project. Rubrics are designed based on the category and used for evaluating project work.
- Every student project group is meets their guide at-least once a week, discusses the progress, difficulties and submits a weekly report of work progress.
- Every project group presents their progress to panel of faculty members twice in a semester. Panel gives the suggestions for improving the project as well as grade the project work based on rubrics.
- Project guides evaluate project work based on weekly meetings and interactions with group members.
- Guide evaluates the contribution of each student within the group, individual as well as team performance
- Project guide ensures that each member of the group is involved in every aspect of the project including Problem formulation, Literature Review, Design, Simulation, etc.
- Based on the assessment by guide, panel and external examiner's report, projects are categories as average projects, good projects, etc. Guide encourages group under guidance to participate in project competitions, research publication, etc.
- The project is also assessed by an external examiner who comments on the quality of the project.
- Students are encouraged to publish their work in good conferences /journals and guided whole-heartedly throughout the publication process.
- At least four to five papers are published by students.
- Students are urged to participate in intra-collegiate and inter-collegiate project competitions with a view to providing exposure to students and facilitate their overall growth as technologists.

2.2.4 Initiatives related to industry interaction (15) (Institute Marks: 9)

- **Industry Sponsored Lab**: IBM Center of Excellence is developed with help of IBM where all IBM technologies are available. Computer Network lab developed with help of D-Link.
- **Industrial Visits**: For understanding work environment in the industries, technical chapters organize industrial visits once in a year.
- **Industrial Internships**: At department and institute level, we encourage students to undergo internships/summer training. Approximately 20-30 % students do the internships in industries.
- **Campus Recruitments**: Training and placement office interacts with industries to know their job requirement and the placement officer acts as a liaison officer between the companies and college management. Major companies like TCS, Accenture, L & T InfoTech are invited for campus recruitment. Almost all eligible students get placement in campus. We also take feedback from recruiting companies.
- **Guest Lectures**: For understanding current trends in the industry, we invite industrial personal or our alumni for guest lectures on special topics or simple interaction with students.
- **Faculty Development Programs/STTP**: We organize faculty development programs in association with industries for more exposure to advanced technologies or practical training.

2.2.5 Initiatives related to industry internship/summer training (15) (Institute Marks: 11)

At institute level, we take following steps to give practical experience to our students by:

- Encouraging students for industrial internship.
- Providing support for getting internship for interested students.
- Organizing internship at institute level. We have developed cloud computing facility and system security through such internship programs.

Name of Student	Period	Industry
Academic Year: 2016-17		
Igor Monteiro	14th June - 8th July 2016	"Summer Intern" in Thomas Cook (India) Ltd
Nandini Laad	13th June - 8th July 2016	Mobile Automation, Xoriant Solutions
Felcia Thomas	15th Dec 2016 - 11th Jan 2017	RPMG - Reliance Project Management Group
Umesh Yadav	5th June to 31st July 2017	Teach for India Technology Team
Yella Sri Haritha Priya	20th June- 17th July 2017	Industrial Training , 63 Moons technologies ltd.
P. Kevin Sunny Kaumudi Kulkarni Susan Thomas Anish John	13th June 2017	Web Technology and Databases

Pradnya Borkar	5th June - 5th July 2017	Livereal Tech Pvt Ltd.
Aishwarya Sebin	15th june - 1st August 2017	Global Volunteering Program, Egypt
Paritosh Shirodkar	7th June - 10th July 2017	Orient Technologies
Academic Year: 2015-16		
Vivek Gandhi Anu Issac, Crystal Cuthino, Leon D'souza, Nevil D'souza, Andrea Furtado, Cheryl Nellissery, Melwyn Saldanha	16 August to 15 November 2015	YU Ambassador in Technical Department
Adarsh Gupta Oneil Mascarenhas, Gaurav Shinde, Pankaj Sangpal, Khusaal Giri, Fiona Lobo, S. Rasmi, Lenherd Olivera, Ms. Anisa Tuscano, Mr. Dhruva Gaidhani	8 December 2015 (2 Weeks)	Advanced Web Development Frameworks (Struts 2 , Hibernate, Spring Core, Rest) and Project Build Management Tool Maven.
Academic Year: 2014-15		
Mr. Abhishek Kateliya, Ms. Charmiane George	April 2015 – August 2015	Sales, Marketing and Data Operation Practice by Bookmarked Ventures LLP
Mr. Thompson Naidu Franky Naidu	18 to 23 May 2015	Industrial Training in WESTIN
Ms. Meryl Martis	17 June to 17 July 2015	Project on Web Development using ASP and SharePoint Develop
Mr. Akshay Thakare	08 December 2014	Quest2taravel.com Pvt. Ltd
Mr. Akshay Thakare Mr. Rohit Siddheswar	01 January to 30 March 2015	Mobile applications for the android platform for Simple Solutions
Ms. Monisha Roy	8 December 2014 to 7 February 2015	Internship for Trimax IT Infrastructure & Services Ltd.
Mr. Dhairyashil Patil	December 2014	Android Developer

		for Laugh Out Loud Ventures Pvt. Lt
Ms. Blessy Antony, Ms. Chaitali Pawar	8 December 2014 to 7 January 2015	Project Name: "Infra Structure Project" for Kotak Mahindra Bank Ltd.
Mr. Akhilesh Gupta, Mr. Alex Chirayath	2015	Official Website development of SPP SPTM NMIMS annual festival Isthmus & Urjja 2015
Ms. Deveena Jain	Feb-15	Campus Manager for Channel V's VFest 2015 for STAR India Pvt. Ltd.
Mr. Abhishek Jha	8 December 2014 to 2 January 2015	Project in "Face Recognition Appliance for Retail Customer Loyality" for Xangars Solutions Pvt. Ltd
Mr. Alex Chirayath	15 December 2014 to 5 January 2015	Project on "New Repository, BDO" for Clover Infotec Pvt. Ltd

CRITERION 3	Course Outcomes and Program Outcomes	120

3. Course Outcomes and Program Outcomes (120) (Institute Total Marks 110)

Define the Program specific outcomes

PSO1 Apply fundamental computer science knowledge to solve real world problems.

PSO2 Design and Implement software systems of varying complexity in multidisciplinary scenarios that meet specified requirements with appropriate consideration to architectural, algorithmic and security aspects.

3.1 Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs) (20) (Institute Total Marks: 19)

3.1.1 Course Outcomes (5) (Institute Marks: 5)

Include COs of one course from each semester of study.

Year of study: 2016-17

At the end of the course, student will have ability to

SEM –III

Object Oriented Programming Methodology (CSC302)

CSC302.1 Solve the computational problems using basic constructs of Java Programm Language.

CSC302.2 Demonstrate the language specific features such as Exceptions, Multithreading a Applets.

CSC302.3 Implement Object Oriented Concepts like Data Abstraction, Encapsulati Inheritance, Polymorphism and Aggregation.

CSC302.4 Implement real world scenario using bottom up approach.

SEM –IV

Computer Graphics(CSC406)

CSC406.1 Implement geometric output primitives algorithm.

CSC406.2 Apply the appropriate filling algorithm for the given object.

CSC406.3 Explain viewing techniques in 2D and 3D.

CSC406.4 Apply transformations on graphical objects in two and three dimension.

CSC406.5 Develop animation using computer graphics concepts.

SEM –V

Structured and Object Oriented Analysis and Design(CSC503)

CSC503.1. Select appropriate system requirements by gathering requirements using suitable method(s).

CSC503.2. Analyze software project and prepare feasibility report.

CSC503.3. Model software system using appropriate modeling diagrams.

CSC503.4. Design software constructs like database, UI, system interfaces, etc.

CSC503.5 Prepare deployment diagram for implementing software architecture.

SEM –VI

System Programming and Compiler Construction(CPC601)

CSC601.1 Design basic two-pass assembler.

CSC601.2 Design basic two-pass macro processor.
CSC601.3 Design basic Loader schemes.
CSC601.4 Implement different phases of compiler.
CSC601.5 Implement different translators.

SEM –VII

Soft Computing (CPE7025)

CPE7025.1 Design Fuzzy inference system.
CPE7025.2 Apply neural networks to solve pattern classification and regression problems.
CPE7025.3 Comprehend the concept of hybrid systems through Neuro-Fuzzy Modeling.
CPE7025.4 Solve optimization problems using genetic algorithm.

SEM –VIII

Human Machine Interaction (CPE802)

CPE802.1 Design user centric interfaces.
CPE802.2 Apply HMI principles in their day-to-day activities.
CPE802.3 Criticize existing interface designs, and improve them.
CPE802.4 Develop interactive products up to the prototype stage for social and technical task.

3.1.2 CO-PO matrices of course selected in 3.1.1 (5) (Institute Marks: 5)

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

SEM –III

Object Oriented Programming Methodology (CSC302) Year of study: 2016-17

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSC302.1	3	-	-	-	-	-	-	-	-	-	-	-
CSC302.2	3	-	-	-	-	-	-	-	-	-	-	-
CSC302.3	3	3	3	-	1	-	-	-	3	2	-	-
CSC302.4	3	3	3	-	1	-	-	-	3	2	-	-

CO	PSO1	PSO2
CSC302.1	3	-
CSC302.2	3	-
CSC302.3	3	3
CSC302.4	3	3

SEM –IV

Computer Graphics(CSC406) Year of study: 2016-17

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSC406.1	3	3	2	-	2	-	-	-	-	-	-	-
CSC406.2	3	3	2	-	2	-	-	-	-	-	-	-
CSC406.3	3	-	-	-	-	-	-	-	-	-	-	-
CSC406.4	3	3	3	-	2	-	-	-	-	-	-	-
CSC406.5	3	3	3	-	2	-	-	-	3	-	-	-

CO	PSO1	PSO2
CSC406.1	3	-
CSC406.2	3	-
CSC406.3	3	-
CSC406.4	3	-
CSC406.5	3	3

SEM –V

Structured and Object Oriented Analysis and Design(CPC503) Year of study: 2016-17

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CPC503.1	3	3	-	-	-	-	-	-	-	2	1	-
CPC503.2	3	3	-	-	-	-	-	-	-	2	2	-
CPC503.3	3	3	3	-	2	-	-	-	-	2	-	-
CPC503.4	3	3	3	-	2	-	-	-	-	2	-	-
CPC503.5	3	3	3	-	2	-	-	-	-	2	-	-

CO	PSO1	PSO2
CPC503.1	3	3
CPC503.2	3	3
CPC503.3	3	3
CPC503.4	3	3
CPC503.5	3	3

SEM –VI

System Programming and Compiler Construction(CPC601) Year of study: 2016-17

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CPC601.1	3	1	3	-	-	-	-	-	-	-	-	-
CPC601.2	3	1	3	-	-	-	-	-	-	-	-	-
CPC601.3	3	1	3	-	-	-	-	-	-	-	-	-
CPC601.4	3	1	3	-	1	-	-	-	-	-	-	-
CPC601.5	3	1	3	-	1	-	-	-	-	-	-	-

CO	PSO1	PSO2
CPC601.1	2	-
CPC601.2	2	-
CPC601.3	2	-
CPC601.4	2	-
CPC601.5	2	-

SEM –VII

Soft Computing (CPE7025) Year of study: 2016-17

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CPE7025.1	3	3	3	-	2	-	-	-	-	-	-	-
CPE7025.2	3	3	3	-	2	-	-	-	-	-	-	-
CPE7025.3	3	1	1	-	1	-	-	-	-	-	-	-
CPE7025.4	3	3	3	-	2	-	-	-	-	-	-	-

CO	PSO1	PSO2
CPE7025.1	3	3
CPE7025.2	3	3
CPE7025.3	3	1
CPE7025.4	3	3

SEM –VIII

Human Machine Interaction(CPE802) Year of study: 2016-17

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CPE802.1	2	2	3	-	3	-	-	-	-	-	-	-
CPE802.2	2	2	-	-	-	-	-	-	-	-	-	-
CPE802.3	2	2	3	-	3	-	-	-	-	-	-	-
CPE802.4	2	2	3	-	3	2	-	-	-	-	-	-

CO	PSO1	PSO2
CPE802.1	3	-
CPE802.2	2	-
CPE802.3	3	-
CPE802.4	3	2

3.1.3 Program level Course-PO matrix of all courses including first year courses (10) (Institute Marks: 9)

COURSE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEC101	2	-	-	-	-	-	-	-	-	-	-	-
FEC102	3	-	-	-	-	-	-	-	-	-	-	-
FEC103	3	-	-	-	-	-	-	-	-	-	-	-
FEC104	3	3	2	-	-	-	-	-	-	-	-	-
FEC105	3	3	-	3	-	-	-	-	-	-	-	-

FEC106	1	-	-	-	-	2	2	-	-	-	-	-
FEC201	3	-	-	-	-	-	-	-	-	-	3	-
FEC202	3	-	-	-	-	-	-	-	-	-	-	-
FEC203	2	-	-	-	-	-	-	-	-	-	-	-
FEC204	3	1	2	-	-	-	-	-	-	2	-	-
FEC205	1	1	1	-	-	-	-	-	-	-	-	-
FEC206	-	-	-	-	-	-	-	-	-	3	-	-
FEL101/102	1	1	-	-	1	-	-	-	-	-	-	-
CSC301	2	-	-	-	-	-	-	-	-	-	3	-
CSC302	3	3	3	-	1	-	-	-	3	2	-	-
CSC303	3	2	2	-	-	-	-	-	-	-	-	-
CSC304	3	2	3	-	2	-	-	-	1	1	-	-
CSC305	2	-	-	-	-	-	-	-	-	-	-	-
CSC306	3	2	2	1	2	-	-	-	2	-	-	-
CSC401	2	-	-	-	-	-	-	-	-	-	3	-
CSC402	3	3	3	-	-	-	-	-	-	-	-	-
CSC403	3	2	2	-	-	-	-	-	-	-	-	-
CSC404	3	3	3	-	3	-	-	-	-	-	-	-
CSC405	3	3	3	-	-	-	-	-	-	-	-	-
CSC406	3	3	3	-	2	-	-	-	3	-	-	-
CPC501	2	3	3	-	-	-	-	-	3	-	-	-
CPC502	3	3	3	-	3	-	-	-	2	3	2	-
CPC503	3	3	3	-	2	-	-	-	-	5	2	-
CPC504	3	3	2	-	3	-	-	-	-	-	-	-
CPL501	2	3	3	-	3	-	-	-	3	2	-	-
CPL502	-	-	-	-	-	1	-	2	2	3	1	-
CPC601	3	1	3	-	1	-	-	-	-	-	-	-
CPC602	2	3	3	-	3	-	-	-	2	-	-	3
CPC603	1	2	2	2	3	1	2	1	-	-	1	-
CPC604	3	3	3	-	3	-	-	-	2	-	-	-
CPE6013	-	-	-	-	-	-	-	-	-	2	-	2
CPL601	2	3	3	-	3	-	-	-	3	-	-	-
CPC701	3	2	3	-	1	-	-	-	3	-	-	-
CPC702	3	2	3	3	2	-	-	-	3	1	-	1
CPC703	2	2	3	3	3	-	-	-	3	3	2	3
CPE7025	3	3	3	-	2	-	-	-	-	-	-	-
CPP701	3	3	3	-	3	2	-	2	3	3	2	2
CPL701	1	1	3	2	-	3	1	1	-	2	-	2
CPC801	3	3	3	-	3	-	-	-	-	-	-	3
CPC802	2	2	3	-	3	2	-	-	-	-	-	-
CPC803	3	2	3	3	-	-	-	-	-	-	-	2
CPE8031	3	3	2	2	3	-	-	-	-	-	2	-
CPE8035	2	2	2	-	2	-	-	-	1	1	-	-
CPP802	3	3	3	-	2	-	-	-	3	3	3	2

CPL801	1	3	2	2	3		1	1	2	1	2	3

COURSE	PSO 1	PS O2
FEC101	-	-
FEC102	-	-
FEC103	-	-
FEC104	-	-
FEC105	-	-
FEC106	-	-
FEC201	-	-
FEC202	-	-
FEC203	-	-
FEC204	-	-
FEC205	2	-
FEC206	-	-
FEL101/102	-	-
CSC301	-	-
CSC302	3	3
CSC303	3	2
CSC304	3	-
CSC305	2	-
CSC306	-	-
CSC401	-	-
CSC402	3	2
CSC403	3	-
CSC404	3	3
CSC405	3	-
CSC406	3	3
CPC501	3	2
CPC502	3	3
CPC503	3	3
CPC504	3	-
CPL501	2	3
CPL502	-	-
CPC601	2	-
CPC602	3	3
CPC603	3	3
CPC604	3	1
CPE6013	-	-
CPL601	3	2
CPC701	3	3
CPC702	3	2
CPC703	3	3

CPE7025	3	3
CPP701	3	3
CPL701	3	-
CPC801	3	3
CPC802	3	2
CPC803	-	2
CPE8031	3	3
CPE8035	2	3
CPP802	3	3
CPL801	3	3

3.2 Attainment of Course Outcomes (50) (Institute Total Marks: 43)

3.2.1 Describe the assessment processes used to gather the data the data upon which the evaluation of course outcomes is based (10) (Institute Marks: 8)

The following process is used to gather the data.

1. Lesson Plan is prepared by every faculty at the beginning of the semester. The Lesson plan includes Course Outcomes, mapping of CO with PO and PSO, CO Assessment plan that contain CO Assessment tools, Rubrics, CO Attainment Target.
2. PAC Reviews the COs, assessment plan.
3. Every faculty gathers and compiles data throughout the semester as per the lesson plan.
    a. Unit test data is compiled as per unit test schedule.
    b. Course exit surveys are organized at end of semester.
    c. Lab experiments are assessed regularly by individual faculty.
    d. Assignments are assessed as per the schedule given in lesson plan.
    e. Quizzes and presentations are organized as per the schedule given in lesson plan.
    f. End semester examination results are compiled after declaration of results.
4. Faculty provides assessment data via Excel sheets. Faculty also provides copies of assessment instruments and graded student work. Copies are stored electronically.

Assessment tools used for CO attainment.

Unit Test: Two tests are conducted in each semester. The questions are set pertaining to the relevant COs. The marks earned by the students are analyzed for the attainment of CO.

Lab Experiments: Lab experiments are evaluated regularly according to rubrics designed. These rubrics are communicated to the students in advance.

Assignments: Assignments are evaluated regularly according to rubrics designed. These rubrics are communicated to the students in advance.

Quiz (Optional)**:** Quiz is used to evaluate the CO. Generally it is conducted online.

Presentations (Optional)**:** Students give presentations on topic assigned to them. Assessment of the presentation is done in accordance with rubrics provided.

Mini Projects (Optional)**:** Students design and implement small projects in a group or individually which is assessed based on the rubrics provided.

End Semester Examination (Theory and Practical): End semester examination results are used as per the guidelines of NBA.

Course Exit Survey: At the end of semester course exit survey is conducted and analyzed.

The result of analysis is used for calculation of attainment of CO.

3.2.2 Record the attainment of course outcomes of all courses with respect to set attainment levels (40) (Institute Marks: 35)

Sample CO Calculation

Upon completion of this course students will be able to:
CPE7025.1: Design Fuzzy inference system.

Target for Tools:

Test1: 60% of students will score minimum 60% marks.
Lab Experiment: 70% of students will score minimum 75% marks.
Assignment: 70% students will score minimum 70% marks.
University Exam Theory: 60% of Students will score minimum 60% marks.
University Exam Practical/Oral: 60% of Students will score minimum 70% marks.
Course Exit Survey: 75% students strongly agree and agree.

Rubrics for the Lab Experiments:

Sr. No	Performance Indicator	Below average	Average	Good	Excellent
1	On time Submission (2)	-	Submitted after deadline (1)	Early or on time submission(2)	-
2	Test cases and output(4)	Incorrect output (1)	Expected output is verified only for few test cases (2)	Expected output is Verified for all test cases but is not presentable (3)	Expected output is obtained for all test cases. Presentable and easy to follow (4)
3	Coding efficiency (2)	The code is not structured at all. (0)	The code is structured but not efficient(1)	The code is structured and efficient. (2)	-
4	Post Lab Assignment (2) Two post lab questions each of 2 marks	Not attempted (0)	Only one correct (1)	Both correct (2)	-

Rubrics for Assignments:

Indicator	Below Average	Average	Good	Excellent
Timeline (2)	More than two weeks late (0.5)	Two weeks late (1)	One week late (1.5)	Early or on time (2)
Design/Solution (6)	Partially correct design/solution with major mistakes. (2)	Partially correct design/Solution with minor mistakes(3)	Correct design/solution but some of the specifications or steps in design /solution missing (4)	Correct and detailed design/solution (6)

Organization (2)	-	Poor readability and not structured (0)	Poor readability and somewhat structured(1)	Readable and structured (2)

Direct Methods (80%):
Unit Test (UT), Assignments(A), Lab (L), Mini Project (MP), University Theory Exam (T) and University Practical Exam (P)
$CO_{3DM} = 0.2*UT + 0.2L + 0.2*A + 0.2*T + 0.2*P = 2.60$

Indirect Methods(20%): Course exit survey
Number of respondent: 34
Number of respondent strongly agree or agree: 34
$CO_{3IDM} = 3$

Overall attainment:
$CPE7025.1 = 0.8*CO_{3DM} + 0.2* CO_{3IDM} = 2.68$

SR. NO	SUBJECT	CO NUMBER	TARGET ATTAINMENT	CO ATTAINMENT
1	FEC101 Applied Mathematics – I	FEC101.1	2.4	2.8
		FEC101.2	2.4	2.8
		FEC101.3	2.4	2.8
		FEC101.4	2.4	2.6
2	FEC102 Applied Physics – I	FEC102.1	2.4	3
		FEC102.2	2.4	3
		FEC102.3	2.4	3
		FEC102.4	2.4	3
		FEC102.5	2.4	3
		FEC102.6	2.4	3
3	FEC103 Applied Chemistry - I	FEC103.1	2.4	2.37
		FEC103.2	2.4	2.37
		FEC103.3	2.4	2.4
		FEC103.4	2.4	2.25
4	FEC104 Engineering Mechanics	FEC104.1	2.4	2.84
		FEC104.2	2.4	3
		FEC104.3	2.4	2.68
		FEC104.4	2.4	2.48
		FEC104.5	2.4	2.8
5	FEC105 Basic Electrical & Electronics Engineering	FEC105.1	2.4	2.84
		FEC105.2	2.4	2.6
		FEC105.3	2.4	2.32
		FEC105.4	2.4	2.4
		FEC105.5	2.4	3
6	FEC106 Environmental studies	FEC106.1	2.4	2.52
		FEC206.2	2.4	3

		FEC106.3	2.4	3
		FEC106.4	2.4	1.72
7	FEC201 Applied Mathematics-II	FEC201.1	2.4	2.6
		FEC201.2	2.4	3
		FEC201.3	2.4	3
		FEC201.4	2.4	2.04
8	FEC202 Applied Physics-II	FEC202.1	2.4	3
		FEC202.2	2.4	3
		FEC202.3	2.4	2.84
		FEC202.4	2.4	2.76
		FEC202.5	2.4	2.08
		FEC202.6	2.4	2.8
9	FEC203 Applied Chemistry –II	FEC203.1	2.4	2.28
		FEC203.2	2.4	1.96
		FEC203.3	2.4	2.2
		FEC203.4	2.4	2.2
10	FEC204 Engineering Drawing	FEC204.1	2.4	2.68
		FEC204.2	2.4	2.68
		FEC204.3	2.4	2.68
		FEC204.4	2.4	2.68
		FEC204.5	2.4	3
11	FEC205 Structured Programming Approach	FEC205.1	2.7	2.28
		FEC205.2	2.7	2.84
		FEC205.3	2.7	2.6
		FEC205.4	2.7	2.08
12	FE206 Communication Skills	FE206.1	2.4	2.04
		FE206.2	2.4	2.28
		FE206.3	2.4	2.52
		FE206.4	2.4	3
		FE206.5	2.4	3
13	FEL101/FEL201 Basic Workshop Practice I and II	FEL201.1	2.4	3
		FEL201.2	2.4	3
		FEL201.3	2.4	3
14	CSC301 Applied Mathematics III	CSC301.1	2.5	3
		CSC301.2	2.5	2.88
		CSC301.3	2.5	3
		CSC301.4	2.5	3
		CSC301.5	2.5	3
15	CSC302 Object Oriented Programming Methodology	CSC302.1	2.5	1.96
		CSC302.2	2.5	2
		CSC302.3	2.5	1.12
		CSC302.4	2.5	1.36

16	CSC303 Data Structures	CSC303.1	2.5	1.96
		CSC303.2	2.5	2.28
		CSC303.3	2.5	2.28
		CSC303.4	2.5	2.28
17	CSC304 Digital Logic Design and Analysis	CSC304.1	2.4	2.28
		CSC304.2	2.4	1.88
		CSC304.3	2.4	1.72
		CSC304.4	2.4	2.68
18	CSC305 Discrete Structures	CSC305.1	2.4	2.36
		CSC305.2	2.4	2.36
		CSC305.3	2.4	1.8
		CSC305.4	2.4	2
		CSC305.5	2.4	1.04
		CSC305.6	2.4	2
19	CSC306 Electronic Circuits and Communication Fundamentals	CSC306.1	2.4	2.56
		CSC306.2	2.4	2.56
		CSC306.3	2.4	2.44
		CSC306.4	2.4	2.76
20	CSC401 Applied Mathematics IV	CSC401.1	2.5	2.52
		CSC401.2	2.5	2.84
		CSC401.3	2.5	2.76
		CSC401.4	2.5	3
21	CSC402 Analysis of Algorithms	CSC402.1	2.5	2.12
		CSC402.2	2.5	2.04
		CSC402.3	2.5	1.92
		CSC402.4	2.5	2.76
22	CSC403 Computer Organization and Architecture	CSC403.1	2.5	2.68
		CSC403.2	2.5	2.68
		CSC403.3	2.5	1.88
		CSC403.4	2.5	1.6
		CSC403.5	2.5	1.56
23	CSC404 Data Base Management systems	CSC404.1	2.5	2.36
		CSC404.2	2.5	2.16
		CSC404.3	2.5	2.28
		CSC404.4	2.5	2.16
24	CSC405 Theoretical Computer Science	CSC405.1	2.5	1.72
		CSC405.2	2.5	2.2
		CSC405.3	2.5	2.36
		CSC405.4	2.5	1.72
25	CSC406 Computer Graphics	CSC406.1	2.5	2.16
		CSC406.2	2.5	1.88
		CSC406.3	2.5	1.68
		CSC406.4	2.5	2.36

		CSC406.5	2.5	3
26	CPC501 Microprocessor	CPC501.1	2.5	2.52
		CPC501.2	2.5	2.04
		CPC501.3	2.5	2.36
		CPC501.4	2.5	2.52
27	CPC502 Operating Systems	CPC502.1	2.5	2.44
		CPC502.2	2.5	2.44
		CPC502.3	2.5	2.68
		CPC502.4	2.5	2.6
		CPC502.5	2.5	2.6
28	CPC503 Structured and Object Oriented Analysis and Design	CPC503.1	2.5	2.59
		CPC503.2	2.5	2.56
		CPC503.3	2.5	2.71
		CPC503.4	2.5	2.66
		CPC503.5	2.5	2.65
29	CPC504 Computer Network	CPC504.1	2.5	2.36
		CPC504.2	2.5	2.24
		CPC504.3	2.5	2.44
		CPC504.4	2.5	2
		CPC504.5	2.5	2.09
		CPC504.6	2.5	2.28
30	CPL501 Web Technologies Laboratory	CPL501.1	3	3
		CPL501.2	3	3
		CPL501.3	3	2.48
31	CPL502 Business Communication and Ethics	CPL502.1	2.5	3
		CPL502.2	2.5	3
		CPL502.3	2.5	3
		CPL502.4	2.5	2
		CPL502.5	2.5	2.44
32	CPC601 System Programming And Compiler Construction	CPC601.1	2.5	1.68
		CPC601.2	2.5	2.16
		CPC601.3	2.5	2.24
		CPC601.4	2.5	2.84
		CPC601.5	2.5	3
32	CPC602 Software Engineering	CPC602.1	2.6	2.84
		CPC602.2	2.6	2.36
		CPC603.3	2.6	2.68
		CPC604.4	2.6	2.84
		CPC605.5	2.6	3
33	CPC603 Distributed Databases	CPC603.1	2.5	2.68
		CPC603.2	2.5	2.48
		CPC603.3	2.5	2.48
		CPC603.4	2.5	2.48

34	CPC604 Mobile Communication and Computing	CPC604.1	2.5	3
		CPC604.2	2.5	2.52
		CPC604.3	2.5	2.04
		CPC604.4	2.5	2.44
		CPC604.5	2.5	3
35	CPE6013 Elective I German	CPE6013.1	2.5	2.36
		CPE6013.2	2.5	1.4
		CPE6013.3	2.5	2.6
		CPE6013.4	2.5	2.12
36	CPL601 Network Programming Laboratory	CPL601.1	3	3
		CPL601.2	3	3
		CPL601.3	3	2.8
		CPL601.4	3	2.8
37	CPC701 Digital Signal Processing	CPC701.1	2.5	2.12
		CPC701.2	2.5	2.16
		CPC701.3	2.5	1.92
		CPC701.4	2.5	2.2
38	CPC702 Cryptography and System Security	CPC702.1	2.5	2.68
		CPC702.2	2.5	2.52
		CPC702.3	2.5	3
		CPC702.4	2.5	2.52
39	CPC703 Artificial Intelligence	CPC703.1	2.5	2.68
		CPC703.2	2.5	2.48
		CPC703.3	2.5	2.48
		CPC703.4	2.5	2.48
		CPC703.5	2.5	2.68
40	CPE7025 Soft Computing	CPE7025.1	2.5	2.52
		CPE7025.2	2.5	2.2
		CPE7025.3	2.5	2.44
		CPE7025.4	2.5	2.2
41	CPP701 Project I	CPP701.1	2.5	2.2
		CPP701.2	2.5	2.84
		CPP701.3	2.5	2.6
		CPP701.4	2.5	2.6
42	CPL701 Network Threat and Attack Laboratory	CPL701.1	2.5	2.52
		CPL701.2	2.5	2.52
		CPL701.3	2.5	2.36
43	CPC801 Data warehousing and Mining	CPC801.1	2.5	2.52
		CPC801.2	2.5	2.52
		CPC801.3	2.5	2.36
		CPC801.4	2.5	2.04
		CPC801.5	2.5	2.52
44	CPC802	CPC802.1	2.5	2.36
		CPC802.2	2.5	2.2

	Human Machine Interaction	CPC802.3	2.5	2.2
		CPC802.4	2.5	2.52
45	CPC803 Parallel and distributed system	CPC803.1	2.5	1.96
		CPC803.2	2.5	1.8
		CPC803.3	2.5	2
		CPC803.4	2.5	2.2
		CPC803.5	2.5	1.96
46	CPE8031 Machine Learning	CPC8031.1	2.5	2.9
		CPC8031.2	2.5	3
		CPC8031.3	2.5	2.9
		CPC8031.4	2.5	2.9
		CPC8031.5	2.5	2.3
47	CPE8035 Big Data Analytics	CPC8035.1	2.5	2.08
		CPC8035.2	2.5	2.48
		CPC8035.3	2.5	2.84
		CPC8035.4	2.5	2.32
48	CPP802 Project II	CPP802.1	2.5	2.76
		CPP802.2	2.5	2.36
		CPP802.3	2.5	3
		CPP802.4	2.5	2.64
49	CPL801 Cloud Computing Lab	CPL801.1	2.5	2.72
		CPL801.2	2.5	2.68
		CPL801.3	2.5	2.68
		CPL801.4	2.5	2.52

3.3 Attainment of Program Outcomes and program specific outcomes (50) (Institute Total Marks: 48)

3.3.1 Describe assessment tools and processes used for measuring the attainment of each of the programme outcomes and program specific outcomes (10) (Institute Marks: 8)

Assessment of programme outcomes is based on the measures and processes Indicated below.

Course Outcome Assessment: At the end of every semester, faculty assesses the student's attainment of specific course outcomes based on performance in specific evaluative components of a course. Data is typically provided for all students enrolled in the courses. Faculty provides assessment data via Excel sheets (stored electronically). Faculty also provides copies of assessment instruments and graded student work. Copies are stored electronically. The evaluation cycle for programme outcomes and program specific outcomes is the end of every academic year.

Graduate Exit Survey: At the end of every academic year, graduating student assesses their opportunities to attain graduate student outcomes. Data is typically provided for all students completing the graduation. Program collects data through survey from all students completing the graduation and stored in paper format. The evaluation cycle is the end of every academic year.

Alumni Survey: At the end of every academic year Alumni assesses their performance basis

of the learning in the institute. Data is typically provided for 30-40% of alumni passed in previous three years. Program collects data from alumni through survey from alumnus who can be contacted. Copies are stored electronically. The evaluation cycle is the end of every academic year.

Employer Survey: At the end of every academic year, Employer provides feedback about performance of our alumni. Data is typically provided for 30-40% of alumni recruited. Program collects data from employer through survey. Copies are stored electronically. The evaluation cycle is the end of every academic year.

Placement Data: At the end of every academic year, Placement officer provides placement data. Data is typically provided for all placed students. Placement officer provides data in excel format and stored electronically. The evaluation cycle is the end of every academic year.

Final Year Project: At the end of every academic year, the Project coordinator provides final year project assessment data. Data is typically provided for all final year students. Project coordinator provides data in excel format and stored electronically. The evaluation cycle is the end of every academic year.

Assessment tools used for measurement of each PO as indicated below:

- **PO1 Measurement**: Course outcomes attainment, graduate exit survey and project assessment are used for measuring the attainment of PO1.
- **PO2 Measurement**: Course outcomes attainment, graduate exit survey, alumni survey and project assessment are used for measuring the attainment of PO2.
- **PO3 Measurement:** Course outcomes attainment, graduate exit survey, alumni survey, employer survey and project assessment are used for measuring the attainment of PO3.
- **PO4 Measurement**: Course outcomes attainment, graduate exit survey, alumni survey, and project assessment are used for measuring the attainment of PO4.
- **PO5 Measurement**: Course outcomes attainment, alumni survey, and project assessment are used for measuring the attainment of PO5.
- **PO6 Measurement**: Graduate exit survey, alumni survey, and employer survey are used for measuring the attainment of PO6.
- **PO7 Measurement**: Graduate exit survey, alumni survey, and employer survey are used for measuring the attainment of PO7.
- **PO8 Measurement**: Course outcomes attainment, alumni survey, employer survey and project assessment are used for measuring the attainment of PO8.
- **PO9 Measurement**: Course outcomes attainment, alumni survey, employer survey and project assessment are used for measuring the attainment of PO9.
- **PO10 Measurement**: Course outcomes attainment, alumni survey, employer survey, alumni profiles and project assessment are used for measuring the attainment of PO10.
- **PO11 Measurement**: Alumni survey, employer survey and project assessment are used for measuring the attainment of PO11.
- **PO12 Measurement**: Alumni survey, alumni profile and project assessments are used for measuring the attainment of PO12.
- **PSO1 Measurement:** Course outcomes attainment, alumni survey, employer survey, alumni profiles and project assessment are used for measuring the attainment of PSO1.
- **PSO2 Measurement:** Course outcomes attainment, alumni survey, employer survey,

alumni profiles and project assessment are used for measuring the attainment of PSO2.

3.3.2	**Provide results of evaluation of each PO and PSO (40) (Institute Marks: 40)**											
PO ATTAINMENT												
COURSE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
FEC101	2.77	-	-	-	-	-	-	-	-	-	-	-
FEC102	3	-	-	-	-	-	-	-	-	-	-	-
FEC103	2.35	-	-	-	-	-	-	-	-	-	-	-
FEC104	2.77	2.77	2.76	-	-	-	-	-	-	-	-	-
FEC105	2.63	2.69	-	3	-	-	-	-	-	-	-	-
FEC106	2.52	-	-	-	-	2.56	2.56	-	-	-	-	-
FEC201	2.66	-	-	-	-	-	-	-	-	-	2.55	-
FEC202	2.75	-	-	-	-	-	-	-	-	-	-	-
FEC203	2.16	-	-	-	-	-	-	-	-	-	-	-
FEC204	2.73	2.73	2.74	-	-	-	-	-	-	2.73	-	-
FEC205	2.45	2.67	2.84	-	-	-	-	-	-	-	-	-
FEC206	-	-	-	-	-	-	-	-	-	2.57	-	-
FEL101/201	3	3	-	-	3	-	-	-	-	-	-	-
CSC301	2.94	-	-	-	-	-	-	-	-	-	2.96	-
CSC302	1.61	1.24	1.24	-	1.24	-	-	-	1.24	1.24		-
CSC303	2.2	2.24	2.23	-		-	-	-	-	-	-	-
CSC304	2.14	2.1	2.1	-	2.46	-	-	-	2.68	2.68	-	-
CSC305	2.1	-	-	-	-	-	-	-	-	-	-	-
CSC306	2.62	2.5	2.68	2.56	2.55	-	-	-	2.56	-	-	-
CSC401	2.8	-	-	-	-	-	-	-	-	-	2.79	-
CSC402	2.21	2.20	2.76	-	-	-	-	-	-	-	-	-
CSC403	2.08	2.05	1.88	-	-	-	-	-	-	-	-	-
CSC404	2.24	2.2	2.16	-	2.28	-	-	-	-	-	-	-
CSC405	2	2	2	-	-	-	-	-	-	-	-	-
CSC406	2.22	2.35	2.42	-	2.35	-	-	-	3	-	-	-
CPC501	2.34	2.31	2.28	-	-	-	-	-	2.36	-	-	-
CPC502	2.55	2.58	2.6	-	2.6	-	-	-	2.6	2.6	2.56	
CPC503	2.63	2.63	2.67	-	2.67	-	-	-	-	2.63	2.57	
CPC504	2.24	2.18	2.11	-	2.28	-	-	-	-	-	-	-
CPL501	2.81	2.74	2.74	-	2.83	-	-	-	2.74	2.74	-	-
CPL502.1	-	-	-	-	-	2.72		2.81	2.84	2.52	2.91	-
CPC601	2.38	2.38	2.38	-	2.92	-	-	-	-	-	-	-
CPC602	2.74	2.74	2.76	-	2.72	-	-	-	2.72	-	-	2.72
CPC603	2.58	2.48	2.48	2.48	2.48	2.48	2.68	2.48	-	-	2.68	-
CPC604	2.6	3	3	-	3	-	-	-	3	-	-	-
CPE6013	-	-	-	-	-	-	-	-	-	2.12		2.12
CPL601	2.9	2.92	2.87	-	2.9	-	-	-	2.93	-	-	-
CPC701	2.1	2.14	2.2	-	2.2	-	-	-	2.2	-	-	-
CPC702	2.68	2.61	2.88	2.52	2.76	-	-	-	2.52	2.52		2.52
CPC703	2.60	2.55	2.54	2.68	2.54	-	-	-	2.68	2.6	2.68	2.48
CPE7025	2.34	2.34	2.34	-	2.35	-	-	-	-	-	-	-

					1							
CPP701	2.55	2.52	2.4	-	2.4	2.6		2.6	2.56	2.6	2.51	2.57
CPL701	2.52	2.47	2.46	2.36	-	2.47	2.44	2.44	-	2.47	-	2.4
CPC801	2.39	2.36	2.36	-	2.32	-	-	-	-	-	-	2.36
CPC802	2.32	2.32	2.36	-	2.36	2.52	-	-	-	-	-	-
CPC803	1.96	1.95	2.10	2.05	-	-	-	-	-	-	-	1.96
CPE8031	2.8	2.95	2.92	2.9	2.9	-	-	-	-	-	2.9	-
CPE8035	2.43	2.54	2.66	-	2.52	-	-	-	2.58	2.58	-	-
CPP802	2.71	2.71	2.88	-	2.75	-	-	-	2.69	2.64	2.71	2.82
CPL801	2.71	2.62	2.68	2.52	2.68	-	2.69	2.52	2.69	2.68	2.69	2.64
PO ATTAINMENT												
DIRECT ATTAINMENT	2.485	2.453	2.471	2.564	2.541	2.558	2.593	2.569	2.589	2.495	2.708	2.459
INDIRECT ATTAINMENT	3	3	3	1.5	3	3	3	3	3	3	2.5	2.5
PO ATTAINMENT	**2.588**	**2.563**	**2.577**	**2.351**	**2.633**	**2.646**	**2.675**	**2.655**	**2.671**	**2.596**	**2.667**	**2.467**

PSO Attainment:

	PSO1	PSO2
FEC101	-	-
FEC102	-	-
FEC103	-	-
FEC104	-	-
FEC105	-	-
FEC106	-	-
FEC201	-	-
FEC202	-	-
FEC203	-	-
FEC204	-	-
FEC205	2.34	-
FEC206	-	-
FEL101/201	-	-
CSC301	-	-
CSC302	1.61	1.24
CSC303	2.2	2.2
CSC304	2.14	-
CSC305	2.1	-
CSC306	-	-
CSC401	-	-
CSC402	2.21	2.21
CSC403	2.08	
CSC404	2.24	2.22
CSC405	2	
CSC406	2.216	3

CPC501	2.328	2.3
CPC502	2.552	2.6
CPC503	2.634	2.634
CPC504	2.235	
CPL501	2.81	2.74
CPL502.1	-	-
CPC601	2.384	-
CPC602	2.744	2.744
CPC603	2.53	2.48
CPC604	2.5	2.04
CPE6013	-	-
CPL601	2.9	2.9
CPC701	2.1	2.2
CPC702	2.68	2.733
CPC703	2.58	2.48
CPE7025	2.34	2.34
CPP701	2.576	2.4
CPL701	2.467	-
CPC801	2.392	2.36
CPC802	2.296	2.52
CPC803	-	2.12
CPE8031	2.8	2.9
CPE8035	2.43	2.547
CPP802	2.56	2.88
CPL801	2.65	2.52
DIRECT ATTAINMENT	2.394	2.452
INDIRECT ATTAINMENT	2.5	3
PO ATTAINMENT	**2.416**	**2.562**

CRITERION 4	Students' Performance	150

4. Students' Performance (150) (Institute Total Marks 120.43)

Item	16-17	15-16	14-15	13-14	12-13	11-12	10-11	9-10
Sanctioned intake of the program (N)	60	60	60	60	60	60	60	60
Total number of students admitted in first year minus number of students migrated to other programs/institutions plus number of students migrated to this program (N1)	64 *+3(M #)	63*+1 (M)	64*+1(M)	64*+1 M	64*+2 (M)	64*+3 M=67	61*+10M=71	61*+5 M-1M=65
Number of students admitted in 2nd year in the same batch via lateral entry (N2)	12	13	12	12	12	12	12	10
Separate division students, if applicable (N3)	0	0	0	0	0	0	0	0
Total number of students admitted in the program (N1 + N2 + N3)	79	77	77	77	78	79	83	75

* Additional seats are filled by DTE as per Government norms, i.e., Term Fee Waiver Scheme (TFWS), J & K quota, etc.

Transferred from Vasantdada COE

Year of Entry	N1 + N2 + N3	Number of students who have successfully graduated without backlogs 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	79 (67+12)	53/67	X	X	X
CAYm1	77 (64+13)	64-12=52	47+10=57	X	X
CAYm2	77(65+12)	65-12=53	51+9=60	50+9=59	X
CAYm3(LYG)	77(65+12+0)	65-12=53	52+6=58	52+6=58	52+6=58
CAYm4(LYGm1)	78(66+12+0)	66-18=48	45+8=53	43+8=51	43+8=51
CAYm5(LYGm2)	79(67+12+0)	67-26=41	41+2=43	40+2=42	40+2=42
CAYm6(LYGm3)	83(71+12+0)	71-38=33	33+11=44	32+11=43	31+11=42

Year of Entry	N1 + N2 + N3	Number of students who have successfully graduated			
		I Year	II Year	III Year	IV Year
CAY	67+12=79	66/67	X	X	X
CAYm1	64+13 = 77	62/64	74/77	X	X
CAYm2	65 + 12 =77	64/65	75/77	74/77	X
CAYm3(LYG)	65+12+0 =77	63/65	73/77	71/77	**71/71**
CAYm4(LYGm1)	66+12+0 = 78	59+2(M)=61/66	72/78	72/78	71/78
CAYm5(LYGm2)	67+12+0 = 79	59+3(M)=62/67	73/79	73/79	72/79
CAYm6(LYGm3)	71+12+0 = 83	54+10(M)=64/71	71/83	66/83	65/83

4.1 Enrolment Ratio (20) (Institute Marks 20)

Enrolment Ratio = N1/N

CAY: - 67/60 =111.6%

CAYm1: – 64/60 = 106.6

CAYm2 :–65 /60=108.3

CAYm3 :– 65/60=108.3

Item	Marks
>= 90% students enrolled at the First Year Level on average basis during period of assessment	**20**
>= 80% students enrolled at the First Year Level on average basis during period of assessment	18
>= 70% students enrolled at the First Year Level on average basis during period of assessment	16
>= 60% students enrolled at the First Year Level on average basis during period of assessment	14
Otherwise	0

4.2 Success Rate in the stipulated period of the program (40) (Institute Total Marks 27.25)

4.2.1 Success rate without backlogs in any semester/year of study (25) (Institute Marks 16)

SI = (Number of students who have graduated from the program without backlog) / (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 = 25 * Average SI

Item	Latest year of graduation (LYG) (CAYm3)	Latest year of graduation minus 1 (LYGm1) (CAYm4)	Latest year of graduation minus 2 (LYGm2) (CAYm5)
Number of students admitted in the corresponding First year + admitted in second year via lateral entry and separate division, if applicable	77	78	79
Number of students who have graduated without backlogs in the stipulated period	58	50	44
Success Index (SI)	0.75	0.64	0.53
Average SI	0.64		

Success Rate = 25 * Average SI = 25x0.64 = 16

4.2.2 Success rate in stipulated period (15) (Institute Marks 13.7)

SI = (Number of students who have graduated from the program in the stipulated period of course duration) / (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 = 15 * Average SI

Item	LYG (CAYm3)	LYGm1 (CAYm4)	(LYGm2) (CAYm5)
Number of students admitted in the corresponding First year + admitted in second year via lateral entry and separate division, if applicable	77	78	79
Number of students who have graduated in the stipulated period	71	71	72
Success Index (SI)	0.92	0.91	0.91
Average SI	0.9133		

Success Rate = 15 * Average SI = 0.9133 x 15 = 13.7

4.3 Academic Performance in Third Year (15) (Institute Marks 11.4)

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

API = ((Mean of 3rd Year Grade Point Average of all successful students on a 10 point scale) or (mean of the percentage of marks of all successful students in Third year/10))*(number of successful students / number of students appeared in the examination)

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

Academic Performance	CAY	CAYm1	CAYm2
Mean of CGPA or mean percentage of all successful students (X)	7.65	7.77	7.73
Total number of successful students (Y)	74	71	72
Total number of students appeared in the examination (Z)	75	73	72
API = X * (Y/Z)	7.54	7.55	7.73
Average API	7.60		

Academic Performance = 1.5 * Average API = 1.5 x 7.60 = 11.4

4.4 Academic Performance in Second Year (15) (Institute Marks 11.12)

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

API = ((Mean of 2nd Year Grade Point Average of all successful students on a 10 point scale) or (mean of the percentage of marks of all successful students in Third year/10))*(number of successful students / number of students appeared in the examination)

Successful students are those who are permitted to proceed to the third year.

Academic Performance	CAY	CAYm1	CAYm2
Mean of CGPA or mean percentage of all successful students (X)	7.23	7.78	7.64
Total number of successful students (Y)	74	75	73
Total number of students appeared in the examination (Z)	75	76	75
API = X * (Y/Z)	7.14	7.67	7.43
Average API	7.41		

Academic Performance = 1.5 * Average API = 1.5 x 7.41 = 11.12

4.5 Placement, Higher Studies and Entrepreneurship (40) (Institute Marks 34.66)

Assessment Points = 40 * average placement

Item	CAY	CAYm1	CAYm2
Total number of Final Year Students (N)	71	72	74
Number of students placed in companies or government sector (X)	56	55	57
Number of students admitted to higher studies with valid qualifying scores (GATE or equivalent state or national level tests, GRE, GMAT, etc.) (Y)	5	9	06
Number of students turned entrepreneur/technology (Z)	1		
Placement Index = (X + Y + Z)/N	0.87	0.88	0.85
Average Placement	0.86		

Assessment Points = 40 *0.86=34.66

4.6 Professional Activities (20) (Institute Total Marks 16)

4.6.1 Professional societies/chapters and organizing engineering events (5) (Institute Marks 5)

Institute have following student chapters:

- CSI
- CODELABS
- ACM
- CESA
- IEEE
- IEEE WIE
- SAE

Each student chapter organizes at least two technical events in a semester. Students are encouraged to become members of multiple students' chapter. These activities facilitate students to improve their organizational skills, leadership qualities, teamwork and

communication skills. By participating in these activities, students enhance their technical knowledge and sharpen their engineering skills as well as learn new technologies.

COMPUTER SOCIETY OF INDIA (CSI)

The CSI Fr. CRCE student chapter is one of the 500 student chapters in the nation. The purpose of CSI is to promote scientific and educational development of the masses. The promotion of information technology as a profession is the top priority of CSI today. To fulfill this objective, CSI student chapter regularly organize seminars, workshops, lectures and projects.

Summary of the events organized by CSI for past three years is listed below.

Sr. No	Event	Date	Purpose	Organized By
Year : 2016-17				
1	Seminar on Raspberry Pi	28th July 2016	This seminar was conducted to introduce the students about Raspberry PI and its various applications in I.O.T (Internet of things)	CSI committee
2.	LASER TAG, Junkyard Wars, Game of Codes, LAN Gaming competition(Counter Strike)	26 August 2016	Fun technical events such as quiz, coding and Gaming etc.	CSI committee
3.	Python Workshop For Women empowerment.	3rd September 2016	This workshop was conducted in association with IIT BOMBAY TECHFEST , to promote women engineers to learn various programming languages and implement them in todays ever changing technological world. Overall, this workshop was very informative and provided a deep insight to the syntax and semantics of python language.	CSI in association with IIT BONBAY TECHFEST
4.	Industrial Visit to Westin, Pune	11th September 2016	A very informative experience interacting with the industry professionals and also having a first hand experience of the contribution of Information Technology in the domain of hotel	CSI committee
5.	FE Orientation	28th September 2016	A fun and interactive session with the FEs and informative at the same time. First year students were introduced to basic concepts of algorithms.	CSI committee
6.	Technocrat	23rd January 2017	A fun technical event of 3 rounds with a team of 2 which involved technical quiz, blind coding and GK	CSI committee

			quiz Round.	
7.	Decrypt the Scrypt	24th January 2017	A technical fun event with clues all over the college and decrypting one clue would lead them to another clue .Solving those clues and performing certain challenging tasks will finally lead them to the prize.	CSI committee
8.	Photoshot	16th-24th January 2017	An Event that was conducted throughout the week for students to showcase their photography talents.	CSI committee
9.	Ethical Hacking Workshop	19th January 2017	The objective of the workshop was to give students hands-on environment where they can shown how to conduct ethical hacking. The students were exposed to an entirely different way of achieving optimal information security posture ,by hacking it.	CSI committee
Year : 2015-16				
1.	Robotics Workshop	12th August 2015	A level 1 robotics workshop to familiarize the students with basic electrical components of a bot and explaining the concepts involved in making them. This workshop also helped the students to learn about soldering techniques. The students built a working level 1 bot and had a great time.	CSI committee in collaboration with Robocon CrCE.
2.	Coding Competition	29th August 2015	Fun technical events such as quiz, coding and Gaming etc..	CSI committee
3.	LAN Gaming	29th August 2015	A LAN Gaming competition was held in this event .The eliminations of the teams were done through 4 thrilling rounds till the finals .all the participating teams had a great experience since the competition was neck to neck and exciting.	CSI committee
4.	LASER TAG	29th August 2015	Laser guns and laser sensing jackets were given to the participants to be worn. This is a fun and power packed game where two teams got into the battle arena and competed to get the highest scores. The school auditorium was transformed into a dark battle arena with UV lights and glowing obstacles that were radium painted.	CSI committee

5.	Networking Workshop	2nd October 2015	A detailed and informative 2 day workshop on building networks. Day 1 explained the basic concepts of networks and the hardware involved. On the second day the students created networks using software applications therefore giving them a hands on experience.	CSI committee
6.	Coding competition	25-30th January 2016	A 3 hour coding competition in association with HackerRank with thrilling problem statements.	CSI in collaboration with Codelabs
7.	LAN Gaming	25-30th January 2016	A LAN Gaming competition was held in this event .The eliminations of the teams were done through 4 thrilling rounds till the finals .all the participating teams had a great experience since the competition was neck to neck and exciting.	CSI committee
8.	Decrypt the scrypt	25-30th January 2016	A technical fun event with clues all over the college and decrypting one clue would lead them to another clue .Solving those clues and performing certain challenging tasks will finally lead them to the prize.	CSI in collaboration with Codelabs.
9.	Technocrat	25-30th January 2016	A fun technical event of 3 rounds with a team of 2 which involved technical quiz, blind coding and error detection.	CSI committee
10.	Photoshot	25-30th January 2016	It was a non technical event to encourage creativity among students by taking photography entry by the students.	CSI committee
Year : 2014-15				
1	Ethical Hacking	21st Sep, 2014	The objective of the workshop was to give students hands-on environment where they can shown how to conduct ethical hacking. The students were exposed to an entirely different way of achieving optimal information security posture,by hacking it.	CSI Committee
2	Web Development course	31st Aug, 6th and 7th sep,2014	The objective of the workshop was to teach the advance web technology concepts to the students and to enable them to develop their own web application.	CSI committee
3	LASERTAG	22nd Aug 2014	Laser guns and laser sensing jackets were given to the participants to be worn. This is a fun and power packed game where two teams got into the battle arena and competed	In collaboration with WIE IEEE

			to get the highest scores. The school auditorium was transformed into a dark battle arena with UV lights and glowing obstacles that were radium painted.	
4	LAN GAMING	22 , 23 Aug 2014	A LAN Gaming competition was held in this event .The eliminations of the teams were done through 4 thrilling rounds till the finals .all the participating teams had a great experience since the competition was neck to neck and exciting.	CSI

Codelabs

Codelabs CRCE was formed in 2015-16 with the following as its primary objectives.

1. Promotion of interdisciplinary nature of coding to students from all branches
2. Development of association with globally reputed programming platforms Hacker rank and Hacker earth.
3. Making the students more efficient in developing production-grade code.
4. Organization of workshops to keep students updated with the latest and greatest in technology.

The summary of the events organizes by Codelabs are as follows:

Sr. No	Event	Date	Purpose	Organized By
	Year : 2016-2017			
1.	The 'Tech Wizard'	26th August 2016	Event had 50 questions based on topics such as logical and reasoning, GK, coding, technical and lots of other topics.	Codelabs
2.	The Code Combat	26th August 2016	The problem statements given were easy at the beginning with the difficulty level increasing gradually as the problem number increased.	Codelabs
3.	A Pokemon Go	26th August 2016	Event and the winner was the one who caught the most pokemon in 2 hours.	Codelabs
4.	Coding Competition 'Algoholic',	**8 th October** 2016, to 16th October 2016, **16th January** 2017, to 23rd January 2017, **19th January** 2017	Three coding competitions of different difficulty levels were conducted.	Codelabs
5	Seminar on 3 GitHub and	23rd January 2017	A seminar on version control (Git/Github) was conducted	Codelabs

	Necessities for Placements		by Ruben Monteiro (BE Computers) and Jijin Jose (BE IT) as a part of the comps week. The distributed version control and source code management functionality of Git was explained to the students in this seminar.	
Year : 2015-2016				
1	Computer Week	25th January, 2016 -29th January	→3 hour coding competition in association with HackerRank with thrilling problem statements. →A technical fun event with clues all over the college and decrypting one clue would lead them to another clue .Solving those clues and performing certain challenging tasks will finally lead them to the prize. →A fun technical event of 3 rounds with a team of 2 which involved technical quiz, blind coding and error detection. →Photography event where people clicked pictures in an around college campus.	Codelabs in collaboration with CSI
2	Workshop on Necessities and Technical Prerequisites for Placement	12th and 13th February, 2016	Detailed discussion on resume writing and to teach students algorithms, data structures with real life applications, web development architectures and data persistence. Students also learnt various puzzle solving techniques.	Codelabs

Institute Of Electronics and Electrical Engineers (IEEE)

IEEE-CRCE, the Fr. C. R. C. E. students' branch of IEEE was established in 1995. The main idea behind establishing IEEE-CRCE was to involve students in the activities of Bombay Chapter. The students are constantly encouraged to arrange the activities like quiz contests, debates and workshops. The various activities conducted under these professional societies are listed in the following table:

Sr. No.	Event Organized	Event Date	Event Description	Purpose
Year : 2016-17				
1	Ethical Hacking Workshop	Ethical Hacking Workshop	Hands on training was on ethical hacking and also various security concepts were taught No. of participants: 26 students 2nd and 3rd year Resource Person: Mr Sainath Volam	The objective of the workshop was to give students hands-on environment where they can shown how to conduct ethical hacking.
2	Workshop on Latex	8/22/2016	Students were taught Latex software , how to use it for project documentation, Technical paper writing, benefits over other softwares No. of participants: 44 students Resource Person: Mr VaibhavGodbole	To teach the students basics of LATEX so that students can use it for documentation and technical paper writing.
3	Crescendo'16	8/26/2016	-Virtual gaming -Robowars - Tecathlon - Bridge of Death No. of participants: 84 students (all branches)	Providing the students with a platform to put their technical skills to test through various competitions
4	Technologies and career opportunities in VLSI	9/26/2016	Basics of VLSI, various job opportunities in core VLSI No. of participants: 168 (All Electronics students) Resource Person: Dr B.Satyanarayana (TIFR)	Career guidance in the field of electronics
5	Technomania'17	3/17/2017	Technical Paper Presentation, Technical Debate and Project competition in the field of Electronics, Computers. No. of participants: 154 students	A National Level Technical Paper Presentation, Project and quiz Competition
	Year :2015-2016			
1	Keil and Proteus Workshop	24 July, 2015	The workshop was conducted by Mr. Yash Singh and Mr. Chirag Pooniwala of the Final Year of Electronics Engineering students and was attended by 75 students from Third Year of Electronics	To teach the students the basics of Keil and Proteus software

			Engineering Department.	
2.	Technical Paper Presentation Seminar	29 July, 2015	The seminar was conducted by Prof Sapna Prabhu. Was attended by approximately 80 students across Second, Third and Fourth year of Engineering. The basics of Paper Presentation, the format, types of paper presentations, publishing of the paper and plagiarism discussed	To encourage students to publish papers in reputed journals and conferences
3.	**CResCEndo'15** • Defuse the Bomb • Robo Snake • Virtual Reality Gaming • Code Hunt	28 August, 2015	Four major events were conducted during the Inter collegiate Technical Festival of the College	Providing the students with a platform to put their technical skills to test through various competitions
4.	SPARKC	26 September, 2015	58 Fr. Agnel Ashram students were brought to the college and were taught Adobe Photoshop and MS Paint by our council which was followed by snacks and entertainment	Main objective of the workshop was to teach Fr. Agnel ashram students the basics of computer.
5.	FE Orientation	15 February, 2016	First Year students of FRCRCE were give a brief about IEEE, its history and the benefits of being an IEEE member. The seminar was attended by 150 students.	To introduce F.E. students to IEEE section and to encourage them to be a part of IEEE
6	Technomania	11 March, 2016	National Level Technical Symposium organized in collaboration with IEEE-CRCE and IEEE Bombay Section	A National Level Technical Paper Presentation, Project and quiz Competition
Year :2014-2015				
1	SPARKC'14	20th July 14	Workshop for Children of Balbhavan	To Teach the Children the basic computer skills like MS Word, MS Power Point, Paint
2	IEEE LABSTRUCK AND SOLDER-DON	23rd and 24th July 14	Introduction to lab instruments and soldering	Educating 2nd year students in using lab instruments and practical hands on experience in

				soldering circuits
3	CResCEndo'2014 - ROBO OLYMPICS - MIRROR MAGIC	22-23rd August 2014	Inter collegiate Technical Festival of the College	Providing the students with a platform to put their technical skills to test through various competitions
4	Technomania - 2015	20th March 2015	National Level Technical Symposium organized in collaboration with IEEE-CRCE and IEEE Bombay Section	A National Level Technical Paper Presentation, Project and quiz Competition
5	• A Talk by Alumnus	3rd March 2015	A Talk on Single Photon Counting and image sensor Technology was delivered by Dr. Vinit Dhulla (Alumnus) on.	The purpose was to interact with students on current technology.

IEEE WOMEN-IN-ENGINEERING (WIE)

WIE-CRCE was inaugurated in Fr. C. R. C. E. in 2009. WIE-CRCE is an Affinity group of IEEE which is the world's leading professional association for the advancement of technology. WIE-CRCE aims at inculcating the importance and advancements related to technology and social issues to women and other students so as to make them whole as an individual with a firm technical background. The events organized by IEEE-WIE include workshops, industry visits, seminars, providing basic education to underprivileged children.

The various activities conducted under these professional societies are listed in the following table.

Table: 4.6.1.6 IEEE WIE EVENTS

Sr. No.	Event Organized	Event Date	Event Description	Purpose
	Year 2016-17			
1.	CResCEndo'16	8/26/2016	Events: Technical Debate Techathlon Participants: students from all branches	Providing the students with a platform to put their technical skills to test through various competitions
2.	SPARKC'16	9/26/2016	Children from Fr. Agnel Ashram were taught computer basics Participants: 30 children from Fr.Agnel ashram **Resource person :** Third year students	Main objective of the workshop was to teach Fr. Agnel ashram students the basics of computer.
3	Industrial Visit to Institute for Design of Electrical Measuring	3/4/2017	Participants: 3rd year Fr.CRCE stdents (30) Resource person:Mr. M. K. Charate	To provide an insight to students on how the companies and an exposure to the

	Instruments,Mumbai			practical aspects of Electronics Engg
4	Udaan Workshop	3/3/2017	Stress Management Workshop 50 students from 1st,2nd,3rd year Resource persons: Mr. Kush Panchal	
5	Womens Day Celebration	8/03/2017	120 female students and staff from CRCE Resource persons: Dr.Sangeeta Pikale, Dr. Taskeen Nadkar , Ms. Mrinmayee Ranade	Importance of woman, her role in the society and how one balance between work and household chores.
6	Technomania'17	17/3/2017	Technical Paper Prsentation, Technical Debate and Project comprtition in the field of Electronics,Computers. Participants: 154 students	A National Level Technical Paper Presentation, Project and quiz Competition
	Year : 2015-16			
1.	CResCEndo'15 • Robo Snake • Code Hunt	28th August, 2015	Two major events were conducted during the Inter collegiate Technical Festival of the College.	Providing the students with a platform to put their technical skills to test through various competitions
2.	SPARKC	26 September, 2015	Fr. Agnel Ashram students were brought to the college and were taught Adobe Photoshop and MS Paint by our council which was followed by snacks and entertainment	Main objective of the workshop was to teach Fr. Agnel ashram students the basics of computer.
3.	Womens' Day celebration	8th March 2016	Dr. Sangeeta Pikale, an obstetrician and gynaecologist, Ms. Tanuja R. Jadhav, a chief security officer and Ms. Vijaya Pandya, head of the Operations for Digitate at TCS, our Principal, Ms. Srija Unnikrishnan gave their word of knowledge and shared their experience on the importance of woman Word of knowledge and	Importance of woman, her role in the society and how one balance between work and household chores.

			shared their experience.	
Year :2014-2015				
1.	CResCEndo'2014 - **ROBO MAZE** - **LASER TAG**	22-23rd August 2014	Inter collegiate Technical Festival of the College	Providing the students with a platform to put their technical skills to test through various competitions
2.	Industrial Visit	31 Jan 15	Visit to Erhardt+Leimer Pvt Ltd, Ahmadabad	To provide an insight to students on how the companies and an exposure to the practical aspects of Electronics Engg
3	Technomania - 2015	20th March 2015	National Level Technical Symposium organized in collaboration with IEEE-CRCE and IEEE Bombay Section	A National Level Technical Paper Presentation, Project and quiz Competition
4	Challenges in VLSI Design	13th -14th Mar, 2015	Two day workshop	To provide better exposure for the faculty handling VLSI design to prepare them for the topics in the revised syllabus of the subject

SOCIETY OF AUTOMOTIVE ENGINEERS

SAE (Society of Automotive engineers) India Fr. CRCE collegiate club was started in 2011. SAE is a professional engineering society which represents every engineering and scientific discipline . The council aims to enhance formal educational and professional development.

Under SAE banner there are three teams which represent Fr. CRCE in various national and international competitions.

1.TEAM ABADHA

Team ABADHA CRCE represents Fr. CRCE at various national level competitions. Team ABADHA CRCE has been participating in BAJA SAEINDIA for three consecutive years and has made notable improvement in the design of ALL TERRAIN VEHICLE (ATV) year after year.

Our student's contribution

At ISK 2015, Team ABADHA made the college proud by securing **7th rank overall** and bagging the **BEST MANUFACTURING AWARD**.

2.TEAM VAYUSHASTRA

Team VAYUSHASTRA represents our college at SAE Aero design series west, international competition. They design and build a UAV right from scratch.

Our student's achievements

- Team Vaayushastra secured **3rd position** in the technical oral presentation round, a 6th place in technical design and an overall international 5th rank in the SAE Aero Design

West (Advanced Class)competition, March 2017

- Team Vaayushastra secured **6th position** in the world and first in INDIA in **SAE AERO EAST, 2016** design competition **held at Dallas, Texas, USA** in March 2016.
- Team Vaayushastra **secured first place in technical presentation and 6th position** in the overall ranking in **SAE AERO EAST 2015** in design competition held at **LAKELAND, FLORIDA, USA** in March 2015
- Team Vaayushastra **secured 7th position in Micro class SAE Aero WEST 2014** design competition held at **Dallas, Texas, USA** on 28 March,2014

4.6.2 Publication of technical magazines, newsletters, etc. (5) (Institute Marks 3)

Students at C.R.C.E are encouraged to publish various technical magazines and newsletters under various student chapters. This provides a good platform to showcase their communication and writing skills.

The college publishes an annual magazine, FRAGMAG, which is launched during the Annual fest of the college, Euphoria. Students can express their own ideas of in a good form and in different languages. Magazine contains a collection of articles, poems, stories and Sketches. They are written mainly by the students but faculty and the Alumni are also invited to contribute to the magazine.

- CSI student chapter of CRCE also publishes its yearly newsletter SCRYPT.
- ACM publishes its yearly newsletter KAIZEN, which includes articles by students as well by faculty on the latest technological developments.
- IEEE-CRCE publishes its yearly newsletter, TECHNOBUZZ, which includes articles by students on the latest technological developments.

Publishing such magazines and newsletters promote the spirit of co-operation and encourages healthy competition amongst the students. Table 4.6.2.1 lists various magazines / newsletters published by the different technical/non-technical societies.

Table 4.6.2.1: List of magazines and news letters

Magazine/ Newsletter	Year	Publisher	**Students from Computer Department**
SCRYPT	March 2016	CSI	Chair-Person: Faiqa Shaikh General Secretary: Nishka Monteiro Treasurer: Khusaal Giri Event heads: Pankaj Sankpal, Priyanka Bane Event Team: Jaiman Salva, Varun Yadav Technical Head: Glen D'Mello Tech Team: Igor Monteiro PR and Sponsorship Team: Sidhhant Dimri, Brijesh Thapa Magazine Team: Manpreet Krishnan
SCRYPT	March 2015	CSI	Chair Person: Pratyush Mohapatra Vice Chair : Faiqa Sheikh Senior Advisor: Tejashree Gharat Designer: Varun Bhatt
KAIZEN	March 2015	ACM student chapter	Editorial Team: Karan Diware, Ayushi Gupta,Dhairyashil Patil, Tejas Khot, Nikhil Badugu and Aishwarya Khokle from T.E. Computer , Varun Bhatt from S.E comp
TECHNOBUZZ	2015	IEEE CRCE and WIE	Web Master: Rushikesh Sargar WIE Chair Person: Hruda Mohod

4.6.3 Participation in inter-institute events by students of the program of study (10) (Institute Marks 8)

Achievements in competition and awards:

Major achievements for last three years are list below.

Year 2016-17

1. SAE Aero Design West 2016-17. (**International Level**). Secured a 3rd position in the technical oral presentation round, a 6th place in technical design and an overall international 5th rank. Maintained their dominance in the Asia-Pacific region as the best team in advanced class.
2. Smart India HackThon , 2017 - A **national level** competition. Our Team presented "Creating UGC website Dashboard – an innovative idea" and secured 11th place among top 15 team.
3. Smart India HackThon ,2017 - A **national level** competition. The Team presented "Tracking Individual Packages in Indian Railway System –an innovative idea". Team was nominated to participate in the Grand Finale of Smart India HackThon, 2017 competition
4. E- Yantra Ideas competition 2017 – A **national level** project competition organized by IIT Bombay held on 3rd April 2017. Our team Shortlisted for regional finals.

Year 2015-16

1. **International Event** - SAE Design Aero East 2016 Dallas,Texas: Secured globally **6 position** and secured **1 position** in india
2. **International Event**- Aerial Vehicle Competition 2016 : Cleared **1 level** of competition.
3. **National Event** - Baja SAE INDIA 2016: Secured **51 position** out of 400 teams and secured **1 position** in Mumbai.
4. **International event -** International Series of KARTING – ISK 2015: Received **best manufacturing award** and **7 position** in overall ranking. Sahil (T.E. Computer) head of Braking Department in Team ABADHA
5. **National Event –** Programming Contest: Hardik Agrawal from computer department secured **2** prize in national programming contest 2015.

Year 2014-15

1. **International Event -** SAE Aero Design EAST – 2015, LAKELAND, FLORIDA: Secured **1** place in technical presentation, **6 position** in overall Ranking, Team Vayushstra
2. **National Event –** ROBOCON Participated in ROBOCON national level competition held at Pune, 2015.
3. **International Event –** SAE Aero Design: secured **6th position,** Advanced class **SAE AERO WEST 2014** held at **,Dallas, Texas,USA** design competition, March 2014. **Year 2013-14**
4. **International Event** - SAE Aero Design West – 2014, design competition held at Dallas, Texas on 28 March 2014 : Secured 7th position.
5. **National Event –** OPUS'14 - A National Level project showcase: Secured FIRST prize, April 2014. Students: Nikhil Gupta, Cherry Parashar and Harshnnel Gupta
6. **National Event** – TGMC 2013: Among top 15 finalist. Students: Hardik Agrawal and Dylan Anrades

Detailed description of our student's achievements and awards are listed in table 4.6.3.1.

Year 2016-17				
Sr. No	**Event**	**Achievements**	**Date and Year**	**Student**
1	Smart India HackThon ,2017 - A national level competition	The Team presented "Tracking Individual Packages in Indian Railway System –an innovative idea".	1st and 2nd April 2017 in Udaypur	THOMSAN NAIDU (Third Year computer)

		Team was nominated to participate in the Grand Finale of Smart India HackThon, 2017 competition		
2	Smart India HackThon , 2017 - A national level competition	Our Team presented "Creating UGC website Dashboard – an innovative idea" and secured 11th place among top 15 team	1st and 2nd April 2017, held at Manipal Institute of Technology	FRANKY NAIDU (Third Year)
3	Smart India HackThon , 2017 - A national level competition	Certificate of participation	-	Ruchita Rozario , Rohit Sharma
4	TECHNOMANIA – 2017 – National level Project Competition	Won the 1st place in technical paper presentation	17th 18th March, 2017, held at CRCE Bandra	Denise Pereira, Warren Fernandez
5	TECHNOMANIA – 2017 – National level Project Competition	Won the 2nd prize in technical paper presentation	17th 18th March, 2017, held at CRCE Bandra	Bryceleen Dsouza, Mugesh Nadar, Desouza Leon (B.E. Computer)
6	ABHIYANTRIKI 2016	Runner up	Organized by KJS, Vidyavihar on 30th sep to 1st Oct	Samartha Gupta
7.	Code Chef online coding	Won 1st price in Intercollege competition	18th March, 2017, organized by K.J Somaiya, Mumbai.	Samarth Gupta
8.	ICPC Intercollegiate Programming Contest, (*National level coding* competition)	Stood 168 out of 450 teams.	Amritapuri, held in Kerala in Dec 2016	Samarth Gupta
9.	Abu Robocon India 2017,	Secured 2nd rank among the teams form Mumbai and 18th rank at national level among 112 teams	MIT Pune, 2-5 March 2017	Prateek Singh Chavhan, Samson Anto, Edwin Clement
10.	SAE Aero Design West 2016-17. (International Level)	Secured a 3rd position in the technical oral presentation round, a 6th place in technical design and an overall international 5th rank. Maintained their dominance in the Asia-Pacific region as the best team in advanced		Arnav Prasad, Neigel koli, Rahul Pereira, Igor Monteiro (third year) Christine Tharian, Ruth Peter, Malita

		class.		Saldhana (Second Year).
11	E- Yantra Ideas competition 2017 – A national level project competition	Shortlisted for regional finals	Organized by IIT Bombay held on 3rd April 2017	Shaun Kollannur, Joshua koyeerath
12	Google Summer of code 2016	Successfully completed internship	April 22-August 23,2016	Richhiey Thomas
13	Vivessvaraya Memorial debate competition- COEP	Certificate of participation	COE ,Pune 4th 5th Feb, 2017	Maanav Doshi
14	Inter College Crossfire Debate competition	Certificate of participation	Held by NMIMS in 206-17	Maanav Doshi
15	SPEKTACULAR 2017	Certificate of participation	Organised by TSEC, Mumbai	Maanav Doshi
16	CODE UNCODE held at DJS on 27 March 2017. (Intercollege competition)	Won 2nd prize	27 March 2017 held at DJS, Mumbai	Samarth Gupta
Year 2015-16				
1	Aerial Vehicle Competition **(International Level)**	Cleared First level of the competition	September, 2016	Team Mavericks Warren Fernandes – Captain
2	SAE Design Aero East, Dallas, Texas. **(International Level)**	Secured globally 6th position and first in India	March 2016	Team Vaayushatra Arnav Prasad Nigel Koli Jason Pereira
3	Baja SAE INDIA 2016 (**National event**)	51st position out of 400 teams and 1st in Mumbai	February 2016	Team Abhada Brijesh Thapa
4	SPARX, Table Tennis competition at Xavier Institute of Technology, Mahim **(Inter college Sports festival)**	1st place	2016	Khulge Sushant
5	ZODIAC 2015 , Debate competition at Rajiv Gandhi Institute of Technology **(Inter College)**	Best Speaker	2015-16	Tushar Sadhu
6	ZODIAC 2015 , Debate competition at Rajiv Gandhi Institute of Technology **(Inter College)**	1st Position	2015-16	Tushar Sadhu

7	TECHNOMANIA'16 A national level paper presentation , project competition and Quiz competition **(National Level)**	1st Place	11th March 2016	Denise Pereira, Warren Fernandez
8	TECHNOMANIA'16 A national level paper presentation , project competition and Quiz competition **(National Level)**	2nd Place	11th March 2016	Shyam Padia, Alex Chirayath, Alfred Gonsalves
9	MIT-DT 2016 Organized by The Official Literary, Debating and Quizzing Club of MIT.	NOVICE WINNERS Position	2016	Dhruva Gaidhani
10	Mumbai – Behind the Scenes" during Crescendo -15 **(Inter college)**	Secured 2nd prize	28 August 2015	Alex Chirayath
11	CODE HUNT – during Crescendo -15 **(Inter college)**	1st Place	28 August , 2015	Alex Chirayath, Akhilesh Gupta
		Year 2014-15		
1	KUMBHATHON 2015 **(International Event)**	Participated	24th to 30th Jan 2015	Tejas Khot
2	MIT Media Lab – 5th Design and innovation Workshop 2015(**National Event)**	Participated	2015	Tejas Khot
3	ACM XRDS-Magazine **(International Event)**	Student editor	April 2015	Tejas Khot
4	Techno Mania 2015 **(National Level)**	First Place	20th March 2015	Blessy Antony
5	Morgan Stanley Women's Coding Competition **(International Event)**	Top 36	2015	Blessy Antony
6	Morgan Stanley Women's Coding Competition	Top 27	2015	Aishwarya Khokle

	(International Event)			
7	Morgan Stanley Women's Coding Competition **(International Event)**	Top 16	2015	Fargose Joan
8	Morgan Stanley Women's Coding Competition **(International Event)**	Top 42	2015	Priyadarshini Ashokan
9	Abhiyantriki'15 Organized by K.J.Somaiya College of Engineering, Vidyavihar.	First Place	2015	Blessy Antony
10	TRANSMISSION 2016 **(Inter college fest)**	Second place	5th Feb, 2016	Blessy Antony
11	International Series of KARTING – ISK 2015 (**International event**)	Received best manufacturing Award. 7th position in overall ranking	2015 , Bangalore	Team Abadha Sahil from T.E Comp was the head of the Braking Department in Team ABADHA.
12	Programming Contest **(National event)**	Placed second in third national programming contest 2015	21 Feb 2015	Hardik Agrawal
13	SAE Aero Design EAST - 2015 LAKELAND, FLORIDA **(International Event)**	Secured first place in Technical presentation, 6th position in overall Ranking	2015	Team Vayushstra
14	ROBOCON **(National Event)**	Participated in ROBOCON national level competition held at Pune,	2015	Team captain - Apurva Dandekar from B.E. computer
15	Debate Competition Government Law College , Mumbai **(State Level)**	Finalist	20-21 Sept 14	Ayushi Gupta, Sadhu Tushar
16	Debate Competition HR College of commerce and Economics **(State Level)**	Participated	16th December 2014	Sadhu Tushar

List of students technical paper publication:

2016-17

- Samartha Shetty, Badal Thosani, Lenherd Olivera, Supriya Kamoji. "Controversial analysis – Sentimental Analysis of Twitter Data," in the International Journal of Advance Research in Computer Science and software Engineering, Volume 7, Issue 4, April 2017, ISSN: 2277 128X, APRIL 2017

2015-16

- Mrudula Deore, Mayuri Kambli , Chinmayi Kulkarni, Sunil Chaudhari; "Modern Web Apps using Full Stack Development and Containerization," in the International Journal of Advanced Research in Computer and Communication Engineering Vol. 5, Issue 5, May 2016, ISSN (Online) 2278-1021 ISSN (Print) 2319 5940, May 2016
- Purva Sakharkar, Shailesh Fasale, Pawan Soni3, Ashwini Pansare; "GIS Based Tourist Management System." In the International Journal of Advanced Research in Computer and Communication Engineering,Vol. 5, Issue 5, May 2016, ISSN (Online) 2278-1021 ISSN (Print) 2319 5940, February 2016
- Karan Diware, Aakash Borhade, Swati Ringe; "A Holistic Study of Top Data Mining Algorithms," in the nternational Journal of Advanced Research in Computer Science and Software Engineering, Volume 6, Issue 2, February 2016 ISSN: 2277 128X
- Diware Karan, Vikram Rajpurohit, Kale Nikit, Swati Ringe; "Data Mining and Text Analytics of Twitter Data," in the International Journal of Advanced Research in Computer Science and Software Engineering, Volume 6, Issue 2, February 2016 ISSN: 2277 128X, February 2016
- Blessy Antony, Chaitali Pawar, Ayushi gupta, Swati Ringe, "AAROGYA: Intelligent Multi agent Pediatric System," in the International Journal of Scientific & Engineering Research, Volume 7, Issue 2, February-2016 ISSN 2229-5518, February 2016
- Alex Chirayath, Shyam Padia, Alfred Gonsalves, Monali Shetty); "Cryptography Key Exchange Using Dual Tone Multi Frequency Generator," in the International Journal of Innovative Research in Computer and Communication Engineering Vol. 3, Issue 11, November 2015,ISSN(Online): 2320-9801 ISSN (Print): 2320-9798, November 2015
- Alex Chirayath , Ruben Monteiro, Mahendra Mehra); "Mobile computing on Android using Cloud Infrastructure," IJCSMC - International Journal of Computer Science and Mobile Computing, Vol.4 Issue.11, November- 2015, pg. 77-83, ISSN 2320–088X, November 2015
- Alfred Gonsalves, Chinmayi Kulkarni, KetanKokane, Pratik Mali, MahendraMehra; "A Tool for Preventing the Metasploit Attack on the Android OS," in the International Journal of Computer Science & Communication Networks,Vol 5(5),325-328 325 ISSN:2249-5789, 2015
- Alex Chirayath, Alfred Gonsalves, Chinmayi Kulkarni, Prof. Mahendra Mehra; "Battery Optimization of Android OS, " in the International Journal of Computer Science and Information Technologies, Vol. 6 (5) , 2015, 4361-4363 ISSN: 0975-9646, 2015
- Shyam Padia, Sushant Khulge, Akhilesh Gupta, Parth Khadilikar; "Query Optimization Strategies in DistributedDatabases," in the International Journal of Computer Science and Information Technologies, Vol. 6 (5) , 2015, 4228-4234, ISSN:0975-9646, 2015

2014-15

- Aswathi Nambiar, Karishma Khot, Ravi Bajpai, Supriya Kamoji; "Dynamic Vehicle Traffic Management System," in the IJRET: International Journal of Research in Engineering and Technology eISSN: 2319-1163 | pISSN: 2321-7308. Volume: 04 Issue: 04 | Apr-2015
- Priyali Patil, Akshita Gandotra, Shivam Mishra, Monali Shetty; "An Efficient Mobile Voting System Scheme Based on Elliptic Curve Cryptography," in the International

Journal of Scientific & Engineering Research, Volume 6, Issue 4, April-2015 1736 ISSN 2229-5518, April 2015

- Anuj Poddar, Rishabh Kedia, Sahil Patel, Swati Ringe; "HTML 5 based virtual white board for real time interaction," in the International Conference on Communication, Control and Computing, 01-04-2015 , Procedia Computer Science 49 (2015) 170 – 177, doi:10.1016/j.procs.2015.04.241, April 2015
- Mandeep Rana, Pooja Candorkar; "The Influence of Game –Theoretic Information on Machine Learning," in the International Journal of Engineering and Technical Research (IJETR) ISSN: 2321-0869, Volume-3, Issue-4, April 2015,2321-0869, Volume-3, Issue-4, April 2015.esearch (IJETR), April 2015
- Mandeep Rana, Pooja Candorkar, Alisheeba, Kazi Nikahat; "Breast Cancer Diagnosis and Recurrence Prediction Using Machine learning Techniques" in the International Journal of Research in Engineering and Technology,e-ISSN:2319-1163,p-ISSN:2321-7308,Volume 4, Issue 4,April 2015
- Ashish B. Nair, Ishita M. Raut, Sangeeta Joseph, Dipali Koshti; C"ontent Retrieval and Protection of Smart Phone through Remote Access" in the International Journal of Engineering and Technical Research, , ISSN: 2321-0869, Volume-3, Issue-4, April 2015
- Aakash Tiwari, Ashwini Pandit, Pratyush Mohapatra, Merly Thomas; "Improving the prediction of players in IPL analytical system using Support Vector Machines (SVM) and Kernel functions" in the International Journal of Engineering and Technical Research (IJETR) ISSN: 2321-0869, Volume-3, Issue-3, March 2015.
- Dylan Andrades, Hardik Agrawal, Swati Ringe; "Various Approaches to Achieve Data Compression" in the International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181 IJERTV4IS030585 www.ijert.org (This work is licensed under a Creative Commons Attribution 4.0 International License.) Vol. 4 Issue 03, March-2015
- Hardik Agrawal, Dylan Andrades, Swati Ringe; "Approaches to Optimize Bit Compression Algorithm," in the International Journal of Engineering Research & Technology (IJERT) Vol. 4 Issue 03, March-2015, ISSN: 2278-0181, March 2015

CRITERION 5	Faculty Information and Contributions	200

5. Faculty Information and Contributions (200) (Institute Total Marks 143.74)

Academic Year: 2016-17

Name of the Faculty Member	Qualification			Designation	Date of Joining	Distribution of Teaching Load (%)				Academic Research			Specialization
	Degree (Starting from highest degree)	University	Year of Graduation			1st Year	UG		PG	Faculty Receiving Ph.D. during the Assessment Year	Ph.D. Guidance	Research Paper Publications	
							In Program	Other Program					
Dr. Sunil Krishnaji Surve	• Ph.D. (Electronics) • M.E. (Electronics Engineering) • A.M.I.E. (Communication Engg) • B.Sc. (Physic	Mumbai Mumbai Institution of Engineers Mumbai	2006 – 2012 1997 – 1999 1987 – 1991 1983	Professor	01/12/1987		100					-	• Software Engineering • Machine learning • Robotics • Computer Architecture

	s)		-87										
Mr. Brijmohan Satyanarayan Daga	• Ph.D. (Pursuing) • M.E. (Computer) • B.E. (Computer)	Pune University Allahabad University Amravati University-	1998 1990	Associate Professor	18/08/2003		100					-	• Computational Science • Graphics and Visual Computing • System Security • Information Management
Mrs. Merly Thomas Puthiyadom	• M.E. (Computer) • B.E (Computer)	Mumbai Calicut	2003 1991	Associate Professor	21/08/1996		100					-	• Distributed Computing • Data Structures • Computer Networks • Software Engineering
Ms. Roshni Suresh Padate	• M.E. (Computer) • B.E. (Computer)	Mumbai Amravati	2010 2000	Assistant Professor	05/01/2001		100					-	• Computer graphics • Image Processing • Multimedia system and design • Data structure
Mrs. Kalpana Prasan	• M.E. (Computer)	Mumbai Mum	2010 2001	Assistant Professor	01/08/2003	5.88	94.11					-	• Programming Fundamentals • Data

na Deorukhkar	• B.E. (Computer) • Diploma (Computer Science)	bai Autonomous	1998										Structures and Algorithms • Theoretical Computer Science and Compiler Construction
Mrs. Swati Mukul Ringe	• M.E. (Computer) • B.E.(Computer)	Mumbai Marathwada	2010 1992	Assistant Professor	11/03/2004		100					-	• Internet Technologies • Middleware And Enterprise • Object Oriented Programming Methodology • Computer Network
Mrs. Ashwini Amit Pansare	• M.E. (Computer) • B.E.IT	Mumbai Mumbai	2012 2003	Assistant Professor	05/07/2005		100					1	• Programming Fundamentals • Architecture and Organization
Mrs. Dipali Yogesh Koshti	• M.E. (Computer) • B.E. (Computer)	Mumbai M.S. Baroda	2011 2000	Assistant Professor	05/07/2005	22.22	77.78					-	• Image Processing • Mobile Communication
Mrs.	• M.E.	Mum	2012	Assistant	05/07/2	23.52	76.					1	• Computer

Supriya Shivanath Kamoji	(Computer) • B.E(E&C)	bai University Karnataka University	2000	Professor	005		48						Organization and architecture • Image Processing
Mrs. Monali Nitesh Shetty	• M.Tech (Computer) • B.E. (Computer)	NMIMS Pune	2012 2002	Assistant Professor	20/02/2006	5.55	94.45					1	• System Security • Networking • Mobile Communication
Mr. Sunil Dilip Chaudhari	• M.Tech. (IT) • B.E. (Computer)	IIIT – Allahabad Mumbai	2010 2005	Assistant Professor	20/07/2009		100					-	• Software development fundamentals • Web Development
Mr. Mahendra Meharа	• M.E. (Computer) • B.E. (IT)	Mumbai Mumbai	2013 2009	Assistant Professor	01/06/2014		100					-	• Information and network security • Linux system administration • Cloud computing • Computer networking
Mrs. Parshvi Shah	M.E. - (Electronics)	Mumbai Univer	2014	Assistant Professor	18-09-2006	25.8	74.2					-	• Microprocessor and Microcontroll

		sity-											er, • Circuit theory, • Signal and system
Mrs. Shard dha D	M.E computer	Mumb ai Univer sity	2015	Teaching Assistant	1-2-2017		10 0						• Database management
Mr. Jayant Modi	• M.E. (Electr onics) • B.E. (Electr onics)	Mum bai Mum bai	2007 2005	Assistant Professor	01/04/2 014		12. 5					-	• Communicatio n Engineering • Electronic System Design
Mr. Lalit Prasad	• M. Phil (Math emati cs) • M.Sc. (Math emati cs) • NET (Math emati cs)	Mum bai Mum bai CSIR-UGC	2006 2001 2001	Assistant Professor	01/07/2 004		24. 13						• Advance Real Analysis • Advance Complex Analysis
Mr. Pradee p Virendr a Singh	M.Sc. (Mathem atics) –	Mumb ai	2002	Assistant Professor	17-07-2006		3.4 4						• Mathematics
Ms. Sushm a	M.E,(Ele ctronics)	Mumb ai Univer	2013	Assistant Professor	05/07/2 005		25						• Digital Processing

Fattuji Nagdeote		sity											
Mrs. Sundari Prabhavathy	• M.Phil (Mathematics) • B.Ed.	Annamali Annamali	1986 1990	Associate Professor	03/09/1991		12.5						• Stochastic Processes (Epidemic Models)
Ms. Archana Karandikar	• MSC (Mathemtics)	Mumbi -	1998	Assistant Professor	01/08/2003		3.44						• Mathematics
Dr. Hemant Madhav Khanolkar	PhD	Mumbai University-	2001	Assistant Professor	21/12/2000		9.52						• Chemistry
Dr. Joseph Thankappan Rodrigues	Ph.D (English)	Mumbai University-	2005	Assistant Professor	02-05-2016		25						• English

Academic Year: 2015-16

Name of the Faculty Member	Qualification			Designation	Date of Joining	Distribution of Teaching Load (%)				Academic Research			Specialization
	Degree (Starting from highest degree)	University	Year of Graduation			1st Year	UG		PG	Faculty Receiving Ph.D. during the Assessment Year	Ph.D. Guidance	Research Paper Publications	
							In Program	Other Program					
Dr. Sunil Krishnaji Surve	• Ph.D. (Electronics) • M.E. (Electronics Engineering) • A.M.I.E. (Communication Engg) • B.Sc. (Physics)	Mumbai Mumbai Institution of Engineers Mumbai	2006 – 2012 1997 – 1999 1987 – 1991 1983-87	Professor	01/12/1987		50		50			2	• Software Engineering • Machine learning • Robotics • Computer Architecture
Mr. Brijmo	• Ph.D. (Pursui	Pune Univer		Associate Professor	18/08/2003		83.33		16.67			-	• Computational

han Satyanarayan Daga	ng) • M.E. (Computer) • B.E. (Computer)	sity Allahabad University Amravati University-	1998 1990										Science • Graphics and Visual Computing • System Security • Information Management
Mrs. Merly Thomas Puthiyadom	• M.E. (Computer) • B.E (Computer)	Mumbai Calicut	2003 1991	Associate Professor	21/08/1996		100					-	• Distributed Computing • Data Structures • Computer Networks • Software Engineering
Ms. Roshni Suresh Padate	• M.E. (Computer) • B.E. (Computer)	Mumbai Amravati	2010 2000	Assistant Professor	05/01/2001		87.09		12.9			-	• Computer graphics • Image Processing • Multimedia system and design • Data structure
Mrs. Kalpana	• M.E. (Computer	Mumbai	2010	Assistant Professor	01/08/2003		100					-	• Programming Fundamen

Prasanna Deorukhkar	) • B.E. (Computer) • Diploma (Computer Science)	Mumbai Autonomous	2001 1998										tals • Data Structures and Algorithms • Theoretical Computer Science and Compiler Construction
Mrs. Swati Mukul Ringe	• M.E. (Computer) • B.E.(Computer)	Mumbai Marathwada	2010 1992	Assistant Professor	11/03/2004		100					3	• Internet Technologies • Middleware And Enterprise • Object Oriented Programming Methodology • Computer Network
Mrs. Ashwini Amit Pansare	• M.E. (Computer) • B.E.IT	Mumbai Mumbai	2012 2003	Assistant Professor	05/07/2005	40	60					1	• Programming Fundamentals • Architecture and

													Organization
Mrs. Dipali Yogesh Koshti	• M.E. (Computer) • B.E. (Computer)	Mumbai M.S. Baroda	2011 2000	Assistant Professor	05/07/2005		94		6			-	• Image Processing • Mobile Communication
Mrs. Supriya Shivanath Kamoji	• M.E. (Computer) • B.E(E&C)	Mumbai University Karnataka University	2012 2000	Assistant Professor	05/07/2005	12.9	74.2	12.09					• Computer Organization and architecture • Image Processing
Mrs. Monali Nitesh Shetty	• M.Tech (Computer) • B.E. (Computer)	NMIMS Pune	2012 2002	Assistant Professor	20/02/2006		100					1	• System Security • Networking • Mobile Communication
Mr. Sunil Dilip Chaudhari	• M.Tech. (IT) • B.E. (Computer)	IIIT – Allahabad Mumbai	2010 2005	Assistant Professor	20/07/2009		94.11	5.88				-	• Software development fundamentals • Web Development
Miss Nikah	• M.E. (Com	Mumbai	2014	Assistant Professor	01/07/2013	12.5	87.5					-	• Artificial Intelligenc

at Shuhab Kazi	puter) • B.E. (Computer)	Mumbai	2009										e
Mr. Mahendra Mehara	• M.E. (Computer) • B.E. (IT)	Mumbai Mumbai	2013 2009	Assistant Professor	01/06/2014		100					4	• Information and network security • Linux system administration • Cloud computing • Computer networking
Mr. Jayant Modi	• M.E. (Electronics) • B.E. (Electronics)	Mumbai Mumbai	2007 2005	Assistant Professor	01/04/2014		33.33					-	• Communication Engineering • Electronic System Design
Mrs. Kranti Wagale	• M.E. (Embedded & Real Time System) • B.E. (Electrical)	Anna Goa	2012 2000	Assistant Professor	19/07/2004		33.33					-	• Embedded System and RTOS • Electronic System Design
Mrs.	• M.E.	Mum	2014	Assistant	09/07/2		6					-	• Microelect

Sangeeta Parshionikar	(Electronics) • B.E. (Electronics & Power Engg)	bai Nagpur	1999	Professor	007								ronics and VLSI
Mr. Lalit Prasad	• M. Phil (Mathematics) • M.Sc. (Mathematics) • NET (Mathematics)	Mumbai Mumbai CSIR-UGC	2006 2001 2001	Assistant Professor	01/07/2004		28						• Advance Real Analysis Advance Complex Analysis
Mrs. Deblina Saha	• M.A. (English Literature) • B.A (Honours)	Mumbai Calcutta	2007 2005	Assistant Professor	02/01/2008		50						• Communication skill
Mr. V. S.	• Ph. D. (pursu	VTU		Associate Professor	01/08/1995		33.33					3	• Thermal Engineerin

Jorapur	ing) • M.E. (Prod. Tech.) • B.E. (Mechanical)	Karnataka Karnataka	2005 1986										g • Operational Research
Mrs. Sundari Prabhavathy	• M.Phil (Mathematics) • B.Ed.	Annamali Annamali	1986 1990	Associate Professor	03/09/1991		13						• Stochastic Processes (Epidemic Models)
Ms. Archana Karandikar	• MSC (Mathemtics)	Mumbi -	1998	Assistant Professor	01/08/2003		7						• Mathematics
Dr. Hemant Madhav Khanolkar	PhD	Mumbai University-	2001	Assistant Professor	21/12/2000		10						• Chemistry

Academic Year: 2014-15

Name of the Faculty Member	Qualification					Distribution of Teaching Load (%)				Academic Research			Specialization
	Degree (Starting from highest degree)	University	Year of Graduation	Current Designation	Date of joining	1st Year	UG		PG	Faculty Receiving Ph.D. during the Assessment Year	Ph.D. Guidance	Research Paper Publications	
							In Program	Other Program					
Dr. Sunil Krishnaji Surve	• Ph.D. (Electronics) • M.E. (Electronics Engineering) • A.M.I.E. (Communication Engg) • B.Sc. (Physics)	Mumbai Mumbai Institution of Engineers Mumbai	2006 – 2012 1997 – 1999 1987 – 1991 1983-87	Professor	01/12/1987		50		50		-	3	• Software Engineering • Machine learning • Robotics • Computer Architecture
Mr. Brijmohan Satyan	• Ph.D. (Pursuing) • M.E.	Pune University Allahab	1998	Associate Professo	18/08/2003		83.33		16.67			-	• Computational Science • Graphics and Visual

arayan Daga	(Computer) • B.E. (Computer)	ad University Amravati University-	1990	r									Computing • System Security • Information Management
Mrs. Merly Thomas Puthiyadom	• M.E. (Computer) • B.E (Computer)	Mumbai Calicut	2003 1991	Associate Professor	21/08/1996		100					1	• Distributed Computing • Data Structures • Computer Networks • Software Engineering
Ms. Roshni Suresh Padate	• M.E. (Computer) • B.E. (Computer)	Mumbai Amravati	2010 2000	Assistant Professor	05/01/2001		75		25			4	• Computer graphics • Image Processing • Multimedia system and design • Data structure
Mrs. Kalpana Prasanna Deorukhkar	• M.E. (Computer) • B.E. (Computer) • Diploma (Computer	Mumbai Mumbai Autonomous	2010 2001 1998	Assistant Professor	01/08/2003	13.34	53.33	33.33				-	• Programming Fundamentals • Data Structures and Algorithms • Theoretical Computer Science and Compiler Construction

	Science)												
Mrs. Swati Mukul Ringe	• M.E. (Computer) • B.E.(Computer)	Mumbai Marathwada	2010 1992	Assistant Professor	11/03/2004		100					3	• Internet Technologies • Middleware And Enterprise • Object Oriented Programming Methodology • Computer Network
Mrs. Ashwini Amit Pansare	• M.E. (Computer) • B.E.IT	Mumbai Mumbai	2012 2003	Assistant Professor	05/07/2005		100						• Programming Fundamentals • Architecture and Organization
Mrs. Dipali Yogesh Koshti	• M.E. (Computer) • B.E. (Computer)	Mumbai M.S. Baroda	2011 2000	Assistant Professor	05/07/2005	13	81		6			1	• Image Processing • Mobile Communication
Mrs. Supriya Shivanath Kamoji	• M.E. (Computer) • B.E(E&C)	Mumbai University Karnataka University	2012 2000	Assistant Professor	05/07/2005		100					1	• Computer Organization and architecture • Image Processing
Mrs. Monal	• M.Tech	NMIMS	2012	Assistant Professo	20/02/2006		87.5	12.5				2	• System Security • Networking

i Nitesh Shetty	(Computer) • B.E. (Computer)	Pune	2002	r									• Mobile Communication
Mr. Sunil Dilip Chaudhari	• M.Tech. (IT) • B.E. (Computer)	IIIT – Allahabad Mumbai	2010 2005	Assistant Professor	20/07/2009		100					-	• Software development fundamentals • Web Development
Miss Nikahat Shuhab Kazi	• M.E. (Computer) • B.E. (Computer)	Mumbai Mumbai	2014 2009	Lecturer	01/07/2013		100					1	• Artificial Intelligence
Mr. Mahendra Mehara	• M.E. (Computer) • B.E. (IT)	Mumbai Mumbai	2013 2009	Assistant Professor	01/06/2014		100					-	• Information and network security • Linux system administration • Cloud computing • Computer networking
Mr. Jayant Modi	• M.E. (Electronics) • B.E. (Electronics)	Mumbai Mumbai	2007 2005	Assistant Professor	01/04/2014		37.5	62.5				-	• Communication Engineering • Electronic System Design
Mrs.	• M.E.	Anna	2012	Assistant	19/07/2		33	40	27			-	• Embedded

Kranti Wagale	(Embedded & Real Time System) • B.E. (Electrical)	Goa	2000	Professor	004								System and RTOS • Electronic System Design
Mrs. Sangeeta Parshionikar	• M.E. (Electronics) • B.E. (Electronics & Power Engg)	Mumbai Nagpur	2014 1999	Assistant Professor	09/07/2007	41.23	0.058	58.72				-	• Microelectronics and VLSI
Mr. Lalit Prasad	• M. Phil (Mathematics) • M.Sc. (Mathematics) • NET (Mathematics)	Mumbai Mumbai CSIR-UGC	2006 2001 2001	Assistant Professor	01/07/2004	58.98	28.12	12.90					• Advance Real Analysis Advance Complex Analysis
Mrs. Deblin	• M.A. (Englis	Mumbai	2007	Assistant Professo	02/01/2008	44.44	27.78	27.78					• Communication skill

a Saha	h Literature) • B.A (Honours)	Calcutta	2005	r									
Mr. V. S. Joraپur	• Ph. D. (pursuing) • M.E. (Prod. Tech.) • B.E. (Mechanical)	VTU Karnataka Karnataka	2005 1986	Associate Professor	01/08/1995	48	14.81	37.04				3	• Thermal Engineering • Operational Research
Mrs. Sundari Prabhavathy	• M.Phil (Mathematics) • B.Ed.	Annamali Annamali	1986 1990	Associate Professor	03/09/1991		20	80					• Stochastic Processes (Epidemic Models)
Ms. Archana Karandikar	• MSC (Mathemtics)	Mumbi -	1998	Assistant Professor	01/08/2003		0.032						• Mathematics

5.1 Student-Faculty Ratio (SFR) (20)(Institute Marks 14)

S:F ratio = N/F;

N = No. of students = 3x where x is approved intake plus 20% lateral entry intake plus separate division, if any

F = Number of faculty = (a + b – c) for every assessment year

a: Total number of full time equivalent Faculty serving fully to 2nd, 3rd and 4th year of this program

b: Total number of full-time equivalent regular faculty (considering fractional load) serving this program from other program(s)

c: Total number of full-time equivalent regular faculty (considering fractional load) of this program serving other program(s)

Year	X	N	F	SFR = N/F
CAY	72	216	13.49	16.00
CAYm1	72	216	11.75	18.37
CAYm2	72	216	12.81	16.86
Average SFR for three assessment years				17.07

5.2 Faculty Cadre Proportion (25))(Institute Marks 22.5)

F1: Number of Professors required = 1/9*Number of Faculty required to comply with 15:1 Student-Faculty ration based on number of students (N) as per 5.1

F2: Number of Associate Professors required = 2/9*Number of Faculty required to comply with 15:1 Student-Faculty ration based on number of students (N) as per 5.

F3: Number of Professors required = 6/9*Number of Faculty required to comply with 15:1 Student-Faculty ration based on number of students (N) as per 5.

Year	**Professors**		**Associate Professors**		**Assistant Professors**	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY	1.6	1	3.2	2	9.6	10
CAYm1	1.6	1	3.2	2	9.6	10
CAYm2	1.6	1	3.2	2	9.6	9
Average Numbers	RF1 = 1.6	AF1 = 1	RF2 =3.2	AF2 =2	RF3 =10	AF3 =9.67

$$\left[\left[\frac{AF1}{RF1}\right] + \left[\frac{AF2}{RF2} * 0.6\right] + \left[\frac{AF3}{RF3} * 0.4\right]\right] * 12.5 = 17.35$$

5.3 Faculty Qualification (25) (Institute Marks 14.24)

FQ = 2.5*[(10x+6y)/F]

Where x is number of regular faculty with Ph.D., y is number of regular faculty with M. Tech., F is number of regular faculty required to comply 1:15 Faculty-Student ratio.

	X	y	F	FQ = 2.5*[(10x+6y)/F]
CAY	1	12	14.4	14.24
CAYm1	1	12	14.4	14.24
CATm2	1	12	14.4	14.24
Average Assessment				14.24

5.4 Faculty Retention (25) (Institute Marks 25)

No. of regular faculty in CAYm2 = 11 CAYm1 = 12 CAY = 12

Item	Marks
>= 90% of required Faculty members retained during the period of assessment keeping CAYm2 as base year	**25**
>= 75% of required Faculty members retained during the period of assessment keeping CAYm2 as base year	20
>= 60% of required Faculty members retained during the period of assessment keeping CAYm2 as base year	15
>= 50% of required Faculty members retained during the period of assessment keeping CAYm2 as base year	10
< 50% of required Faculty members retained during the period of assessment keeping CAYm2 as base year	0

5.5 Innovations by the Faculty in Teaching and Learning (20) (Institute Marks 15)

- Multimedia learning - slides, OHP, Videos, simulation
- Class discussion - The interaction through questions and answers, exchange of thoughts.
- Short presentation
- Quiz based on subjects
- Used Bloom's taxonomy of education i.e. Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating.
- Inviting a guest speaker
- By assigning open-ended questions and answers.
- By creating the Mind Map for relevant concepts.

Innovation as movement for assessment of faculty :

- Provides feedback
- Enhances faculty & student engagement
- Reinforces motivation for teaching improvement

5.6 Faculty as participants in Faculty development / training activities/STTPs (15) (Institute Marks 15)

Name of the Faculty	Max. 5 per Faculty		
	CAY	CAYm1	CAYm2
Prof. Sunil Surve	3	-	-
Prof. Merly Thomos	-	-	3
Prof. Daga	-	5	3
Prof. Roshni Suresh Padate	5	5	5
Prof. Swati Mukul Ringe	5	5	3
Prof. Dipali Yogesh Koshti	3	-	5
Prof. Ashwini Pansare	3	3	
Prof. Supriya Shivanath Kamoji	5	3	5
Prof. Kalpana Prasanna Deorukhkar	5	3	5
Prof. Monali Shetty	5	3	5
Prof. Sunil Choudhari	3	-	5
Prof. Mahendra Mehra	5	5	5

Prof. Nikahat Kazi	-		3
RF = Number of Faculty required to comply with 15:1 Student Faculty Ratio as per 5.1	14.40	14.40	14.40
Assessment [3*(Sum / 0.5RF)]	17.5	13.33	19.58
Average Assessment over three years	16.80		

5.7 Research and Development (30) (Institute total Marks 13)

5.7.1 Academic Research (10) (Institute Marks 8)

Minor Research Project:

2016-17:

- "Smart children safety system in school bus transport using RFID & Android." , Supriya K. , Year 2016-17
- "Smart greenhouse using IOT", Dipali K. , Year 2016-17
- " An IOT based Students Attendance management systems for automated report generation and analysis using data mining", Year 2016-17

Research Papers Published by Faculty Members:

YEAR-2016-17

- Ashwini Pansare "Mood Detection based on Facial Expressions", , International Journal of Engineering Trends and Technology (IJETT) – Volume 48 Number 4 June 2017, ISSN: 2231-5381
- Samarth Jaykar Shetty, Badal Rakesh Thosani, Lenherd Deon Olivera, Supriya Kamoji, "Controversial analysis :- Sentimental Analysis of Twitter data", IJARCSSE, Volume 7, Issue 4, April 2017 , ISSN: 2277 128X.
- Monali Shetty, "Mood Detection based on Facial Expressions", International Journal of Engineering Trends and Technology (IJETT) – Volume 48 Number 4 June 2017, ISSN: 2231-5381

YEAR – 2015-16

- Mangalwedekar Sindhuja, Surve Sunil K, Mangalvedekar H. A , "Erroe Propagation in Linear and Non-Linear Systems for False Data Injection Attack in the proceedings of Advance Computing Conference (IACC) ,2015 IEEE International , vol no. pp855,860, 12-13 June 20
- Mangalwedekar Sindhuja, Surve Sunil K, Mangalvedekar H. A ,"False Data Injection Attacks and Detection Scenarios in the Power Systems", in the proceedings of 2015 Annual IEEE India Conference (INDICON)
- Ayushi Gupta, Chaitali Pawar, Blessy Antony, Swati Ringe, "Aarogya-An intelligent Multi-Agent Paediatric System", IJSER, ISSN- 2229-5518, volume 7, Issue 2, February 2016.
- Karan Diware, Vikram Rajpurohit, Nikit Kale, Swati Ringe, "Data Mining and Text Analytics of Twitter Data", IJARCSSE, ISSN-2277128X, volume 6, Issue2, February 2016.
- Karan Diware, Aakash Borade, Swati Ringe, "A Holistic study of Top Data Mining Algorithms", IJARCSSE, ISSN-2277128X, volume 6, Issue2, February 2016.
- Mrs. Ashwini Pansare,Purva Sakharkar,Shailesh fasale and Pawan Soni "GIS Based Tourist Management System", International Journal of Advanced Research in Computer and Communication Engineering Vol. 5, Issue 5, May 2016
- Monali Shetty, Alex Chirayath1, Shyam Padia2, Alfred Gonsalves, "Cryptographic Key Exchange using Dual Tone Multi Frequency Generator", International Journal of Innovative Research in Computer and Communication Engineering (An ISO 3297: 2007

Certified Organization) Vol. 3, Issue 11, November 2015

- Mahendra Mehra, Alex Chirayath, Alfred Gonsalves, Chinmayi Kulkarni "Battery Optimization Of Android OS", (IJCSIT) International Journal of computer science and Information Technologies, VOL. 6 (5) , 2015, 4361-4363, ISSN:0975-9646
- Mahendra Mehra, Alex Chirayathi, Ruben Monteiro, "Mobile Computing On Android Using Cloud Infrastructure", International Journal of Computer Science and Mobile Computing, Vol.4 Issue.11, November- 2015, pg. 77-83 ISSN:2320-088X
- Mahendra Mehra, Alfred Gonsalves, Chinmayi Kulkarni, Ketankokane, Pratik Mali, "A Tool for Preventing the Metasploit Attack on the Android OS", International Journal Of Computer Science And Communication Networks (IJCSCN) Vol 5 Issue 5 ISSN 2249-5789
- Mahendra Mehra, Pranit Shinde, Saideep Shetty, "Survey of keystroke dynamics as a biometric for static authentication", International Journal ofComputer Science and Information Security, Vol. 14, No. 04, January 2016, ISSN 19475500

YEAR-2014-15

- Mangalwedekar, Sindhuja; Surve, Sunil K., Measurement Sets in Power System State Estimator in Presence of False Data Injection Attack in the Proceedings of *Advance Computing Conference (IACC), 2015 IEEE International* , vol., no., pp.855,860, 12-13 June 2015
- Kadam, R., Shajahan, S. , Malegam, K. Wagle, K. Surve,S "Localization and tracking of indoor mobile robot with beacons and dead reckoning sensors" in the 2014 IEEE Students' Conference on Electrical, Electronics and Computer Science (SCEECS)
- Jeenal Shah, Dr Sunil Surve, Dr Varsha Turkar, " Pancreatic Tumour Detection Using Image Processing " in the 2015 ICAC3.
- Aakash Tiwari, Ashwini Pandit, Pratyush Mohapatra, Prof. Merly Thomas, "Improving the prediction of players in IPL analytical system using Support Vector Machines (SVM) and Kernel functions", International Journal of Engineering and Technical Research (IJETR) ISSN: 2321-0869, Volume-3,March-2015
- Swati Ringe, Rishabh Kedia, Anuj Poddar, Sahil Patel, "HTML5 Based Virtual Whiteboard for Real Time Interaction" in the 2015 ICAC3
- Swati Ringe, Dylan A, Hardik Agrawal, "Various Approaches to achieve Data compression", IJERT , ISSN-2278-0181 vol. 4 Issue 3, March-2015
- Swati Ringe, Hardik Agrawal, Dylan Andrades, "Approaches to optimize Bit Compression Algorithm", International Journal of Engineering Research and Technology(IJERT), Vol.4,Issue 03,March 2015 [ISSN:2278-0181]
- Roshni P, Aamna Patel, "A survey on Image Retrieval system based on contents" , IJETT ISSN:2231-5381 vol 21 , March-2015
- Monali Shetty. "Analysis of Elliptic Curve Cryptography for Mobile Banking" published in International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181 Vol. 3 Issue 7, July – 2014.
- Monali Shetty. "An Efficient Mobile Voting System Scheme Based on Elliptic Curve Cryptography" published in International Journal of Scientific & Engineering Research, Volume 6, Issue 4, April-2015 1736 , ISSN 2229-5518

- Supriya Kamoji1, Aswathi Nambiar2, Karishma Khot3, Ravi Bajpai4, "Dynamic Vehicle Traffic Management System", IJRET: International Journal of Research in Engineering and Technology eISSN: 2319-1163 | pISSN: 2321-7308
- Mandeep Rana, Pooja Candorkar, Alisheeba, (Kazi Nikahat), "Breast Cancer Diagnosis and Recurrence Prediction Using Machine learning Techniques", IJRET – International Journal of Research in Engineering and Technology,e-ISSN:2319-1163,p-ISSN:2321-7308,Volume 4, Issue 4,April 2015
- Ashish B. Nair, Ishita M. Raut, Sangeeta Joseph, (Prof. Dipali Koshti), "Content Retrieval and Protection of Smart Phone through Remote Access", International Journal of Engineering and Technical Research, , ISSN: 2321-0869, Volume-3, Issue-4, April, 2015.

2) Citations, Book/Book chapters etc. (6)

- Srija Unnikrishnan, Sunil Surve and Deepak Bhoir. Proceedings of 2nd International International Conference on Advances in Computing, Communication and Control, 2011. ISBN: 97 Springer Heidelberg, 2011. ISBN: 8-3-642-18439-0 (Print) 978-3-642-18440-6
- Srija Unnikrishnan, Sunil Surve and Deepak Bhoir. Proceedings of 3rd International International Conference on Advances in Computing, Communication and Control, 2013 Springer Heidelberg, 2013. ISSN 1865-0929 e-ISSN 1865-0937, ISBN 978-3-642-36320-7 e-ISB
- Srija Unnikrishnan, Sunil Surve and Deepak Bhoir. Proceedings of 4th International International Conference on Advances in Computing, Communication and Control, Procedia Computer Science Volume 49, ELSEVIER, 2015, doi:10.1016/S1877-0509(15)00789-9, ISSN: 1877-0509
- Radha Shankamani, Swati Ringe, "Object Oriented Programming Methodology", ISBN 13 : 9789351191490, Publisher: Dreamtech Press
- Monali Shetty & Kalpana D. on "Data warehousing and Mining " for SEM –VIII COMPUTER Engineering , Nandu Publication Publication Year Jan- 2017

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- Janhavi B., Sunil Surve, Sapna Prabhu. "Comparison of Load Balancing Algorithms in a Grid"; in the Proceedings of International Conference on Data Storage and Data Engineering,Bangalore, 2010. (42citations)
- Ch. Venkatesh, Sunil Surve and N. M. Singh. Flatness based Formation Control of Nonholonomic Vehicles. In the Proceedings of 2nd International Conference on Advances in Computing, Communication and Control, ICAC311, 28-29 January, 2011. (4 citations)
- Sunil Surve, N. M. Singh, and B. K. Lande, "CPPA: A Fast Coverage Algorithm"; In the Proceedings of International IEEE Conference on Intelligence Systems and Multi-media Applications, ICCIMA'07, 13-15 December 2007. (6 citations)

- Monali Shetty, Prof. N.M.Shekokar," Data Mining Techniques for Real Time Intrusion Detection Systems", International Journal of Scientific & Engineering Research Volume 3, Issue 4, April-2012.(6 citations)
- Ashwini Pansare, Shalini Bhatia, "Handwritten signature verification using neural network", International Journal of Applied Information Systems , Year of Publication 2012 (25 citations)
- Ashwini Pansare, Shalini Bhatia ,"Offline signature verification using NN", nternational Journal of Scientific & Engineering Research, Volume 3, Issue 2, February-2012(9 citations)
- Saurabh V. Joshi, Ajinkya A. Bokil, Nikhil A. Jain, Dipali Koshti," Image Steganography : Combination of Spatial and Frequency Domain", International Journal of Computer Application(IJCA),November 20, 2012,Volume 53 - Number d.o.i-5.10.5120/8419(8 citations)
- Dr. H. B. Kekre, Archana B. Patankar and Dipali Koshti, "Performance Comparison of Simple Orthogonal Transforms and Wavelet Transforms for Image Steganography. International Journal of Computer Applications,44(6):21-28, April 2012. DOI 10.5120/6267(15 citations)
- Ms. Dipali Koshti and Ms. Supriya Kamoji, "Comparative study of Techniques used for Detection of Selfish Nodes in Mobile Adhoc Networks", International Journal of Soft Computing and Engineering (IJSCE) ISSN: 2231-2307, Volume-1, Issue-4, Sep 2011(31 citations)
- Dr. H. B. Kekre, Archana Athawale & Dipali Sadavarti, "Algorithm to Generate Wavelet Transform from an Orthogonal Transform", International Journal of Image Processing (IJIP) ,Vol. 4, Issue 4, pp : 444 - 455, October-2010, "(31 citations)
- Dr. H.B. Kekre, Archana Athawale and Dipali Sadavarti , " Algorithm to Generarte Kekre's Wavelet Transform from Kekre's Transform ", International Journal of Engineering Science and Technology (IJEST) Vol. 2 (4), June 2010, pp: 756-767.ISSN 097.(37 citations)
- Nikahat Kazi, Shalini Bhatia "Various Artificial Intelligence Techniques for Automated Melody Generation" in IJERT Volume 2, ISSUE 7, July 2013, ISSN 2278-0181 (1 citation)

Ph.D. Guided –
Guide: Dr. Sunil Surve
Number of students under guidance: 02

5.7.2 Sponsored Research (5) (Institute Marks 0)

2016-2076

Project Title	Duration	Funding Agency	Amount
Nil	Nil	Nil	0.00
Total Amount(X): 0.00			

2015-2016

Project Title	Duration	Funding Agency	Amount
Nil	Nil	Nil	0.00
Total Amount(Y): 0.00			

2014-2015

Project Title	Duration	Funding Agency	Amount
Nil	Nil	Nil	0.00
Total Amount(Z): 0.00			

Cumulative Amount(X + Y + Z) = 0.00

5.7.3 Development Activities (10) (Institute Marks 5)

Provide details

- Product development
  - "V2V Communication", Sunil K. Surve, Year 2016-17.
  - "Aarogya – Intelligent Multi-Agent Paediatric System", Swati Ringe, Year2015-16.
  - "A crowd sourced Disaster Management Platform for India", Swati Ringe, Year2014-15.
  - "Floor Sweeping Robot", Sunil k. Surve, Year 2014-15
- Research laboratories
- **Instructional materials**
  - Instructional materials are prepared by faculties using various reference books available in the college library and different online resources. It is made available on Moodle.
  - This platform is exclusively used by faculties and students for teaching and learning process. Faculties upload the presentations and notes of their subjects. Students can see these notes.
  - Faculties conduct quizzes based on the syllabus content.
  - Open access study material on Gyan server
  - Faculties keep study material on Gyan server. This material can be downloaded by students from the institute or students outside the institute.
- Working models/charts/monograms
  - In every lab appropriate charts are available

5.7.4 Consultancy (from Industry) (5) (Institute Marks 0)

2016-17

Project Title	Duration	Funding Agency	Amount
Nil	Nil	Nil	0.00

2015-16

Project Title	Duration	Funding Agency	Amount
Nil	Nil	Nil	0.00

2014-15

Project Title	Duration	Funding Agency	Amount
Nil	Nil	Nil	0.00

Cumulative Amount(X + Y + Z) = 0

5.8 Faculty Performance Appraisal and Development System (FPADS) (30) (Institute Marks 25)

Faculty performance is evaluated at the end of every academic year. The assessment is done based the effectiveness of teaching-learning process, research/ consultancy work carried out and contribution in the administration of department and institute during the year.

The following parameters are considered for evaluation of teaching, learning process.

1) Curriculum Coverage (Theory and practical's)
2) Development of Course Material
3) Students Attendance Register Record
4) Academic Results
5) Projects Guided
6) Mentoring and Student Counseling
7) Student Feedback
8) Faculty Development
9) Interaction with the Outside World
10) Courses/Seminars/Conference Organized in College

The procedure of faculty evaluation is as follows :

1) Each faculty member first does self-evaluation based on his/her performance during the year with respect to the above mentioned parameters.
2) Academic audit is conducted by an academic expert at the end of academic year.
3) Faculty member is interviewed by the panel consisting of principal and HODs.
4) Principal and HODs assess the performance of each faculty member.
5) The assessment process is transparent and faculty members are informed about the assessment results and the areas of improvements.
6) Accordingly faculty decides the corrective measures to improvise the performance and follows the same in the following years.

From year 2016-17, PBAS is implemented as per AICTE norms.

5.9 Visiting /Adjunct / Emeritus Faculty etc. (10) (Institute Marks 0)

Nil

CRITERION 6	Facilities and Technical Support	80

6. Facilities and Technical Support (80) (Institute Total Marks 73)

6.1 Adequate and well equipped laboratories and technical manpower (30) (Institute Marks: 30)

Sr. 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	COMPUTER NETWORK LAB	20	Adequate systems	Average of both sems 26,16 =21	Mr. Jiten Moghabhai Naik	Sr. Laboratory Assistant	B.Sc.- I.T
2	ARTIFICIIAL INTELLEGENCE LAB	20	Adequate systems	Average of both sems 16,14 =15	Mr. Shankar Laxman Jagli	Sr. Laboratory Assistant	Diploma in Computer Engg
3	DATABASE LAB	20	Adequate systems	22,18= 20	Mr. Shankar Laxman Jagli	Sr. Laboratory Assistant	Diploma in Computer Engg
4	COMPUTER ARCHITECTURE LAB	20	Adequate systems	16,16=16	Mr. Shankar Laxman Jagli	Sr. Laboratory Assistant	Diploma in Computer Engg
5	SOFTWARE ENGG. LAB	20	Adequate systems	0,8=4	Mr. Jiten Moghabhai Naik	Sr. Laboratory Assistant	B.Sc.
6	WEB TECH. LAB	20	Adequate systems	16,16=16	Mr. Jiten Moghabhai Naik	Sr. Laboratory Assistant	B.Sc.
7	SYSTEM PROGRAMMING LAB	20	Adequate systems	8,14=11	Mr. Ajay Laxman Koli	Mechanic-Computer Support	H.S.C., Adv. Dip. In Network Technology

8	DISTRIBUTED COMPUTING LAB	20	Adequate systems	16,18=17	Mr. Pankaj Lalbahadur Yadav	Mechanic-Computer Support	H.S.C., Adv. Dip. In Network Technology
9	Programming Lab	50	Adequate systems	0,0=0	Mr. Pankaj Lalbahadur Yadav	Mechanic-Computer Support	H.S.C., Adv. Dip. In Network Technology
10	Project Lab	20	Adequate systems	16	Mr. Ajay Laxman Koli	Laboratory Assistant	Dipl. In Industrial Electronics ITI (R/TV) *Apprenticeship*

6.2 Additional facilities created for improving the quality of learning experience in laboratories (25) (Institute Marks: 20)

Sr. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Area in which students' are expected to have enhanced learning	Relevance to POs / PSOs
1	Wireless LAN - Dlink	All features and aspects of D-Link Wireless LAN technologies, including the AirPremier N AP and Unified Wireless solution.	It aims to provide a comprehensive learning experience and equip students with an extensive understanding of networking in a wireless LAN environment.	It will be useful for conducting advanced experiments for course code CSC503& also in revised syllabus for course code DLO8013, CSDLO6024. Also will be useful for the preparation of D-link certification.	Advanced Computer Network, Adhoc Wireless Network.	PO3,PO4, ,PSO1

2	Cloud computing	Configured Open stack cloud and eucalyptus cloud, created customized machine instances (Ubuntu, Cent OS, XP)	To gain practical exposure on the upcoming area of cloud computing.	Conducted Internship programme 60%	Distributed computing, Cloud computing	
3	Network security / cyber security	Network vulnerability scanner (NESSUS), IDS (SNORT), KALI Linux, Created virtual network setup using VBox	To train students on various network threats and mitigation techniques	Conducted Internship programme 60%	Network security, information security	PO3,PO4, PO5,PO6 PSO1,PSO2
4	Web Technology	Web application development	Hands on experience of website development, and creating web services.	60%	Web application development	PO1,PO2, PO3,PO5 PSO1,PSO2

6.3 Laboratories: Maintenance and overall ambiance (10) (Institute Marks: 10)

- Minor repairs are regularly carried out in the labs by technical staff of the department.
- Major Service and repairs are carried out periodically as per need respectively from the authorized service center/by calling private service providers.
- The students to computer ratio are 1:1.
- The department has got its own specialized laboratories for software development in various courses.
- Department has sufficient no of computer labs.
- Each lab is with AC facility.
- Every lab is equipped with branded equipment & accessories from best Manufacturers.
- Each lab has internet facility on every pc, laser printer and white board.

6.4 Project Laboratory (5) (Institute Marks: 4)

Project Laboratory resources

- Adequate facilities provided beyond working hours.
- Offering in-house project development.

Utilization of Equipment/ Facilities

- Its facilities were utilized in an average of 8 hrs. in a day

- Project lab is furnished with adequate hardware and software needed for various projects.

6.5 Safety measures in laboratories (10) (Institute Marks: 9)

Sr. No	Laboratory Name	Safety Measures
1	COMPUTER NETWORK LAB	▪ Fire extinguisher is available on every floor. ▪ Proper branded MCBs are provided in the lab ▪ Structured cabling is provided in the lab.
2	ARTIFICIAL INTELLIGENCE LAB	▪ Proper branded MCBs are provided in the lab ▪ Structured cabling is provided in the lab.
3	DATABASE LAB	▪ Proper branded MCBs are provided in the lab ▪ Structured cabling is provided in the lab.
4	COMPUTER ARCHITECTURE LAB	▪ Proper branded MCBs are provided in the lab ▪ Structured cabling is provided in the lab.
5	SOFTWARE ENGG. LAB	▪ Proper branded MCBs are provided in the lab ▪ Structured cabling is provided in the lab.
6	WEB TECHNOLOGY LAB	▪ Proper branded MCBs are provided in the lab ▪ Structured cabling is provided in the lab.
7	IMAGE PROCESSING AND MMS LAB	▪ Proper branded MCBs are provided in the lab ▪ Structured cabling is provided in the lab.
8	SYSTEM PROGRAMMING LAB	▪ Proper branded MCBs are provided in the lab ▪ Structured cabling is provided in the lab.
9	DISTRIBUTED COMPUTING LAB	▪ Proper branded MCBs are provided in the lab ▪ Structured cabling is provided in the lab.
10	PROGRAMMING LAB	▪ Proper branded MCBs are provided in the lab ▪ Structured cabling is provided in the lab.
11	PROJECT LAB	▪ Proper branded MCBs are provided in the lab ▪ Structured cabling is provided in the lab.

CRITERION 7	Continuous Improvement	50

7. Continuous Improvement (50) (Institute Total Marks 41)

7.1 Actions taken based on the results of evaluation of each of the POs and PSOs (20) (Institute Marks 16)

POs and PSOs Attainment Levels and Actions for improvement – CAY

POs Attainment Levels and Actions for Improvement- (2016-17)

POs	Target Level	Attainment Level	Observations
PO 1 : Engineering Knowledge			
PO 1	2.5	2.588	▪ Computer Engineering students gives less importance to non-CS courses. ▪ Students does not take non-audit curses seriously
Action 1: Create awareness among the students about importance of non-CS courses through awareness lectures. Action 2: Include advanced programming skills in audited courses by increasing practical hours. Action 3: Encourage students for participating competitive coding competitions.			
PO 2 : Problem Analysis			
PO 2	2.5	2.563	• Need to strengthen analysis capability of students.
Action 1: Include advanced programming skills in audited courses by increasing practical hours. Action 2: Presentations, Real life problem solving, case studies may be given in third year subjects.			
PO 3 : Design/development of Solutions			
PO 3	2.5	2.577	▪ Need to strengthen real world problems solving capability of students.
Action 2: Conduct case study based sessions in relevant courses and include more mini projects. Action 3: Encourage students for Internship.			
PO 4 : Conduct Investigations of Complex Problems			
PO 4	2.5	2.350	▪ Research work at undergraduate level is less.
Action 1: Encourage students to take up research based projects in their preferred area in their final year. Action 2: Encourage quality research publications.			
PO 5 : Modern Tool Usage			
PO 5	2.5	2.633	• Curriculum does not enforce use of latest tools.

<table>
<tr><td colspan="4">Action 1: Introduce latest software tools in various courses
Action 2: Encourage to use latest tools for project work.</td></tr>
<tr><td colspan="4">PO 6 : The Engineer and Society</td></tr>
<tr><td>PO 6</td><td>2.5</td><td>2.646</td><td>• Syllabus doesn’t conform with the societal aspects and responsibilities relevant to the professional practice.</td></tr>
<tr><td colspan="4">Action 1: Organize workshop/sessions on assessing and addressing societal issues relevant to the professional practice.
Action 2: Preference to Socially relevant projects.</td></tr>
<tr><td colspan="4">PO 7 : Environment and Sustainability</td></tr>
<tr><td>PO 7</td><td>2.5</td><td>2.674</td><td>▪ Syllabus doesn’t conform to the professional engineering solutions in societal and environmental context for sustainable development</td></tr>
<tr><td colspan="4">Action 1: Organize workshop/sessions on assessing and addressing environmental issues.</td></tr>
<tr><td colspan="4">PO 8 : Ethics</td></tr>
<tr><td>PO 8</td><td>2.5</td><td>2.655</td><td>▪ Professional ethics is not included in the curriculum.
▪ No tools are used to measure ethical behaviour of students</td></tr>
<tr><td colspan="4">Action 1: Organize workshop on Personal Ethics to enhance team work and workplace related ethics.
Action 2: Use evaluation tools to measure ethical behaviour of students.</td></tr>
<tr><td colspan="4">PO 9 : Individual and Team Work</td></tr>
<tr><td>PO 9</td><td>2.5</td><td>2.671</td><td>▪ Fewer opportunities to work in teams.
▪ No tools used for measuring participation/team members in various technical and non-technical societies.</td></tr>
<tr><td colspan="4">Action 1: Include mini projects in relevant subjects
Action 2: Schedule mentoring sessions to improve individual performance
Action 3: Find methodology to include measurement of participation/team members in various technical and non-technical societies.</td></tr>
<tr><td colspan="4">PO 10 : Communication</td></tr>
<tr><td>PO 10</td><td>2.5</td><td>2.596</td><td>▪ Students give less importance for documentation.</td></tr>
<tr><td colspan="4">Action 1: Include documentation in courses like SOOAD, SE, etc.
Action 2: Organize presentations for project work.</td></tr>
</table>

Action 3: Organize workshop on documentation tools.			
PO 11 : Project Management and Finance			
PO 11	2.5	2.667	▪ Less understanding of the engineering and management principles.
Action 1: Organize Management Expert lectures			
PO 12 : Life-long Learning			
PO 12	2.5	2.468	▪ Lack of interest in Research work ▪ Few students learns advanced technologies themselves.
Action 1: Encourage students to take up research based projects in their preferred area in their final year. Action 2: Encourage students to learn different technologies through assignments.			

POs Attainment Levels and Actions for Improvement- (2015-2016) (CAYM1)

POs	**Target Level**	**Attainment Level**	**Observations**
PO 1 : Engineering Knowledge			
PO 1	2.5	2.59	▪ Computer Engineering students gives less importance to non-CS courses. ▪ Need improvement in fundamental knowledge of Computer Engineering Courses.
Action 1: Create awareness among the students about importance of non-CS courses through awareness lectures. Action 2: Introduce non-credited lab courses to improve Advanced Programming and Competitive Coding skills. Action 3: Encourage students for participating competitive coding competitions.			
PO 2 : Problem Analysis			
PO 2	2.5	2.575	▪ Need to strengthen analysis capability of students.
Action 1: Solve brain teaser problems in subjects like C302, C303, C405, etc. Action 2: Presentations, Real life problem solving, case studies may be given in subjects like C601, C603, C701, C702, C7025, C802, C803, C8031, etc.			
PO 3 : Design/development of Solutions			
PO 3	2.5	2.54	▪ Need to strengthen real

			world problems solving capability of students. ▪ Less participation in Industrial project
Action 1: Introduce non-credited lab courses to improve Advanced Programming and Competitive Coding skills. Action 2: Conduct case study based sessions in relevant courses. Action 3: Encourage students for Internship.			
PO 4 : Conduct Investigations of Complex Problems			
PO 4	2.5	2.42	▪ Research work at undergraduate level is less. ▪ Lack of awareness of industry based practices.
Action 1: Encourage students to take up research based projects in their preferred area in their final year. Action 2: Encourage students for Internship.			
PO 5 : Modern Tool Usage			
PO 5	2.5	2.59	▪ Curriculum does not enforce use of latest tools.
Action 1: Introduce latest software tools in courses like CPL701, C801, C8031. Action 2: Organize workshops on modern tools			
PO 6 : The Engineer and Society			
PO 6	2.5	2.641	▪ Syllabus doesn't conform with the societal aspects and responsibilities relevant to the professional practice.
Action 1: Organize workshop/sessions on assessing and addressing societal issues relevant to the professional practice. Action 2: Preference to Socially relevant projects.			
PO 7 : Environment and Sustainability			
PO 7	2.5	2.577	▪ Syllabus doesn't conform to the professional engineering solutions in societal and environmental context

			for sustainable development
Action 1: Organize workshop/sessions on assessing and addressing environmental issues.			
PO 8 : Ethics			
PO 8	2.5	2.73	▪ Professional ethics is not included in the curriculum.
Action 1: Organize workshop on Personal Ethics to enhance team work and workplace related ethics.			
PO 9 : Individual and Team Work			
PO 9	2.5	2.63	▪ Fewer opportunities to work in teams. ▪ No tools used for measuring participation/team members in various technical and non-technical societies.
Action 1: Include mini projects in relevant subjects Action 2: Schedule mentoring sessions to improve individual performance Action 3: Find methodology to include measurement of participation/team members in various technical and non-technical societies.			
PO 10 : Communication			
PO 10	2.5	2.631	▪ Students give less importance for documentation.
Action 1: Launch news letters to give the students a platform to express ideas and improve documentation skills. Action 2: Organize presentations for project work. Action 3: Organize workshop on documentation tools.			
PO 11 : Project Management and Finance			
PO 11	2.5	2.6945	▪ Less understanding of the engineering and management principles.
Action 1: Organize Management Expert lectures			
PO 12 : Life-long Learning			
PO 12	2.5	2.6764	▪ Lack of interest in Research work ▪ Few students learns advanced technologies

			themselves.
Action 1: Encourage students to take up research based projects in their preferred area in their final year. Action 2: Encourage students to learn different technologies through assignments.			

POs Attainment Levels and Actions for Improvement- (2014-15) (CAYM2)

POs	**Target Level**	**Attainment Level**	**Observations**
PO 1 : Engineering Knowledge			
PO 1	2.5	2.5	▪ Computer Engineering students gives less importance to non-CS courses ▪ Need improvement in basic concepts of Computer Engineering Courses.
Action 1: Create awareness among the students about importance of non-CS courses through awareness lectures. Action 2: Encourage students for participating competitive coding competitions. Action 3: Suggest University to include more lab courses for programming.			
PO 2 : Problem Analysis			
PO 2	2.5	2.51	▪ Need to strengthen analysis capability of students.
Action 1: Presentations, Real life problem solving, case studies may be given in subjects like C601, C603, C701, C702, C7025, C802, C803, C8031, etc.			
PO 3 : Design/development of Solutions			
PO 3	2.5	2.2	▪ Need to strengthen real world problems solving capability of students. ▪ Less participation in industrial project.
Action 1: Conduct case study based sessions for relevant courses. Action 2: Encourage students for Internship. Action 3: Suggest University to include more lab courses for programming.			
PO 4 : Conduct Investigations of Complex Problems			
PO 4	2.5	2.07	▪ Research work at undergraduate level is less.

			▪ Lack of awareness of industry based practices.
Action 1: Encourage students to take up final years projects based on research papers in their preferred area. Action 2: Encourage students for Internship.			
PO 5 : Modern Tool Usage			
PO 5	2.5	2.53	▪ Curriculum does not enforce use of latest tools.
Action 1: Introduce latest software tools in courses like CPL701, C801, C8031.			
PO 6 : The Engineer and Society			
PO 6	2.5	2.84	▪ Syllabus doesn't conform with the societal aspects and responsibilities relevant to the professional practice.
Action 1: Preference to Socially relevant projects.			
PO 7 : Environment and Sustainability			
PO 7	2.5	2.6	▪ Syllabus doesn't conform to the professional engineering solutions in societal and environmental context for sustainable development.
Action 1: Preference to Socially relevant projects			
PO 8 : Ethics			
PO 8	2.5	2.51	▪ Professional ethics is not included in the curriculum.
Action 1: Organize workshop on Personal Ethics to enhance team work and workplace related ethics.			
PO 9 : Individual and Team Work			
PO 9	2.5	2.59	▪ Fewer opportunities to work in teams. ▪ No tools used for measuring

			participation/team members in various technical and non-technical societies.
Action 1: Include mini projects in relevant subjects			
PO 10 : Communication			
PO 10	2.5	2.511	▪ Students give less importance for documentation.
Action 1: Launch news letters to give the students a platform to express ideas and improve documentation skills. Action 2: Organize presentations for project work.			
PO 11 : Project Management and Finance			
PO 11	2.5	2.649	▪ Less understanding of the engineering and management principles
Action 1: Organize Management Expert lectures			
PO 12 : Life-long Learning			
PO 12	2.5	2.544	▪ Lack of interest in Research work
Action 1: Encourage students to take up research based projects in their preferred area in their final year.			

POs Attainment Levels and Actions for Improvement- (2013-14) (CAYM3)

POs	**Target Level**	**Attainment Level**	**Observations**
PO 1 : Engineering Knowledge			
PO 1	2.5	2.5394	▪ Computer Engineering students gives less importance to non-CS courses ▪ Need improvement in basic concepts of Computer Engineering Courses.
Action 1: Create awareness among the students about importance of non-CS courses through awareness lectures. Action 2: Encourage students for participating competitive coding competitions.			

PO 2 : Problem Analysis			
PO 2	2.5	2.47	▪ Need to strengthen analysis capability of students.
Action 1: Presentations, Real life problem solving, case studies may be given in subjects like C601, C603, C701, C702, C7025, C802, C803, C8031, etc.			
PO 3 : Design/development of Solutions			
PO 3	2.5	2.15	▪ Need to strengthen real world problems solving capability of students. ▪ Less participation in industrial project
Action 1: Conduct case study based sessions for relevant courses. Action 2: Encourage students for Internship.			
PO 4 : Conduct Investigations of Complex Problems			
PO 4	2.5	2.33	▪ Research work at undergraduate level is less. ▪ Lack of awareness of industry based practices.
Action 1: Encourage students to take up final years projects based on research papers in their preferred area. Action 2: Encourage students for Internship.			
PO 5 : Modern Tool Usage			
PO 5	2.5	2.48	▪ Curriculum does not enforce use of latest tools.
Action 1: Introduce latest software tools in courses like CPL701, C801, C8031.			
PO 6 : The Engineer and Society			
PO 6	2.5	2.8	▪ Syllabus doesn't conform with the societal aspects and responsibilities relevant to the professional practice.
Action 1: Preference to Socially relevant projects.			
PO 7 : Environment and Sustainability			
PO 7	2.5	2.84	▪ Syllabus doesn't conform to the professional

			engineering solutions in societal and environmental context for sustainable development
Action 1: Preference to Socially relevant projects			
PO 8 : Ethics			
PO 8	2.5	2.46	▪ Professional ethics is not included in the curriculum.
Action 1: Organize workshop on Personal Ethics to enhance team work and workplace related ethics.			
PO 9 : Individual and Team Work			
PO 9	2.5	2.5	▪ Fewer opportunities to work in teams. No tools used for measuring participation/team members in various technical and non-technical societies.
Action 1: Include mini projects in relevant subjects			
PO 10 : Communication			
PO 10	2.5	2.89	▪ Students give less importance for documentation.
Action 1: Organize presentations for project work.			
PO 11 : Project Management and Finance			
PO 11	2.5	2.5	▪ Less understanding of the engineering and management principles
Action 1: Organize Management Expert lectures			
PO 12 : Life-long Learning			
PO 12	2.5	2.772	▪ Lack of interest in Research work
Action 1: Encourage students to take up research based projects in their preferred area in their final year			

PSOs:

PSOs Attainment Levels and Actions for Improvement- (2016-17) (CAY)

PSOs	Target Level	Attainment	Observations

PSO1: Apply fundamental computer science knowledge to solve real world problems.			
PSO1	2.7	2.42	Less correlation between theory and practice.
Action 1: Encourage faculty members to use case study based approach in delivering lecture Action 2: Include mini projects in relevant subjects.			
PSO2: Design and Implement software systems of varying complexity in multidisciplinary scenarios that meet specified requirements with appropriate consideration to architectural, algorithmic and security aspects.			
PSO2	2.7	2.56	Awareness of industry based practices is Less
Action 1: Encourage students for internships. Action 2: Encourage students for participating project/coding competitions.			

PSOs Attainment Levels and Actions for Improvement- (2015-16) (CAYM1)

PSOs	**Target Level**	**Attainment Level**	**Observations**
PSO 1 : Apply fundamental computer science knowledge to solve real world problems.			
PSO 1	2.5	2.3363	Less correlation between theory and practice.
Action 1: Encourage faculty members to use case study based approach in delivering lecture Action 2: Include mini projects in relevant subjects.			
PSO 2 : Design and Implement software systems of varying complexity in multidisciplinary scenarios that meet specified requirements with appropriate consideration to architectural, algorithmic and security aspects.			
PSO 2	2.5	2.5889	Awareness of industry based practices is Less
Action 1: Encourage students for internships. Action 2: Encourage students for participating project/coding competitions.			

PSOs Attainment Levels and Actions for Improvement- (2014-15) (CAYM2)

PSOs	**Target Level**	**Attainment Level**	**Observations**
PSO 1 : Apply fundamental computer science knowledge to solve real world problems.			
PSO 1	2.5	2.26	▪ Less correlation between theory and practice.
Action 1: Encourage faculty members to use case study based approach in delivering lecture Action 2: Include mini projects in relevant subjects.			
PSO 2 : Design and Implement software systems of varying complexity in multidisciplinary scenarios that meet specified requirements with appropriate consideration to architectural, algorithmic and security aspects.			

PSO 2	2.5	2.4	▪ Need to strengthen analysis capability of students.
Action 1: Solve brain teaser problems in subjects like C302, C303, C405, etc. Action 2: Presentations, Real life problem solving, case studies may be given in subjects like C601, C603, C701, C702, C7025, C802, C803, C8031, etc.			

PSOs Attainment Levels and Actions for Improvement- (2013-14) (CAYM3)

PSOs	**Target Level**	**Attainment Level**	**Observations**
PSO 1 : Apply fundamental computer science knowledge to solve real world problems			
PSO 1	2.5	2.184	▪ Less correlation between theory and practice.
Action 1: Implement case study based approach in delivering lecture			
PSO 2 : Design and Implement software systems of varying complexity in multidisciplinary scenarios that meet specified requirements with appropriate consideration to architectural, algorithmic and security aspects.			
PSO 2	2.5	2.33	▪ Need to strengthen analysis capability of students.
Action 1: Encourage students for internships. Action 2: Encourage students for coding competitions. Action 3: More Industry Institution interaction.			

7.2 Academic Audit and actions taken thereof during the period of assessment (10) (Institute Marks 9)

Academic audit is planned end of academic year. An expert from academia is invited to conduct academic audit. Auditor verifies and discuss teaching plan, teaching methodology, lab manuals, CO statements, CO measurement tools, etc. with faculty. Parameters used for academic audit are as follows:

- Teaching Plan
- Content quality and depth
- Delivery mechanism
- Content beyond syllabus
- Quality of lab manuals, additional experiments
- Evaluation methods, Assessment rubrics and assessment analysis
- CO-PO mapping
- Knowledge of tools used
- Identification of weak students
- Help rendered to students
- Collaboration with colleague
- Projects guided

Following are some observations/suggestions reported by an expert:

- CO formulation need to be improved
- CO-PO mapping is to be assessed by PAC
- Some of the faculty members need to adapt process to identify weak students
- Attainment analysis needs to be improved.

Following actions will be implemented in next academic year:

- PAC will assess CO statements, CO-PO mapping, assessment tools, rubrics created for assessment, attainment analysis, etc.
- Every faculty member assigned 5-6 students per class for mentoring. Mentor is supposed to meet their mentees at least once per month and submit the report to Head of the Department.

7.3 Improvement in Placement, Higher Studies and Entrepreneurship (10) (Institute Marks 8)

Most of the eligible students get placement in campus. About 20% students opt for higher education immediately after graduation while almost 80% students pursue for higher after one or two years industrial experience. The statistics for past three years is as follows:

Academic year 2016-17:

Total number of Final Year Students: 71

Number of students placed in companies or government sector : 56

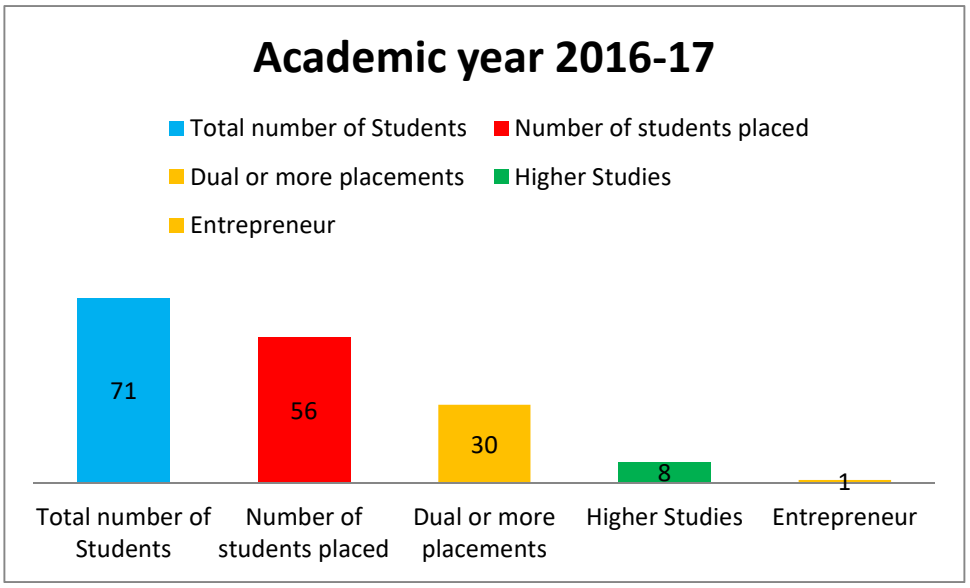
Dual or more placements: 30

Minimum Salary: 3.15Lacs per annum

Maximum Salary:14.4Lacs per annum

Number of students admitted to higher studies with valid qualifying scores (GATE or equivalent state or national level tests, GRE, GMAT, etc.) : 8

Number of students turned entrepreneur/technology: 1



Academic year 2015-16:

Total number of Final Year Students : 72

Number of students placed on campus in companies or government sector : 54

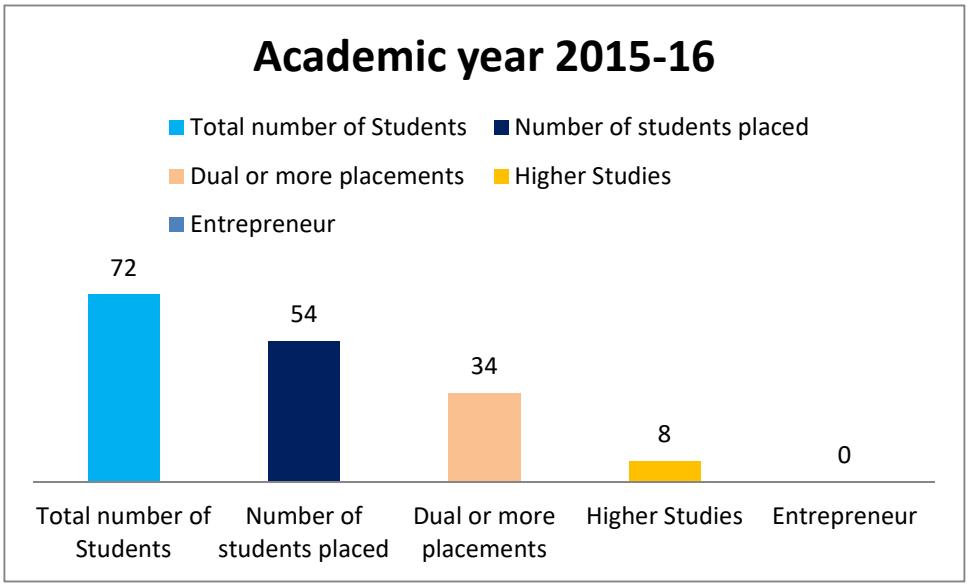
Dual or more placements: 34

Minimum Salary: 3.18 Lacs per annum

Maximum Salary: 9 Lacs per annum

Number of students admitted to higher studies with valid qualifying scores (GATE or equivalent state or national level tests, GRE, GMAT, etc.) : 8

Number of students turned entrepreneur/technology: 0



Academic year 2014-15:

Total number of Final Year Students : 81

Number of students placed in companies or government sector : 63

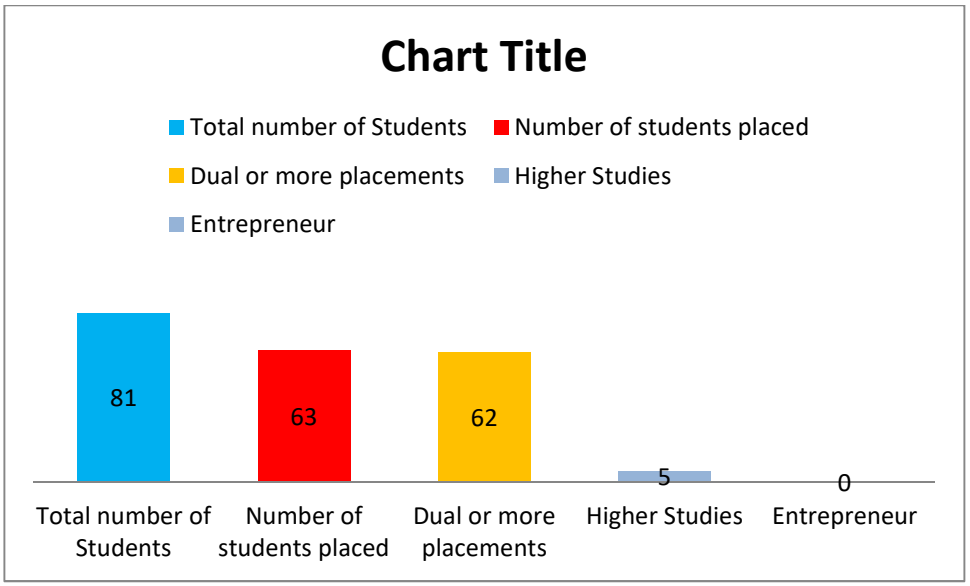
Dual or more placements: 62

Minimum Salary: 3.10 Lacs per annum

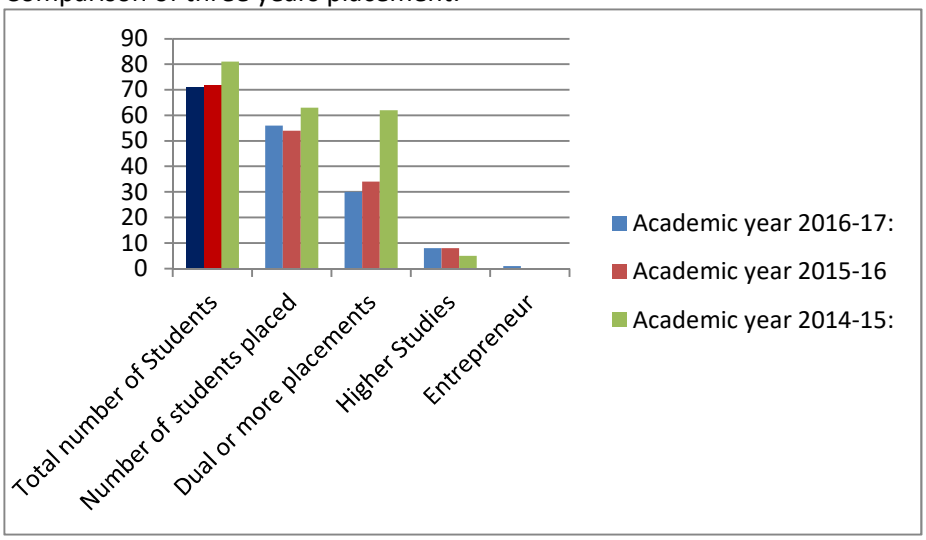
Maximum Salary: 6.70 Lacs per annum

Number of students admitted to higher studies with valid qualifying scores (GATE or equivalent state or national level tests, GRE, GMAT, etc.) : 5

Number of students turned entrepreneur/technology: 0



Comparison of three years placement:



7.4 Improvement in the quality of students admitted to the program (10) (Institute Marks 8)

		CAY	CAYm1	CAYm2
National Level Entrance Examination (Name of Entrance Examination)	No. of students admitted	0	62	64
	Opening Score / Rank	--	97	93
	Closing Score / Rank	--	72	52

State / University Level Entrance Examination / Others (Name of Entrance Examination)	No. of students admitted	67	NIL	NIL
	Opening Score / Rank	165/200		
	Closing Score / Rank	64/200		
Name of the Entrance Examination for Lateral Entry or lateral entry details	No. of students admitted	12	12	12
	Opening Score / Rank	88.85%	87%	89%
	Closing Score / Rank	81.94%	64%	77%
Average CBSE/Any other Board Results of admitted students (Physics, Chemistry & Maths)		79.36%	73.87%	73%

CRITERION 8	First Year Academics	80

8. First Year Academics (50) (Institute Total Marks 37.72)

8.1 First Year Student-Faculty Ratio (FYSFR) (5) (Institute Marks 4.34)

Assessment = (5*15)/Average FYSFR

Data for first year courses to calculate FYSFR:

Year	Number of students (approved intake strength)	Number of faculty members (considering fractional load)	FYSFR
CAY(2016-17)	240	13.99	17.15
CAYm1	240	14.17	16.93
CAYm2	240	13.5	17.77
Average			17.28
Assessment = (5*15)/Average FYSFR			4.34

8.2 Qualification of Faculty Teaching First Year Common Courses (5) (Institute Marks 3.33)

Assessment of qualification = (5x + 3y)/RF

where x = number of regular faculty with Ph.D., y = number of regular faculty with postgraduate qualification and RF = number of faculty members required as per SFR of 15:1, Faculty definition as defined in 5.1

Year	x	y	RF	Assessment faculty qualification = (5x + 3y)/RF
CAY	4	12	16	3.50
CAYm1	2	14	16	3.25
CAYm2	2	14	16	3.25
Average assessment				3.33

8.3 First Year Academic Performance (10) (Institute Marks 7.05)

Academic Performance = ((Mean of 1st Year Grade Point Average of all successful students on a 10 point scale) or (mean of the percentage of marks of all successful students in First year/10))*(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	CAY	CAYm1	CAYm2	CAYm3
Mean of CGPA or mean percentage of all successful students(X)	Result Awaited	7.49	7.11	7.24
Total Number of successful students(Y)		61	64	63
Total Number of students appeared in the examination(Z)		64	65	65
API [X*(Y/Z)]		7.14	7.00	7.02

Average API[(AP1+AP2+AP3)/3] : 7.05

Assessment [1.5 * Average API] : 7.05

8.4 Attainment of Course Outcomes of First year courses (10) (Institute Total Marks 8)

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) (Institute Marks 4)

The following process is used to gather the data.

1. Lesson Plan is prepared by every faculty at the beginning of the semester. The Lesson plan includes Course Outcomes, mapping of CO with PO and PSO, CO Assessment plan that contain CO Assessment tools, Rubrics, CO Attainment Target.
2. Every faculty gathers and compiles data throughout the semester as per the lesson plan.
   a. Unit test data is compiled as per unit test schedule.
   b. Course exit surveys are organized at end of semester.
   c. Lab experiments are assessed regularly by individual faculty.
   d. Assignments are assessed as per the schedule given in lesson plan.
   e. Quizzes and presentations are organized.
   f. End semester examination results are compiled after declaration of results.
3. Faculty provides assessment data via Excel sheets. Faculty also provides copies of assessment instruments and graded student work. Copies are stored electronically.

Assessment tools used for CO attainment.

Unit Test: Two tests are conducted in each semester. The questions are set pertaining to the relevant COs. The marks earned by the students are analyzed for the attainment of CO.

Lab Experiments: Lab experiments are evaluated regularly according to rubrics designed. These rubrics are communicated to the students in advance.

Assignments: Assignments are evaluated regularly according to rubrics designed. These rubrics are communicated to the students in advance.

Quiz (Optional)**:** Quiz is used to evaluate the CO. Generally it is conducted online.

Presentations (Optional)**:** Students give presentations on topic assigned to them. Assessment of the presentation is done in accordance with rubrics provided.

End Semester Examination (Theory and Practical): End semester examination results are used as per the guidelines of NBA.

Course Exit Survey: At the end of semester course exit survey is conducted and analyzed. The result of analysis is used for calculation of attainment of CO.

8.4.2 Record the attainment of course outcomes of all first year courses (5) (Institute Marks 4)

Semester I

Department of Computer Engineering(2016-17)

FEC101 Applied Mathematics-I

FEC101.1	**Target: 2.4**	**Attainment: 2.8**
FEC101.2	**Target: 2.4**	**Attainment: 2.8**
FEC101.3	**Target: 2.4**	**Attainment: 2.8**
FEC101.4	**Target: 2.4**	**Attainment: 2.6**

FEC102 Applied Physics-I

FEC102.1	**Target: 2.4**	**Attainment: 3**

FEC102.2	**Target: 2.4**	**Attainment: 3**
FEC102.3	**Target: 2.4**	**Attainment: 3**
FEC102.4	**Target: 2.4**	**Attainment: 3**
FEC102.5	**Target: 2.4**	**Attainment: 3**
FEC102.6	**Target: 2.4**	**Attainment: 3**

FEC103 Applied Chemistry -I

FEC103.1	**Target: 2.4**	**Attainment: 2.37**
FEC103.2	**Target: 2.4**	**Attainment: 2.37**
FEC103.3	**Target: 2.4**	**Attainment:2.4**
FEC103.4	**Target: 2.4**	**Attainment: 2.25**

FEC104 Engineering Mechanics

FEC104.1	**Target: 2.4**	**Attainment: 2.84**
FEC104.2	**Target: 2.4**	**Attainment: 3**
FEC104.3	**Target: 2.4**	**Attainment: 2.68**
FEC104.4	**Target: 2.4**	**Attainment: 2.48**
FEC104.5	**Target: 2.4**	**Attainment: 2.8**

FEC105 Basic Electrical & Electronics Engineering

FEC105.1	**Target: 2.4**	**Attainment:** 2.84
FEC105.2	**Target: 2.4**	**Attainment:** 2.6
FEC105.3	**Target: 2.4**	**Attainment:** 2.32
FEC105.4	**Target: 2.4**	**Attainment:** 2.4
FEC105.5	**Target: 2.4**	**Attainment: 3**

FEC106 Environmental studies

FEC106.1	**Target: 2.4**	**Attainment: 2.52**
FEC106.2	**Target: 2.4**	**Attainment:3.0**
FEC106.3	**Target: 2.4**	**Attainment: 3.0**
FEC106.4	**Target: 2.4**	**Attainment: 1.72**

FEL101 Basic Workshop Practice

FEL101.1	**Target: 2.4**	**Attainment:** Result awaited
FEL101.2	**Target: 2.4**	**Attainment:** Result awaited
FEL101.3	**Target: 2.4**	**Attainment:** Result awaited

Semester II

FEC201 Applied Mathematics-II

FEC201.1	**Target: 2.4**	**Attainment: 2.6**
FEC201.2	**Target: 2.4**	**Attainment: 3**
FEC201.3	**Target: 2.4**	**Attainment: 3**
FEC201.4	**Target: 2.4**	**Attainment: 2.04**

FEC202 Applied Physics-II

FEC202.1	**Target: 2.4**	**Attainment: 3**
FEC202.2	**Target: 2.4**	**Attainment: 3**
FEC202.3	**Target: 2.4**	**Attainment: 2.84**
FEC202.4	**Target: 2.4**	**Attainment: 2.76**
FEC202.5	**Target: 2.4**	**Attainment: 2.08**
FEC202.6	**Target: 2.4**	**Attainment: 2.8**

FEC203 Applied Chemistry -II

FEC203.1	**Target: 2.4**	**Attainment: 2.28**
FEC203.2	**Target: 2.4**	**Attainment: 1.96**
FEC203.3	**Target: 2.4**	**Attainment: 2.2**
FEC203.4	**Target: 2.4**	**Attainment: 2.2**

EC204 Engineering Drawing

FEC204.1	**Target: 2.4**	**Attainment: 2.68**
FEC204.2	**Target: 2.4**	**Attainment: 2.68**
FEC204.3	**Target: 2.4**	**Attainment: 2.68**
FEC204.4	**Target: 2.4**	**Attainment: 2.68**
FEC204.5	**Target: 2.4**	**Attainment: 3**

FEC205 Structured Programming Approach

FEC205.1	**Target: 2.7**	**Attainment: 2.12**
FEC205.2	**Target: 2.7**	**Attainment: 2.52**
FEC205.3	**Target: 2.7**	**Attainment: 2.12**
FEC205.4	**Target: 2.7**	**Attainment: 2.2**

FEC206 Communication Skills

FEC206.1	**Target: 2.4**	**Attainment: 2.04**
FEC206.2	**Target: 2.4**	**Attainment: 2.28**
FEC206.3	**Target: 2.4**	**Attainment: 2.52**
FEC206.4	**Target: 2.4**	**Attainment: 3**
FEC206.5	**Target: 2.4**	**Attainment: 3**

FEL201 Basic Workshop Practice -II

FEL201.1	**Target: 2.4**	**Attainment:** Result awaited
FEL201.2	**Target: 2.4**	**Attainment:** Result awaited
FEL201.3	**Target: 2.4**	**Attainment:** Result awaited

8.5 Attainment of Program Outcomes from first year courses (20) (Institute Total Marks 15)

8.5.1 Indicate results of evaluation of each relevant PO and PSO, if applicable (1) (Institute

Marks 12)

The PO attainment is calculated for academic year 2015-16 as End Semester results of 2016-17 are not declared by University.

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEC101	2.43	-	-	-	-	-	-	-	-	-	-	-
FEC102	1.45	-	-	-	-	-	-	-	-	-	-	-
FEC103	1.11	-	-	-	-	-	-	-	-	-	-	-
FEC104	0.77	1.94	-	-	-	-	-	-	0.41	-	-	-
FEC105	1.97	1.96	0.79	-	-	-	-	-	-	-	-	-
FEC106	0.5	-	-	-	-	0.5	1	-	-	-	-	-
FEC201	1.24	-	-	-	-	-	-	-	-	-	-	-
FEC202	1.5	-	-	-	-	-	-	-	-	-	-	-
FEC203	1.5	-	-	-	-	-	-	-	-	-	-	-
FEC204	0.33	0.33	1	-	1	-	-	-	0.33	0.33		
FEC205	0.87	2.8	2.5	3	-	-	-	-	-	-	-	-
FEC206	1.31	-	-	-	-	-	-	-	-	-	-	-
FEL101/201	0.34	0.34	-	-	0.34	-	-	-	-	-	-	-
Direct Attainment	1.19	1.47	1.43	3	0.67	0.5	1	-	0.37	0.33	-	-

Course	PSO1	PSO2
FEC101	-	-
FEC102	-	-
FEC103	-	-
FEC104	-	-
FEC105	-	-
FEC106	-	-
FEC201	-	-
FEC202	-	-
FEC203	-	-
FEC204	-	-
FEC205	2.61	2.61
FEC206	-	-
FEL101/201	-	-
Direct Attainment		

8.5.2 Actions taken based on the results of evaluation of relevant POs (5) (Institute Marks 3)

PO attainment levels and actions for improvement – CAY

POs	Target Level	Attainment	Observations
PO1: **Engineering Knowledge**:			
PO1	2.4		Result awaited
Action 1:			
PO2: **Problem Analysis:**			
PO2	2.4		Result awaited
Action 1:			
PO3: **Design/Development of Solutions:**			
PO3	2.4		Result awaited
Action 1:			
PO4: **Conduct Investigations of complex problems:**			
PO4	----------		
Action 1:			
PO5: **Modern Tool Usage:**			
PO5	2.4		Result awaited
Action 1:			
PO6: **Engineer and Society**			
PO6	2.4		Result awaited
Action 1: Extra lectures need to be conducted to improve attainments in CO1, CO3 &CO4 of FEC106.			
PO7: **Environment and Sustainability**			
PO7	2.4		Result awaited
Action 1: Extra lectures need to be conducted to improve attainments in CO1, CO3 &CO4 of FEC106.			
PO8: E**thics:**			
PO8		----------	
Action 1:			
PO9: **Individual and team work:**.			
PO9	----------		
Action 1:			
PO10: **Communication**			
PO10	2.4		Result awaited
Action 1:			
PO11: **Project management and finance:**			
PO11		---------	
Action 1:			

PO12: **Lifelong Learning:**			
PO12		----------	
Action 1:			

PO attainment levels and actions for improvement – CAYm1

POs	**Target Level**	**Attainment**	**Observations**
PO1: **Engineering Knowledge**:			
PO1	2.4	2.75	Target attained
Action 1:			
PO2: **Problem Analysis:**			
PO2	2.4	2.72	Target attained
Action 1:			
PO3: **Design/Development of Solutions:**			
PO3	2.4	2.53	Target attained
Action 1:			
PO4: **Conduct Investigations of complex problems:**			
PO4	----------		
Action 1:			
PO5: **Modern Tool Usage:**			
PO5	2.4	2.8	Target attained
Action 1:			
PO6: **Engineer and Society**			
PO6	2.4	2.1	Target not attained due to FEC106
Action 1: Extra lectures need to be conducted to improve attainments in CO1, CO3 &CO4 of FEC106.			
PO7: **Environment and Sustainability**			
PO7	2.4	2.1	Target not attained due to FEC106
Action 1: Extra lectures need to be conducted to improve attainments in CO1, CO3 &CO4 of FEC106.			
PO8: E**thics:**			
PO8		----------	
Action 1:			
PO9: **Individual and team work:**.			
PO9	----------		
Action 1:			
PO10: **Communication**			
PO10	2.4	2.73	Target attained
Action 1:			
PO11: **Project management and finance:**			

PO11		---------	
Action 1:			
PO12: **Lifelong Learning:**			
PO12		----------	
Action 1:			

PO attainment levels and actions for improvement – CAYm2

POs	**Target Level**	**Attainment**	**Observations**
PO1: **Engineering Knowledge**:			
PO1	2.1	2.68	Target is attained.
Action 1:			
PO2: **Problem Analysis:**			
PO2	2.1	2.52	Target is attained.
Action 1:			
PO3: **Design/Development of Solutions:**			
PO3	2.1	2.46	Target is attained.
Action 1:			
PO4: **Conduct Investigations of complex problems:**			
PO4		----------	
Action 1:			
PO5: **Modern Tool Usage:**			
PO5	2.1	2.5	Target is attained.
Action 1:			
PO6: **Engineer and Society:**			
PO6	2.1	3	Target is attained.
Action 1:			
PO7: **Environment and Sustainability**			
PO7	2.1	3	Target is attained.
Action 1:			
PO8: E**thics:**			
PO8		----------	
Action 1:			
PO9: **Individual and team work:**			
PO9	----------		.
Action 1:			
PO10: **Communication:**			
PO10	2.1	2.31	Target is attained.
Action 1:			
PO11: **Project management and finance:**			

PO11		---------	
Action 1:			
PO12: **Lifelong Learning:**			
PO12		----------	
Action 1:			

PO attainment levels and actions for improvement – CAYm3

POs	**Target Level**	**Attainment**	**Observations**
PO1: **Engineering Knowledge**:			
PO1	1.8	2.96	Target is attained.
Action 1:			
PO2: **Problem Analysis:**			
PO2	1.8	2.91	Target is attained.
Action 1:			
PO3: **Design/Development of Solutions:**			
PO3	1.8	2.85	Target is attained.
Action 1:			
PO4: **Conduct Investigations of complex problems:**			
PO4		---------	
Action 1:			
PO5: **Modern Tool Usage:**			
PO5	1.8	3	Target is attained.
Action 1:			
PO6: **Engineer and Society:**			
PO6	1.8	3	Target is attained.
Action 1:			
PO7: **Environment and Sustainability:**			
PO7	1.8	3	Target is attained.
Action 1:			
PO8: E**thics:**			
PO8		----------	
Action 1:			
PO9: **Individual and team work:**			
PO9			
Action 1:			
PO10: **Communication:**			
PO10	1.8	3	Target is attained.
Action 1:			
PO11: **Project management and finance:**			

PO11		---------	
Action 1:			
PO12: **Lifelong Learning:**			
PO12		----------	
Action 1:			

PSO Attainment:

CAY

PSOs	**Target Level**	**Attainment**	**Observations**
PSO1: Apply fundamental computer science knowledge to solve real world problems.			
PSO1	2.5		Results awaited
Action 1: Action 2:			
PSO2: Design and Implement software systems of varying complexity in multidisciplinary scenarios that meet specified requirements with appropriate consideration to architectural, algorithmic and security aspects.			
PSO2	2.5		Results awaited
Action 1: Action 2:			

CAYm1

PSOs	**Target Level**	**Attainment**	**Observations**
PSO1: Apply fundamental computer science knowledge to solve real world problems.			
PSO1	2.5	2.9	PSO attained
Action 1:			
PSO2: Design and Implement software systems of varying complexity in multidisciplinary scenarios that meet specified requirements with appropriate consideration to architectural, algorithmic and security aspects.			
PSO2	2.5	2.9	PSO attained
Action 1:			

CAYm2

PSOs	**Target Level**	**Attainment**	**Observations**
PSO1: Apply fundamental computer science knowledge to solve real world problems.			
PSO1	2.5	2.45	Programming fundamentals need to improve
Action 1: More emphasis to be given for practicals.			
PSO2: Design and Implement software systems of varying complexity in multidisciplinary			

scenarios that meet specified requirements with appropriate consideration to architectural, algorithmic and security aspects.			
PSO2	2.5	2.45	Programming fundamentals need to improve
Action 1: More emphasis to be given for practicals.			

CAYm3

PSOs	**Target Level**	**Attainment**	**Observations**
PSO1: Apply fundamental computer science knowledge to solve real world problems.			
PSO1	2.5	2.45	Programming fundamentals need to improve
Action 1: More emphasis to be given for practicals.			
PSO2: Design and Implement software systems of varying complexity in multidisciplinary scenarios that meet specified requirements with appropriate consideration to architectural, algorithmic and security aspects.			
PSO2	2.5	2.45	Programming fundamentals need to improve
Action 1: More emphasis to be given for practicals.			

CRITERION 9	Students Support Systems	50

9. Students Support Systems (50) (Institute Total Marks 39)

9.1 Mentoring system to help at individual level (5) (Institute Marks 3)

We have a structured mentoring program for the students. The mentors guide the mentees to make right decisions and choices about career and in some cases personal matters. At the first year level 20-25 students are allotted to one mentor who guides them throughout the year.

At department level (2 to final year) approximately 5-7 students from each class are associated with one mentor teacher.

The mentors look after the students' overall development. The mentors organize parents-teacher meet during the semester to discuss the progress of their mentees with their parents. Mentoring has resulted in improvement in regularity of the students.

In this way, the mentoring system in Fr.C.R.C.E. supports and encourages students to manage learning to maximize potential, develop skills, and improve performanceWe have a structured mentoring program for the students. The mentors guide the mentees to make right decisions and choices about career and in some cases personal matters. At the first year level 20-25 students are allotted to one mentor who guide them throughout the year.

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In this way, the mentoring system in Fr. C.R.C.E. supports and encourages students to manage learning to maximize potential, develop skills, and improve performance.

9.2 Feedback analysis and reward / corrective measures taken, if any (10) (Institute Marks 8)

Feedback collection process:

Feedback collected for all courses: YES;

Feedback collection process:

Mid-term feedback, is taken by HODs from selected students in each class.

At the end of semester, online feedback for every faculty is filled up by the students. The feedback is forwarded to the individual faculties for necessary action.

Percentage of students who participated: Nearly 70% of students participate voluntarily.

Feedback analysis process:

Based on mid-term feedback, HOD takes corrective measures immediately, if required.

For the end semester feedback, the faculty members are graded on a scale of 05 on parameters like Subject knowledge, Communication abilities, Punctuality, Unbiased approach, ability to hold attention etc.

For any of these parameters, if average grade is less than 3.00, then as self-reflection and self-correction procedure, faculty gives measures to improve upon the same.
At the end of academic year, a faculty appraisal meeting is held with the HOD and Principal to discuss and deliberate on the areas of improvement.

Basis of reward / corrective measures, if any: The faculty members are appreciated for their good feedback during the appraisal meeting. Wherever applicable, corrective measures are discussed.

Number of corrective actions taken in the last three years: As per need / Exact numbers have

not been recorded

9.3 Feedback on facilities (5) (Institute Marks 4)

Feedback on facilities and other facilities is taken through graduate exit survey. A suggestion box is also placed near college office where students can drop their feedback/suggestion on any campus issue including facilities. In addition, informal feedback is taken by Principal, HODs, faculty during mentoring or in informal discussions with students and alumni.

University appointed Local Inquiry Committee visits the Institute every year and gives report on college functioning including facilities expected and provided. Immediate actions are taken on their suggestions.

Most of the feasible suggestions are implemented as early as possible.

9.4 Self-Learning (5) (Institute Marks 4)

We provide ample opportunities for self learning. The college not only focuses in honing their skills with classroom teaching but also stresses in learning outside the classroom. Institute provides infrastructure, technical guidance and financial assistance to support following activities.

Our students are facilitated and encouraged to participate in various national and international competitions through technical societies wherein they gain hands on experience in the process. These societies are an amalgam of students belonging to all the four streams. Hence they gain multi-disciplinary experience and spirit of teamwork.

1. Student council organizes annual inter-collegiate technical festival, CRESCENDO – platform for students to showcase and share innovative ideas and nurture design skills. An annual inter-collegiate technical paper presentation and project competition, TECHNOMANIA is organized with the objective of inculcating research aptitude among students. In addition, workshops and training programs are regularly arranged to familiarize students with specific skill sets and advanced technologies.
2. Student council organizes annual inter-collegiate technical festival, CRESCENDO – platform for students to showcase and share innovative ideas and nurture design skills. An annual inter-collegiate technical paper presentation and project competition, TECHNOMANIA is organized with the objective of inculcating research aptitude among students. In addition, workshops and training programs are regularly arranged to familiarize students with specific skill sets and advanced technologies.
3. Experts from diverse fields are invited to share their experience and knowledge in their respective field, which in turn stimulates student interest and help them in honing their skills accordingly.
4. Cultural and sports activities provide avenues for developing their talents in arts, sports and encourages team spirit. Moreover, it enhances their interpersonal, leadership and communication skills leading to overall holistic development of students.
5. The institute library with its rich collection of catalogs, journals, magazines as well as access to e-Journals, e-books, IIT-B library institute membership facilitates self-learning.
6. The institute provides wired internet facility on all computers in the laboratories apart from campus wide Wi-Fi connectivity to mobile devices. This helps students to enhance their subject knowledge and apprise themselves about latest developments in the field of interest.

7. The institute is an NPTEL local chapter, facilitating faculty and students to register and pursue NPTEL courses

9.5 Career Guidance, Training, Placement (10) (Institute Marks 8)

Career Guidance

- Career Guidance sessions are conducted regularly for the final and pre- final year students by the respective departments and Training and placement cell.
- In addition to the above, guidance sessions are conducted for GRE, GMAT and CAT examinations.
- Redemptorist Fathers conduct a full day session on value education and career orientation.
- Our alumni students are invited to provide career guidance to their juniors.

Training

Training is provided to the students to develop their skills for a successful career. Soft skill development and technical skill development training is imparted to the students.

Soft skills:- Expert HR professionals from reputed corporates are invited to conduct sessions on key aspects like attitude, emotional quotient, presentation etc.

Technical Skills:- To enhance the technical skills of the students, aptitude test training and mock tests are conducted by professionals. Respective departments and technical societies organize workshops/courses on latest technologies to enhance technical skills.

Placement

The Trusties, Principal, HODs, TPO along with final year student representatives formulate the placement policies for the academic year.

Placement activity generally starts in the month of July and continues till the month of April in the subsequent year. Official invites are sent to reputed companies. Upon their confirmation / interest in participation, the students who are eligible and interested register for the drive. The further process depends on the visiting company policy.

Placement activities are coordinated by the placement committee consisting of Training and Placement Officer, Faculty placement coordinators and Student Placement coordinators.

9.6 Entrepreneurship (5) (Institute Marks 4)

E-Cell started with the intension of inculcating entrepreneurship culture among the students- to look into avenues which can generate marketable business ideas, motivate and groom them to translate these ideas into start-ups and expose them to the experiences of young entrepreneurs. E-Cell organizes various activities and events to promote the above objectives – Industrial/Company visits, two events in our technical festival, Crescendo, Master-Chef CRCE- food stalls exhibition, Internship fair, Idea generation workshop.

Events of 2013-14

- Master-Chef
- Crescendo Events
- Consultants Hat - In this event, participants visited various companies and were asked to write a report about the company. The reports were judged jointly by the respective company representatives and a faculty member.

Events of 2014-15

- Crescendo Events
- Master-Chef

Events of 2015-16

- Fun-E - Mock marketing
- The Entrepreneur's Code – virtual business set-up
- Two events in technical festival,Crescendo
- Idea Generation
- Master-Chef
- Agnel stock market
- Consultant Hat
- Mumbai startup fest – Flagship event initiated by SED to promote entrepreneurship culture among students in Mumbai colleges.
- Entrepreneurship fair
- Internship and Career Expo by TEDx chapter offering opportunities to intern with start-ups.

Events of 2016-17

- Global Entrepreneurship Hangout – Live Video Conference between students and CEOs and entrepreneurs from international and domestic start-ups
- Two events in technical festival, Crescendo
- Fantasy Premier League – Choose the football team with the best potential to win
- Mumbai startup fest – A national level event with SED where early start-ups present their ventures to some of the top national and international entrepreneurs to compete for funding.
- Internship and Career Expo by TEDx chapter offering opportunities to intern with start-ups.
- Master-Chef

9.7 Co-curricular and Extra-curricular Activities (10) (Institute Marks 8)

Co-curricular activities:

Our students are engaged in a number of co-curricular and extra-curricular activities. Besides Student council, the institute has active Student Chapters of IEEE, IEEE-WIE, CSI, SAE, ASME, E-Cell, ITSA, Codelabs, NSS, TEDx, Rotractclub, Debsoc and Literary Club. All these chapters contribute significantly for the development of competitiveness, social interaction, leadership skills, presentation capabilities, self-responsibility and additional domain knowledge through collaborative learning.

The Institute has a gymkhana with indoor sports facilities like table tennis, carom, chess etc. Outdoor sports like volley ball, basket ball, rink football, box cricket are held in the in-campus sports ground. For games like cricket, football, badminton and athletics, we hire professional grounds in the vicinity.

Our auditorium SAMVAD is used for conducting cultural events like debate, TEDx talks, skits, and other intra-college solo and group activities. For inter collegiate contests and annual day function, we hire professional auditoriums with higher capacity.

Our students are engaged in many social activities like water harvesting, Road Building, Tree plantations, Teach one each one, blood donation camps, social awareness street shows,

seminars etc. through NSS chapter and Rotaract club.

Our students have organized themselves under self-elected student council which reports to Dean – Student Affairs. Apart from the activities of the student chapters, Student council organizes the institute level programs :

1. Annual Cultural Festival – Euphoria: It is an annual inter & intra collegiate cultural event of the institute.
2. Fr. Conceicao Rodrigues Memorial Debate: It is a national level program where student teams display their logical and oratory skills by debating on current issues.
3. Fragmag: Annual magazine published by student council which provides, to its stakeholders, an opportunity to exhibit their creativity.
4. Annual Sports: Sport activities include various intra and inter college events which enable students to enhance their team spirit and sportsmanship.
5. Crescendo – Annual technical festival: An inter collegiate festival with events like Robotics, LAN gaming, coding contests, Technical Paper Presentation, laser tag, junkyards wars etc.
6. Our students participate and secure commendable rankings in several prestigious national and international level technical competitions:
    a. SAE BAJA – An All Terrain Vehicle (ATV) design, build and fabricate competition.
    b. SAE AERO – An international competition to design and build UAV.
    c. ROBOCON – A national level competition to design robots for the given problem statement.
    d. TGMC – A national level software project competition organized by IBM
    e. CODEVITA – A national level codethon organized by TCS Ltd
    f. E-yantra Ideas competition –Robotics contest Initiated by MHRD under IIT Bombay
    g. Enduro Student India - All Terrain Vehicle (ATV) design, build and fabricate competition
    h. Go Kart Design Challenge – National level competition to design and fabricate Go Kart vehicles
    i. SUPRA – National level competition to build Formula Racing Cars and race, held at Buddh International circuit
    j. Smart India Hackathon – Organized by Union HRD ministry
    k. Code for Good - A national level codethon organized by J P Morgan

CRITERION 10	Governance, Institutional Support and Financial Resources	120

10.Governance, Institutional Support and Financial Resources (120) (Institute Total Marks 93)

10.1 Organization, Governance and Transparency (40) (Institute Total Marks 31)

10.1.1 State the vision and mission of the Institute (5) (Institute Marks 5)

Vision:

"Moulding Engineers who can build the nation"

Fr. Conceicao Rodrigues College of Engineering (CRCE) will be a center of Excellence in Engineering Education, moulding engineers with state-of-the art technologies, innovative skills and human values matching with the growing expectations of the corporate and the society and thus play an effective role in nation building.

Mission:

- Create an excellent scholastic ambience for students and faculty, by providing facilities with state-of-the-art technologies and continuously updating based on the needs of user organizations.
- Attract, develop and retain teaching faculty of academic excellence, dedication and commitment.
- Design the academic administration system to ensure effective teaching-learning process facilitating participation from students and teachers and enabling continuous improvement through evaluation and feedback.
- Provide avenues for holistic development of students to become competent engineers with interpersonal skills, leadership qualities and social concern.
- Maintain economic discipline; continuously work for optimal utilization of resources and resource generation through consultancy to make quality education affordable.
- Inculcate ethical values and integrity by observing fairness and transparency in all dealings

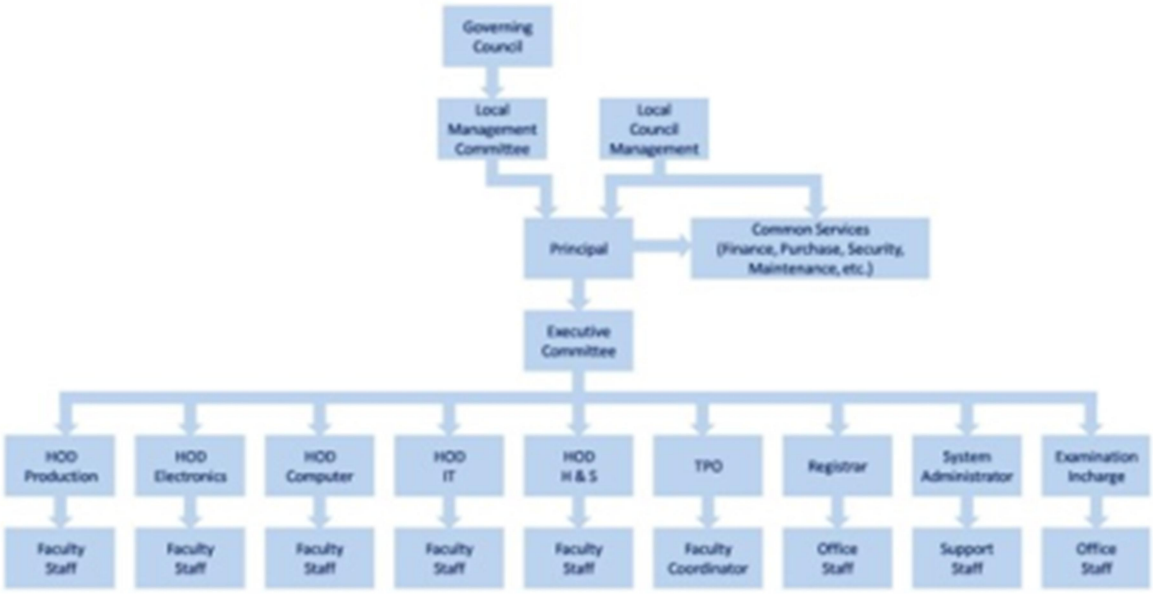
10.1.2 Governing body, administrative setup, functions of various bodies, service rules, procedures, recruitment and promotional policies (10) (Institute Marks 8)

Governing body

Fr. Conceicao Rodrigues College of Engineering was established by the Society of St. Francis Xavier, Pilar, a Public and Charitable Trust. The college is managed by a Governing Council (as per AICTE norms), Local Management Committee (as per the guidelines of Mumbai University) and Local Council Management (as per the guidelines of the Trust).

Administrative Set Up

Figure 10.1.2 illustrates the administrative set up of the institute.



Sr. No.	Committee	List of Members	Functions and Responsibilities	Frequency of meetings	Attendance
1.	**Governing Council**	**1.** Chairman **2.** Management's Nominee (05 in number) **3.** State Government's Nominee **4.** Nominee of Vice Chancellor, University of Mumbai **5.** DTE's Nominee **6.** AICTE's Nominee **7.** Board of	The Governing Council sets guidelines for academic and administrative policies. It reviews and recommends Program initiatives, Annual budget, infrastructural development, admissions, results, placements, Staff development activities and Staff	Once in a year	11

		Apprentice ship's Nominee **8.** Faculty Member (02 in number) **9.** Principal/ Member Secretary	position		
2.	**Local Management Committee**	**1.** Chairman **2.** Nominee of the Managem ent (02 in number) 3. Elected Represent ative of the Teachers (03 in number) 4. Elected Represent ative of the Non-Teaching Staff (01in number) 5. Principal / Member Secretary	LMC ensures that college administration adheres to the norms of the Mumbai University. It reviews the activities of the college and recommends measures for better functioning	Twice in a year	Full
3.	**Local Council Management**	**1.** Local Superior of Agnel Technical Complex, Bandra **2.** Director of Agnel Technical Complex, Bandra **3.** Office	LCM meets to process and approve the proposals from different units of the complex. All major policy decisions are reviewed and approved by LCM	Once in a month	Full

		Administrator (Fr. Agnel Ashram) **4.** Financial Controller **5.** Principal (Fr. CRCE) **6.** Principal (Agnel Technical College) **7.** Principal (Fr. Agnel School)			
4.	**Executive Committee**	1. Principal 2. Head of Department (05 in number) 3. Dean (Student's Affairs) 4. Training and Placement Officer (TPO) 5. Examination-in-Charge 6. Registrar	EC meets to formulate and analyze policies pertaining to academics, student activities, placement, budget allocations and general administration	Once in a month	Full

Service Rules, procedures, recruitment, and promotional policies:

Institute is affiliated to University of Mumbai. The rules and regulations regarding service rules, recruitment and promotions are laid down by the University. Institute adheres to the rules such as Service Rules, Vacation rules, LTC Rules etc.as per the norms of the University of Mumbai and Government of Maharashtra.

The Qualification and Eligibility criteria, Recruitment procedure and Promotion policies for the teaching staff are as per the norms of University of Mumbai and the AICTE and that for the

non-teaching staff are as per the norms of DTE and Government of Maharashtra.

The Service Rule books are kept in the library for reference. The year of publications of the service rules for teaching staff is 1993 and for non-teaching is 1985.

10.1.3 Decentralization in working and grievance redressal mechanism (10) (Institute Marks 8)

As illustrated in Figure 10.1.2, a well-defined hierarchy is maintained in the Institute as follows:

Head of Departments: All heads of the departments are responsible for managing the respective departments as well as for collective decisions taken by the Executive Committee. The Head of Departments are as follows:

- Dr. Deepak Bhoir (Department of Electronics Engineering)
- Dr. Sunil Surve (Department of Computer Engineering)
- Mr. D.S.S. Sudhakar (Department of Production Engineering)
- Mrs. Jagruti Save (Department of Information Technology)
- Mrs. Sundary Prabavarthy (Department of Humanities and Science)

Also, following faculty are entrusted with additional responsibilities:

- Training and Placement Officer: Mr. Mahesh Sharma
- Dean (Student activity): Dr. V.S. Bilolikar.
- Examination In charge: Dr. V. S. Jorapur
- Dean (Academics): Dr. Sapna Prabhu.
- Dean (R & D): Dr Bhushan Patil.

Grievance redressal system:

1. Staff Grievance Redressal Cell constituted as per guidelines of Mumbai University comprises of Chairperson, two members from teaching faculty and two members from the non-teaching staff. The cell is empowered to study the issues pertaining to individual inconveniences and complaints. The Staff Member makes a written representation of the grievance which is forwarded through Principal to Staff Grievance Redressal Cell. The cell investigates the said case and submits a report of the same with their recommendation to the Principal within 30 days from the receipt of the complaint.
2. The college has Internal Complaints Committee for sexual harassment of women at work place (Precaution, Prohibition and Redressal) Act 2013 as per the directives of the University of Mumbai. This committee comprises of the Presiding officer (teaching staff), two members from the teaching staff and one member belonging to the NGO.
3. A Student Grievance redressal committee is constituted that comprises of the Convener (teaching faculty), two members (teaching staff) and two members (non-teaching staff) to ensure transparency in admission with the paramount objective of preventing unfair practices and to provide a mechanism to address grievances of students, parents and others.

As on date, no complaints have been received

10.1.4 Delegation of financial powers (10) (Institute Marks 6)

Management / Director will initiate the process of annual budgeting by calling a meeting of Principal, HODs, Unit Heads and Financial Controller. Financial controller updates members about the supporting documents required for each of the requirements and the procedure to

be followed in preparing the budget proposal.
HODs will discuss the departmental preferences with departmental faculty members and invite proposal(s) from lab in-charges for the next financial year.
HODs will scrutinize the proposal(s) received based on the need and merit of the proposal. A consolidated statement of department proposal is submitted to the Principal by HODs and other units.
Principal with the Accounts in-charge will make the institute level consolidated budget Proposal, based on the proposals received from the departments and making provisions for institute level purchases, student activities etc. and place the same in front of the Executive Committee. Funds for capital procurement are allocated as per requirement and priority.
After incorporating the amendments, based on the discussions in the Executive Committee, Principal will submit the final budget proposal from the institute to the Trustees.
The Financial Controller and trustees, if required, will seek clarifications form the Principal. The institute budget is merged into the budget of the Fr. Agnel Technical complex, Bandra and presented to the LCM for approval. The same is then put up for approval to the Governing Council of the Society.
Final approved sanctioned budget is communicated to the Principal.
In case of any expenditure escalating beyond the approved budget, special approval may be sought form LCM, for escalation up to 10%, beyond which approval by the Governing Council of the Society is required.
Principal can utilize the contingency fund for urgent extra ordinary/special requirements.
Head of Departments are empowered to procure items as per the approved budget by following the set purchase procedures. They are also empowered to take decision on sponsorship, department level maintenance etc.

10.1.5 Transparency and availability of correct/unambiguous information in public domain (5) (Institute Marks 4)

- A well delegated, democratic system has been developed and followed, to facilitate decision making which ensures transparency through participation and involvement of all stakeholders.
- Admission, administration, placement, recruitment, infrastructure and faculty details are available on website.
- Students are provided with the information about policies, rules, processes related to admission, examination and others (such as anti-ragging notification, grievance redressal notification etc.) on the college web site.
- Mandatory disclosure is made available on website as per AICTE norms.

10.2 Budget Allocation, Utilization, and Public Accounting at Institute level (30) (Institute Total Marks 23)

Total Income at Institute level: for CFY, CFYm1, CFYm2 and CFYm3

For CFY (2016-17)

Total Income 15,95,48,921.49				Actual Expenditure (till 31-03-2017) 16,87,92,189.25			
Fee	**Govt**	**Grant(s)**	**Other Sources (Specify)**	**Recurring including salaries**	**Non-recurring**	**Special Projects / Any other, specify**	
14,12,25,897.00	0.00	0.00	1,83,23,024.49	16,42,37,540.65	45,54,648.60	0.00	

For CFY (2015-16)

Total Income 14,47,61,653.25				Actual Expenditure (till 31-03-2016) 16,04,67,550.96			
Fee	**Govt**	**Grant(s)**	**Other Sources (Specify)**	**Recurring including salaries**	**Non-recurring**	**Special Projects / Any other, specify**	
12,82,06,050.00	0.00	0.00	1,65,55,603.25	15,29,84,692.15	74,82,858.81	0.00	

For CFYm1 (2014-15)

Total Income 13,89,98,448.22				Actual Expenditure (till 31-03-2015) 15,44,72,415.80			Total no. of students: 1241
Fee	**Govt**	**Grant(s)**	**Other Sources (Specify)**	**Recurring including salaries**	**Non-recurring**	**Special Projects / Any other, specify**	**Expenditure per student**
12,22,08,029.00	0.00	0.00	1,67,90,419.22	14,81,46,350.55	63,26,065.25	0.00	1,24,474.15

For CFYm2 (2013-2014)

Total Income 11,34,12,557.46				Actual Expenditure (till 31-3-2014) 11,99,45,469.09			Total no. of students: 1235
Fee	**Govt**	**Grant(s)**	**Other Sources (Specify)**	**Recurring including salaries**	**Non-recurring**	**Special Projects / Any other, specify**	**Expenditure per student**
10,79,54,340.00	0.00	0.00	54,58,217.46	11,56,65,622.27	42,79,846.82	0.00	97,121.84

(Rupee)

Items	Budgeted in CFY 2017-18	Budgeted in CFY 2016-17	Actual expenses in CFY 2016-17	Budgeted in CFYm1 2015-16	Actual expenses in CFYm1 2015-16	Budgeted in CFYm2 2014-15	Actual expenses in CFY2 2014-15	Budgeted in CFYm3 2013-14	Actual expenses in CFYm3 2013-14
Infrastructure Built-up	12,12,500.00	39,93,100.00	5,24,278.00	25,70,000.00	2,01,275.00	15,00,000.00	58,53,730.75	20,00,000.00	4,12,671.00
Library	3,40,000.00	4,00,000.00	3,24,949.00	4,00,000.00	2,96,945.31	5,00,000.00	2,83,519.50	5,00,000.00	3,90,873.32
Laboratory Equipment	3,15,25,000.00	76,17,000.00	37,05,421.00	70,40,000.00	69,84,638.50	80,00,000.00	1,88,815.00	75,00,000.00	34,76,302.50
Laboratory Consumables	13,50,000.00	12,50,000.00	14,86,641.72	10,00,000.00	11,43,616.53	11,00,000.00	10,06,399.54	9,00,000.00	7,14,967.30
Training and Travel	6,00,000.00	7,50,000.00	10,73,926.00	7,00,000.00	9,23,570.00	8,10,000.00	5,36,871.00	5,50,000.00	4,48,254.00
Maintenance and spares	62,50,000.00	45,00,000.00	1,06,39,568.37	42,00,000.00	72,14,107.03	38,00,000.00	32,91,804.20	42,50,000.00	55,06,412.55
R & D	15,00,000.00	20,00,000.00	13,90,722.00	20,00,000.00	10,60,043.00	12,00,000.00	9,34,666.00	12,00,000.00	8,62,363.00
Teaching and Non-teaching Salary	11,79,25,000.00	11,06,25,000.00	10,63,20,363.52	11,18,00,000.00	10,24,34,767.45	9,30,50,000.00	10,24,25,022.75	8,66,10,000.00	8,86,36,860.10
Miscellaneous expense	1,00,000.00	1,00,000.00	73,712.00	1,00,000.00	72,690.00	1,00,000.00	92,844.00	1,00,000.00	81,731.80
Others	2,57,05,000.00	2,36,75,000.00	4,32,52,607.64	2,37,16,000.00	4,01,35,898.14	1,59,30,000.00	3,98,58,743.06	1,77,75,000.00	1,94,15,033.52
Total	**18,65,07,500.00**	**15,49,10,100.00**	**16,87,92,189.25**	**15,35,26,000.00**	**16,04,67,550.96**	**12,59,90,000.00**	**15,44,72,415.80**	**12,13,85,000.00**	**11,99,45,469.09**

10.2.1 Adequacy of budget allocation (10) (Institute Marks 7)

As per the prevailing industry best practices, approximately 10% of planned expenditure is earmarked for improving the infrastructure of the Institute and approximately 20% is used for recurring expenses of the institute. Rest of the fund is for salary expenditure.

In the preparation of the budget, indicative figures are collected from past 3 years expenses which serve as the base line for the said head of expense. Inflation adjustments and expenses expected to be incurred for proposed developmental activities are also considered while preparing the budget.

Head of the Departments, in consultation with faculty members, propose departmental budget for the financial year. Principal, in consultation with faculty in-charges for various activities, prepares estimated expenses for student activities.

The recurring expenditure is estimated and budgeted accordingly. The non recurring component of the budget is prepared in consultation with head of the departments based on the needs of the departments. The funds for non-recurring procurement are allocated as per requirement and priority.

The proposed budget is discussed in the Executive Committee meeting and finalized. Budget is further submitted to Local Council Management, Local Management Committee and Governing Council for approval.

The budgeted and actual expenditure figures of previous years indicate that the budgetary provisions for different heads were sufficient.

Average budget allocated for past three years is as follows:

Items	Percentage of the budget
Infrastructure built-up	2.57769
Laboratory Equipment	4.91705
Library	0.25821
Laboratory Consumables	0.80692
Training and travel	0.48415
Maintenance	2.90491
R & D	1.29107
Miscellaneous	15.3476
Salary	71.4124

10.2.2 Utilization of allocated funds (15) (Institute Marks 11)

The budgetary allocations are done after due deliberation on the future needs of the institute. The recurring expenses budget is invariably met every year. Capital investments are done in tandem with the infrastructure readiness. A part of the capital budget is kept aside as carry forward resources for procuring equipments and machineries, as and when the infrastructure is in place. A well-defined procurement process, in-line with the industry best practices, is in place.

10.2.3 Availability of the audited statements on the institute's website (5) (Institute Marks 5)

Audited statement is made available on website.

10.3 Program Specific Budget Allocation, Utilization (30) (Institute Total Marks 23)

Total Budget at program level: for CFY, CFYm1, CFYm2 and CFYm3

For CFY

Total Budget 31,02,000		Actual Expenditure (31st March 2017) 22,07,050		Total no. of students: 229
Non recurring	***Recurring***	**Non-recurring**	**Recurring**	**Expenditure per student**
17,30,000.00	***13,72,000.00***	**13,79,575.00**	**8,27,475.00**	**9638**

For CFYm1 (2015-16)

Total Budget **3137000**		Actual Expenditure (31st March 2016) 3285212		Total no. of students: 224
Non recurring	**Recurring**	**Non-recurring**	**Recurring**	**Expenditure per student**
1300000	**1837000**	**1226137**	**2059075**	**14667**

For CFYm2 (2014-15)

Total Budget 2278375		Actual Expenditure (31st March 2015) 2081603		Total no. of students: 236
Non recurring	**Recurring**	**Non-recurring**	**Recurring**	**Expenditure per student**
905000	**1348125**	**971985**	**1109618**	**8821**

For CFYm3 (2013-14)

Total Budget 2473125		Actual Expenditure (31st March 2014) 2900597		Total no. of students: 231
Non recurring	**Recurring**	**Non-recurring**	**Recurring**	**Expenditure per student**
1125000	**1348125**	**1458649**	**1441948**	**12557**

Items	Budgeted in CFY	Actual expenses in CFY	Budgeted in CFYm1	Actual expenses in CFYm1	Budgeted in CFYm2	Actual expenses in CFY2	Budgeted in CFYm3	Actual expenses in CFYm3
Laboratory Equipment	1630000	1298337	1200000	1151900	780000	901105	1000000	1341880
Software	0	0	0	0	0	0	0	19050
Laboratory Consumables	335000	158990	320000	272492	245000	257755	255000	162302
Maintenance and spares	200000	61684	560000	1156765	560000	371538	460000	842562
R & D	350000	347680	500000	265011	220625	233667	296875	215591
Training and travel	82000	41799	77000	57432	69000	58586	80000	41790
Miscellaneous expenses	505000	298560	480000	381611	403750	258951	381250	277421
Total	3102000	2207050	3137000	3285211	2278375	2081602	2473125	2900596

10.3.1 Adequacy of budget allocation (10) (Institute Marks 8)

Every lab is upgraded once in five-six years. Latest hardware is procured to upgrade lab. Budget allocated in such a manner that at least two labs are developed every two years. Also, we use open source software to fulfill academic requirements. Faculty members and lab staff with help of students develop labs. Past two years, we have added network security, cloud computing facilities. So, we do not need to budget for software.

As shown in above table sufficient funds are budgeted for lab development. On an average 10 lakhs are budgeted for lab up-gradation. Budget for non-recurring expenses are allocated sufficiently

10.3.2 Utilization of allocated funds (15) (Institute Marks 15)

Budgeted funds are used for specified purpose in the same financial year. As shown in table below, there is small variation in budgeted and actual expenditure. As mentioned above, we procure latest hardware configuration. Therefore, expenditure is more than actually budgeted.

Table 1: Expenditure for hardware procurement

Year	Budgeted Amount (In Lacs)	Actual Expenditure(In Lacs)
2016-17	16.3	12.98
2015-16	12	11.52
2014-15	7.8	9.01
2013-14	10	13.42

10.4 Library and Internet (20) (Institute Total Marks 16)

10.4.1 Quality of learning resources (hard/soft) (10) (Institute Marks 8)

The Library is situated at the first floor of the college building. The total number of books available is approximately 31063, which are from renowned publishers like Tata McGraw Hill, Pearson education, Wiley student edition, Addison Wesley, Springer, Dreamtech etc .The library has approximately 49 Indian National Journals. Every year there is an addition of approximately 720 books, 240 new titles and 130 new editions. The textbooks and reference books prescribed by University syllabus are available in adequate numbers. Some of the books are available in electronic format. Moreover, additional titles by reputed publishers are available for each subject. Journalsand magazines from respective fields of engineering are subscribed either in print or electronic formats and is a very good source of information on latest and advanced technologies.

Accessibility to students:

Institute provides open book access facility to students.

The students have web online access of books catalogues through college web site under online library catalogue.

Students can access DELNET through the worldwide web at http//delnet.nic.in. Students can access IEEE Xplorer and ASME Digital library.

K-Hub Virtual Library - Engineering collection has been added to the E- resources. The number of resources incorporated in the K – Hub engineering collection are:

E- Journals: 1574

E- Books: 906

E- Magazines: 14

Case Reports: 229

Conference proceedings: 13

Institute provides book bank facility

Institute has IIT (Bombay) library membership for students and staff.

Support for self-learning

- Availability of digital library content: NPTEL Video courses/E- journals with 220 CD's are available for 27 subjects (Production, Electronics, Computer, Information Technology) Reference books, handbooks, conference and workshop proceedings are available.
- The institute is an NPTEL local chapter, facilitating faculty and students to register and pursue NPTEL courses. Students get 50% concession in registration fees, while registering through the institute log in. On line access for NPTEL courses is provided in the library.
- Reference books, handbooks, workshop and conference proceedings are available.
- Library facilities are extended beyond college hours for self-study.

10.4.2 Internet (10) (Institute Marks 8)

- Name of Internet provider: Tata, Reliance, Om-Sai
- Available bandwidth: 30 MBPS
- Wi-Fi availability: yes (on each floor of the college building)
- Internet access in labs, classrooms, library and offices of all departments: yes
- Security arrangements:
  1. Cyberrom - firewall used for internet security.
  2. Proxy server

Annexure I

(A) Program Outcomes (POs)

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 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 of 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 the 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 work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognized 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) Program Specific Outcomes (PSOs)

PSO1 Apply fundamental computer science knowledge to solve real world problems.

PSO2 Design and Implement software systems of varying complexity in multidisciplinary scenarios that meet specified requirements with appropriate consideration to architectural, algorithmic and security aspects.

Declaration

The head of the institution needs to make a declaration as per the format given below:

This Self-Assessment Report (SAR) is prepared for the current academic year and the current financial year on behalf of the institution.
I certify that the information provided in this SAR is extracted from the records, and to the best of my knowledge, is correct and complete.
I understand that any false statement/information of consequence may lead to rejection of the application for the accreditation for a period of three or more years.
I also understand that the National Board of Accreditation (NBA) or its sub-committees will have the right to decide on the basis of the submitted SAR whether the institution should be considered for an accreditation visit.
If the information provided in the SAR is found to be wrong during the visit or subsequent to grant of accreditation, the NBA has the right to withdraw the grant of accreditation and no accreditation will be allowed for a period of next three years or more and the fee will be
forfeited.
I undertake that the institution shall co-operate the visiting accreditation team, shall provide all desired information during the visit and arrange for the meeting as required for accreditation as per the NBA's provision.
I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations and notifications in force as on date and the institute shall fully abide to them.

I solemnly affirm and agree to the above mentioned information/ facts.

Head of the Institute
Name : Dr. Srija Unnikrishnan
Designation : Principal

Signature :

Seal of The Institution :

Place : Mumbai
Date : 29-08-2017