National Board of Accreditation

SELF ASSESSMENT REPORT (SAR)

UNDERGRADUATE ENGINEERING PROGRAMS (TIER-II)

Department of Computer Engineering

Fr. Conceicao Rodrigues College of Engineering,
Bandra (W),

Mumbai-400050

www.frcrce.ac.in

INDEX

Part A Institutional Information

1 Name and Address of the Institution

FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING,
FR. AGNEL ASHRAM BANDSTAND, BANDRA (W)

2 Name and Address of Affiliating University

UNIVERSITY OF MUMBAI

3 Year of establishment of the Institution:

1984

4 Type of the Institution:

☐ University	☐ Autonomous
☐ Deemed University	☑ Affiliated
☐ Government Aided	

5 Ownership Status:

☐ Central Government	☑ Trust
☐ State Government	☐ Society
☐ Government Aided	☐ Section 25 Company
☐ Self financing	☐ Any Other (Please Specify)

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

Name of the Institution	Year of Establishment	Programme 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 Multi-purpose School	2001	School	Ambernath, Thane
Fr. Agnel Junior College	1982	Junior College	Ambernath, 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	2013	Engineering College	Goa
Fr. Agnel Vidyankur School	2002	School	Pune
Fr. Agnel Polytechnic	1994	Polytechnic	Noida
Fr. Agnel School	1979	School	Gautam Nagar, NOIDA
Fr. Agnel Polytechnic	1994	Polytechnic	Gautam Nagar, NOIDA

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

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Bachelor of Engineering in Computer Engineering	UG	1991	1991	60	Yes	120	Granted accreditation for 3 years for the period (specify period)	2017	2020	Yes	4

Sanctioned Intake for Last Five Years for the Bachelor of Engineering in Computer Engineering	
Academic Year	**Sanctioned Intake**
2022-23	120
2021-22	120
2020-21	120
2019-20	120
2018-19	60
2017-18	60

8 Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Computer Engg.

9 Total number of employees in the institution:

A. Regular* Employees (Faculty and Staff):

Items		CAY (2022-23)		CAY*m*1 (2021-22)		CAY*m*2 (2020-21)	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	19	20	20	21	22	22
	F	32	32	31	31	31	31
Faculty in Maths, Science &Humanities	M	8	8	7	7	7	7
	F	2	2	2	2	2	2
Non-teaching staff	M	35	35	36	35	38	36
	F	11	11	11	11	11	11

B. Contractual* Employees (Faculty and Staff):

Items		CAY (2022-23)		CAY*m*1 (2021-22)		CAY*m*2 (2020-21)	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	2	2	--	--	--	--
	F	--	--	4	4	--	--
Faculty in Maths, Science &Humanities	M	--	--	--	--	--	--
	F	--	--	2	2	1	1
Non-teaching staff	M	2	2	2	2	2	2
	F	--	--	--	--	--	--

10 Total number of Engineering Students:

Engineering and Technology- UG	☑ Shift1	☐ Shift2
Engineering and Technology- PG	☑ Shift1	☐ Shift2
Engineering and Technology- Polytechnic	☐ Shift1	☐ Shift2
MBA	☐ Shift1	☐ Shift2
MCA	☐ Shift1	☐ Shift2

Engineering and Technology- UG Shift-1

Item	CAY 2022-23	CAY*m*1 2021-22	CAY*m*2 2020-21
Total no. of boys	1033	1004	970
Total no. of girls	291	271	279
Total no. of students	1324	1275	1249

Engineering and Technology- PG Shift-1

Item	CAY 2022-23	CAY*m*1 2021-22	CAY*m*2 2020-21
Total no. of boys	1	2	1
Total no. of girls	1	1	1
Total no. of students	2	3	2

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 & teachers; 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:

Head of the Institution	
Name	Dr. Surendrasingh Rathod
Designation	Principal
Mobile No.	9920228275
Email ID	principal.crce@fragnel.edu.in

☑ **NBA Coordinator, If Designated**

Name	Dr. Sunil Surve
Designation	Professor
Mobile No.	9167635546
Email ID	surve@fragnel.edu.in

PART B: Criteria Summary

Criteria No.	Criteria	Total Marks	Institute Marks
1	VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES	60	56.00
2	PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES	120	109.00
3	COURSE OUTCOMES AND PROGRAM OUTCOMES	120	117.00
4	STUDENTS' PERFORMANCE	150	132.50
5	FACULTY INFORMATION AND CONTRIBUTIONS	200	154.40
6	FACILITIES AND TECHNICAL SUPPORT	80	69.00
7	CONTINUOUS IMPROVEMENT	50	46.00
8	FIRST YEAR ACADEMICS	50	46.18
9	STUDENT SUPPORT SYSTEMS	50	44.00
10	GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES	120	117.00
	Total	**1000**	**890**

Part B

1 **VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES (60)** Total Marks 56.00

1.1 State the Vision and Mission of the Department and Institute (5) Total Marks 5.00

Institute Marks : 5.00

<table>
<tr><td>Vision of the institute</td><td colspan="2">"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.</td></tr>
<tr><td>Mission of the institute</td><td colspan="2">• 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 & teachers; 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.</td></tr>
<tr><td>Vision of the Department</td><td colspan="2">To be a center of excellence in Computer Engineering education that will produce self-motivated, and globally competent individuals through holistic development.</td></tr>
<tr><td rowspan="4">Mission of the Department</td><td>Mission No</td><td>Mission Statements</td></tr>
<tr><td>M1</td><td>Build state-of-the-art infrastructure that can accommodate cutting-edge technology and is constantly updated in response to the needs.</td></tr>
<tr><td>M2</td><td>To emphasize experiential learning to pursue academic excellence and inculcate research aptitude through high-quality research publications.</td></tr>
<tr><td>M3</td><td>Enable the students to foster innovative ideas in pace with emerging technologies.</td></tr>
</table>

	M4	Encourage faculty members to pursue higher education/research and stay abreast with the latest technology.

1.2 State the Program Educational Objectives (PEOs) (5) Total Marks 5.00

Institute Marks: 5.00

PEO No.	Program Educational Objectives Statements
PEO1	Apply Computer Science principles and techniques to develop engineering projects in order to achieve client business objectives and/or to conduct fruitful research.
PEO2	Demonstrate excellent interpersonal skills and leadership qualities in their workspace and in the society.
PEO3	Successfully work in diverse and multidisciplinary teams, communicate effectively, and find innovative solutions to problems.

1.3 Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (10) Total Marks 10.00

Institute Marks: 10.00

The Vision, Mission, and PEOs are published at

1. Department web page (http://frcrce.ac.in/comp/)
2. Department floor lobby
2. Notice boards
3. Laboratories
4. Staff room
5. Student journals
6. Project Log Book
7. During the Induction Program of FE
8. During awareness programs conducted for students regarding NBA, Vision, Mission, etc.
9. Social media handles like Linkedin, lnstagram, etc.
10. E-mail communication

Apart from this, Mission, Vision, and PEOs are disseminated to all the stakeholders of the programs through faculty meetings, student induction program, student awareness lectures, Department Advisory Board meetings, etc.

1.3 State the process for defining the Vision and Mission of the Department, and PEOs of the program (25) Total Marks 24.00

Institute Marks: 24.0

Process to define Vision and Mission of the Department:

Vision and mission statement is defined through direct engagement of all the faculty members, the Department Quality Assurance Cell (DQAC), and the Department Advisory Board (DAB). Also, few students and alumni are included in the process directly or indirectly. Following process is used for defining Vision, Mission of the department and PEOs of program:

- Programme Coordinator (PC) initiates the process of defining/redefining statements at the appropriate time (end of the lifecycle of statements).
- At the beginning, DQAC drafts vision and mission statements. The institute's vision and mission statement, current statements (in second iteration onwards). career accomplishments of the graduates, strengths, and weaknesses of the department, graduate exit surveys, requirements of industries, feedback from various stakeholders, etc. are considered for the formulation of statements.
- PC organizes faculty meetings to discuss the draft. DQAC refines the statements using the feedback in the faculty meeting.
- PC organizes meetings of various stakeholders to discuss refined statements or takes feedback through surveys of selected students, alumni, and other stakeholders like industry representatives, parents, management, etc. DOAC refines the statements based on the inputs.
- The refined statement is discussed in the DAB meeting. Based on the feedback, DQAC finalizes the vision and mission statements.

The process of Defining/redefining the vision and mission is shown in the figure 1.4a.

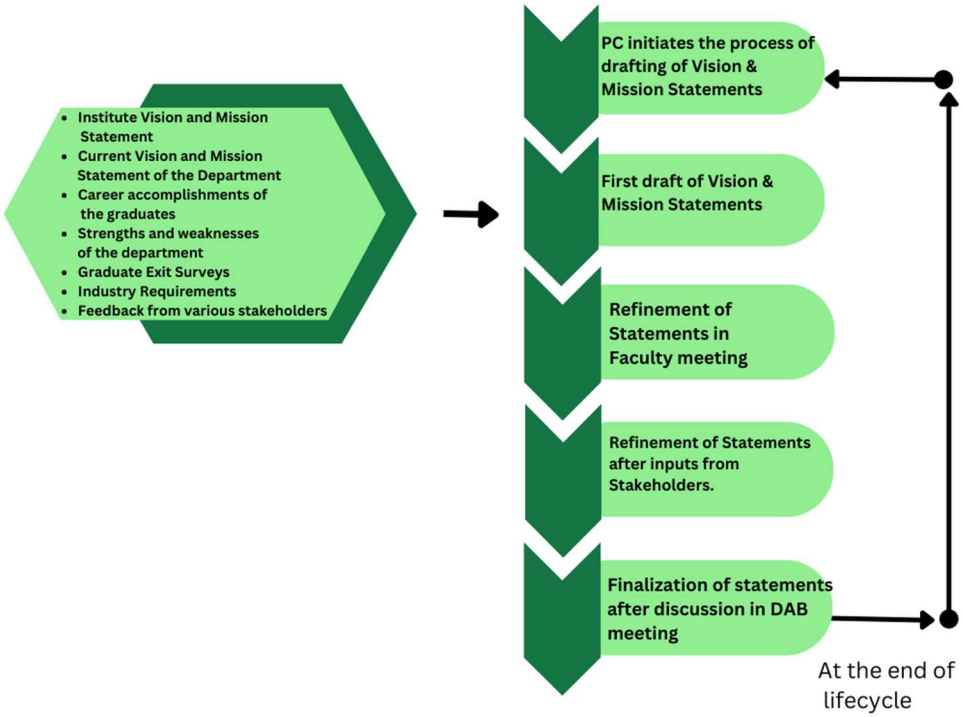


Figure 1.4a: Process for Defining/redefining the Vision-Mission of the Computer Department.

Process to define Program Educational Objectives (PEO) of Program:

Vision and mission statement is defined through direct engagement of all stakeholders. The process of defining PEO statements is as follows:

- Programme Coordinator (PC) initiates the process of defining/redefining PEO statements at the appropriate time (end of the lifecycle of statements).
- At the beginning, DOAC drafts programme educational objectives. The department vision and mission statement, current statements (in the second iteration onwards), graduate attributes, review of PEOs of other institutes, etc. are considered for the formulation of statements.
- DQAC organizes the faculty meeting to discuss the draft version. DQAC refines the statements as per the suggestions in the meeting.
- DQAC organizes meetings of various stakeholders to discuss refined statements or takes feedback through surveys of selected students, alumni, and other stakeholders like industry
- representatives, parents, management, etc. DOAC refines the statements based on the inputs.
- DAB discusses the refined statement DAB meeting. Based on the feedback, DQAC finalizes the vision and mission statements.

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

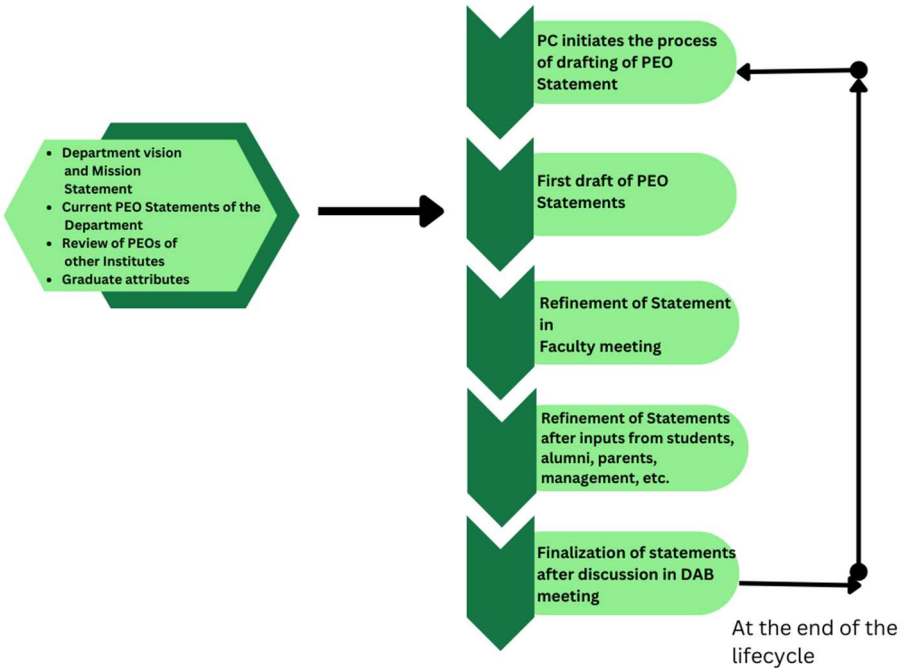


Figure 1.4b: Process *for Defining/redefining of* Program *Educational Objectives.*

1.1 Establish consistency of PEOs with Mission of the Department (15) Total Marks 12.00

Institute Marks : 12.00

The Mission of the department is:

- **M1:** Build state-of-the-art infrastructure that can accommodate cutting-edge technology and is constantly updated in response to the needs.
- **M2:** Emphasize experiential learning and holistic development in order to pursue academic excellence, and inculcate research aptitude through high-quality research publications
- **M3:** Enable the students to foster innovative ideas in pace with the emerging technologies
- **M4:** Encourage faculty members to pursue higher education/research and stay abreast with the latest technology.

PEOs of Program:

- **PE01:** Apply Computer Science principles and techniques to develop engineering projects in order to achieve client business objectives and/or to conduct fruitful research.
- **PE02:** Demonstrate excellent interpersonal skills and leadership qualities in their workspace and in the society.
- **PE03:** Successfully work in diverse and multidisciplinary teams, communicate effectively,

and find innovative solutions to problems.

Mapping Justification:

M1-PEO1:

Students need to learn cutting-edge technologies to develop projects which will achieve business objectives or carry out research work. The infrastructure needs to be developed and upgraded to support cutting-edge technologies. The good infrastructure facilitates students to improve their skills and apply principles for the development of applications. Thus, PEO1 supports M1.

Cutting –edge technologies include ML, Blockchain, NLP, Deep Learning, Robotics (Honors) Cyber security, Quantum Computing, IoT etc.

M2-PEO1:

Students are encouraged to use computational techniques in their project. It suggests that educational approach not only includes theoretical knowledge but also practical, hands-on experience (experiential learning). Additionally, it emphasizes holistic development of student.

M3-PEO1:

Students require to learn emerging technologies to develop projects using innovative ideas. The good infrastructure facilitates students to learn emerging technologies to conduct fruitful research. Thus, PEO1 supports M3.

M4-PEO1:

Faculty members are required to work on research projects continuously in their careers. Faculty members stay abreast with the latest technologies that they use in their research work. Thus, PEO1 supports M4.

M2-PEO2:

Through project-based learning i.e. experiential learning, students develop interpersonal skills and leadership qualities. Further students publish their research work along with the faculty mentor in high-quality journals. Thus, PEO2 strengthens M2.

M3-PEO2:

By emphasizing the role of interpersonal skills and leadership students can achieve the goal of fostering innovative ideas by using emerging technologies while developing solutions for real world challenges.

M1-PEO3:

The good infrastructure facilitates students to improve their skills and apply innovative ideas for the development of projects by working in diverse and multidisciplinary teams. Thus, PEO3 strengthens M1.

M2-PEO3:

Working on Projects in diverse and multidisciplinary teams enables the holistic development of the students. Students learn to develop innovative solutions to real-life problems and may publish their

work in high-quality journals along with their faculty mentor. Thus, PEO3 strengthens M2.

M3-PEO3:

While working in diverse and multidisciplinary teams to develop projects, students use innovative ideas and learn emerging technologies. Thus, PEO3 will strengthen M3.

M4-PEO3:

Encouraging faculty members to pursue higher education can help students acquires specialized knowledge and skills making them better equipped to contribute effectively in multidisciplinary teams and find innovative solutions to problems.

PEO Statements	M1	M2	M3	M4
Apply Computer Science principles and techniques to develop engineering projects in order to achieve client business objectives and/or to conduct fruitful research.	3	2	2	1
Demonstrate excellent interpersonal skills and leadership qualities at their workspace and in society.	--	2	2	--
Successfully work in diverse and multidisciplinary teams, communicate effectively, and find innovative solutions to problems.	1	3	2	1

2 PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES (120)

Total Marks 109.00

2.1 Program Curriculum (20)

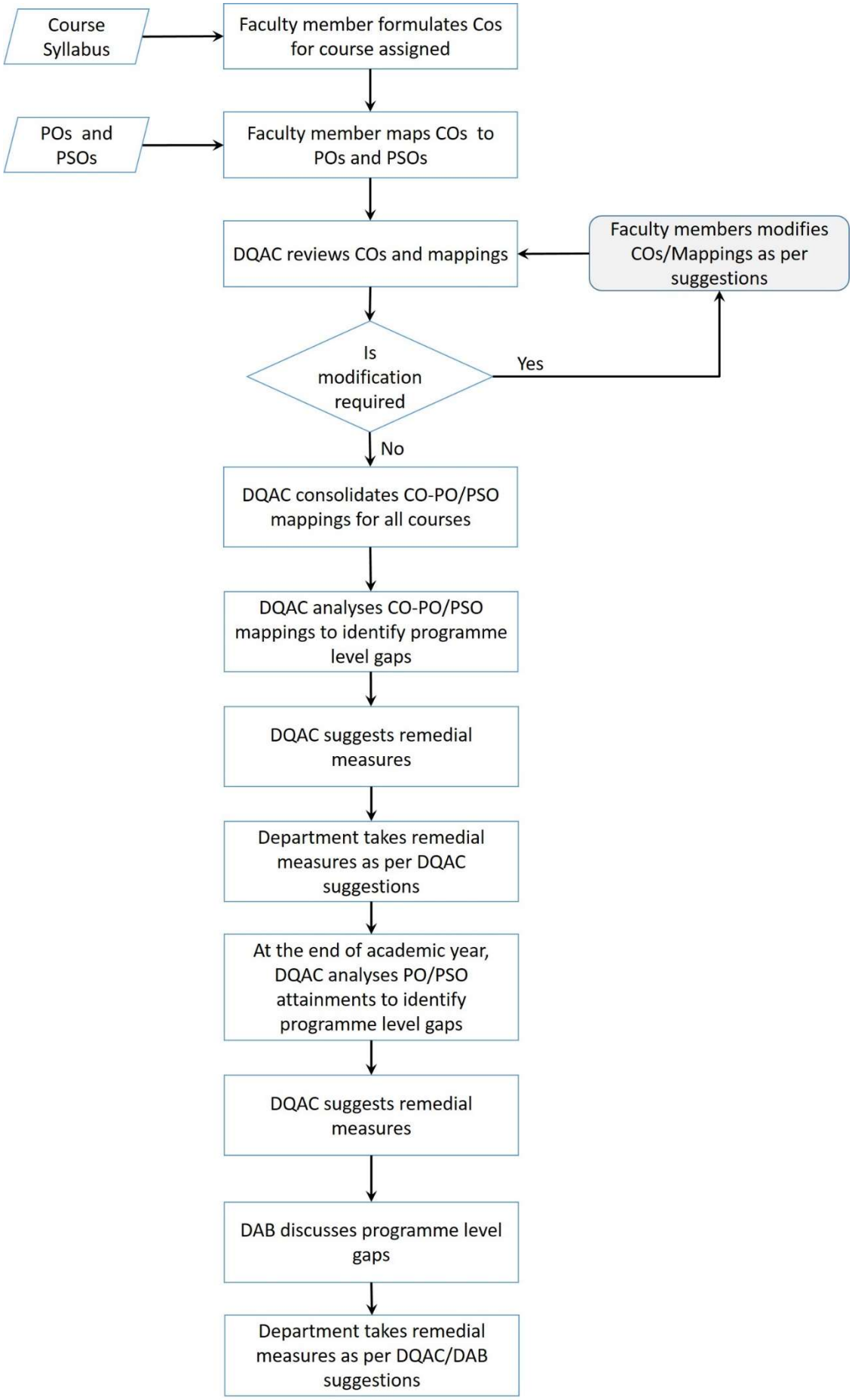
Total Marks 17.00

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 Annexurel. Also mention the identified curricular gaps, if any (10)

Institute Marks: 9.00

We use following process to identify extent of compliance of university curriculum for attaining the Program Outcomes and Program Specific Outcomes.

- Faculty member formulates Course Outcomes (COs) and maps to POs and PSOs for the course assigned before commencement of the semester and submits to DQAC for review.
- Department Quality Assurance Committee (DQAC) reviews COs and mappings and gives feedback to concerned faculty member.
- Faculty member refines or changes COs and mappings if required based on DQAC feedback.
- DQAC consolidates all CO-PO/PSO mappings of all courses and analyses the mappings to identify deficiencies in the University curriculum and program level gap (i.e., a course needs to be included in curriculum or any activities need to be organized).
- Faculty members analyze course syllabus to identify course level gap (i.e., a particular topic needs to be included in a course).
- Faculty members uses their observations and/or looks for future data to identify course/curriculum gap if any.
- Faculty member takes remedial measure if any course level gap is identified.
- DQAC analyzes PO and CO attainment levels to identify program level curriculum gap or course level gap.
- DQAC suggests remedial measures to bridge program level gaps
- Further, PC takes feedback from Departmental Advisory Board (DAB), Experts from Industry, Academia to figure out the gap in the curriculum for attaining POs and PSOs.


Course Syllabus
Faculty member formulates Cos for course assigned
POs and PSOs
Faculty member maps COs to POs and PSOs
DQAC reviews COs and mappings
Faculty members modifies COs/Mappings as per suggestions
Is modification required
Yes
No
DQAC consolidates CO-PO/PSO mappings for all courses
DQAC analyses CO-PO/PSO mappings to identify programme level gaps
DQAC suggests remedial measures
Department takes remedial measures as per DQAC suggestions
At the end of academic year, DQAC analyses PO/PSO attainments to identify programme level gaps
DQAC suggests remedial measures
DAB discusses programme level gaps
Department takes remedial measures as per DQAC/DAB suggestions

Identified Gaps:

2021-2022: (Program Level Gaps)

1. Syllabus does not include any course which addresses concerns related with professional engineering practices used to evaluate societal, health, safety, legal, and cultural issues.
2. None of the essential course addresses understanding the impact of professional engineering solutions on society and the environment, as well as the need for sustainable development to an adequate extent.
3. Essential curriculum does not cover ethics and accountabilities for engineering practices.
4. The Programme includes minimal multidisciplinary approach and coverage of financial management.
5. Internship which promotes life-long learning is not emphasized in the curriculum.

2021-2022: (Course Level Gaps)

1. Concepts of 'Data Mining Trends and Research frontiers' in course of Data warehousing and Mining.
2. Concepts of 'Development of Platform Independent Mobile Application' in course of Web Technology.
3. Introduction to" Fundamentals of Digital Communications and Tools for digital communications" in course of Computer Networks.
4. Introduction to "Distributed Database and database architectures concepts" in course of Database Management Systems.

2020-2021: (Program Level Gaps)

1. Syllabus does not include any course which addresses concerns related with professional engineering practices used to evaluate societal, health, safety, legal, and cultural issues.
2. None of the essential course addresses understanding the impact of professional engineering solutions on society and the environment, as well as the need for sustainable development to an adequate extent.
3. The essential curriculum does not cover ethics and accountabilities for engineering practices.
4. The Programme includes minimal multidisciplinary approach and coverage of financial management.
5. Internship which promotes life-long learning is not emphasized in the curriculum.

2020-2021: (Course Level Gaps)

1. Concept of 'NP-Complete problems and Approximation algorithms' in the course of Advance Algorithms
2. Concept of 'Machine Learning Using Python' in the course of Python Programming
3. Concept of 'Model of Distributed Computing -CORBA' in the course of Distributed Computing
4. Concept of 'Project and Innovative Experiment' in the course of Mobile Communication and Computing.

2019-2020: (Program Level Gaps)

1. Syllabus does not include any course which addresses concerns related with professional engineering practices used to evaluate societal, health, safety, legal, and cultural issues.
2. None of the essential course addresses understanding the impact of professional engineering solutions on society and the environment, as well as the need for sustainable development to an adequate extent.
3. The essential curriculum does not cover ethics and accountabilities for engineering practices.
4. The Programme includes minimal multidisciplinary approach and coverage of financial management.

5. Internship which promotes life-long learning is not emphasized in the curriculum.

2019-2020: (Course Level Gaps)

1. Concepts of Database System Architectures identified in course of Database Management Systems.
2. Introduction to latest trends in web technologies identified in course of Web Technology.
3. Design and development of Android applications in course of Mobile Computing and Communications.
4. Concepts of "NP-Complete problems and Approximation algorithms' in course of Advance Algorithms.

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

Institute Marks: 8.00

In order to bridge the gap and attain programme outcomes more effectively, the Computer department has provided inputs and suggestions to the Affiliating University regarding curricular gaps and the possible addition of new content/add-on courses in the curriculum. The Department of Computer Engineering has sent letters regarding this to the Board of Studies (BOS) over the time. Further, Faculty members are involved in Syllabus setting committee. They give inputs in the syllabus setting meetings.

The various steps are taken to overcome identified gaps. Few steps are as mentioned below:

- Additional content is taught in class to bridge the course level gaps.
- Guest lectures are arranged to bridge the course level gaps.
- Student development workshops, seminars are organized to bridge program level gaps.
- Various curricular and co-curricular activities are organized to bridge program level gaps.
- Students are encouraged to participate in various technical and non-technical competitions.
- Students are encouraged to become members of various councils, project teams, etc.

2021-22

S. No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	% of students	Relevance to POs, PSOs
1	Only few students have a solid foundation of theoretical and practical knowledge of science and mathematics, which they correlate and apply in their projects and	Students motivated to participate in online courses	01/07/2021	Swayam, NPTEL, MOOCs etc	10	PO1

	research.					
2	Need to improvise research-based attitude among the students	Algoholic 1.0	19/09/2021	Prof. Roshni Padate, Asst. Prof. CRCE	23	PO8, PO9, PO10, PO11, PO12, PSO1,
3	Promote more students to find solutions to societal and environmental issues.	Webinar on Design Thinking, Critical Thinking and Innovation Design	22/10/2021	Mr. Kashyap Sheth, Member of IIC	17	PO3
4	Need to encourage more students towards innovations, research based projects, technical paper writing and IPR	CRESEND O -lnnolette 2022	05/03/2022	Internal Faculty members of CRCE	5	PO4
5	Requirements of more students exposure towards advanced tool and resources usage to meet the industry standards and research.	Workshop on Game Development using Java and Unreal Engine	04/12/2021	Mr. Santo Sunny, Mr. Sahil Bane, Ms. Charmi Tank Students of CRCE	10	PO5
6	None of the course addresses the need for sustainable development	Marine Ecosystem by United Way Mumbai	13/10/2021	United Way Mumbai	14	PO7,PO8
7	Need to promote ethics and accountabilities for engineering practices among the students	Webinar on Start-up and Legal & Ethical Steps	28/04/2022	Prof. Swati Ringe, Asst. Prof. CRCE	13	PO8,PO9,PO10,PO11,PO12
8	There is an exigency of effective communication	Fr.Conceicao Rodrigues Memorial	08/10/2021	Brig. Ajit Shrivastav	4	PO8, PO9,PO10

	skills among the students.	Debate				
9	Internship which promotes life-long learning is not emphasized in the curriculum	Internship Expo 2022	29/01/2022	Participating companies; (1) Umeed NGO, (2) lprime, (3) Think technologies, (4) Reveation Labs (5) WEQ technologies and many more	54	PO6, PO8, PO9, PO12
10	Syllabus doesn't cover "Data Mining Trends and Research frontiers"	Guest Lecture on "Role of Analytics from Placement perspective"	18/10/2021	Kartick Hariharan,- Quantiphi Analytics Solution Private Limited Designation:M achine Learning Engineer	80	PO12,PSO2
11	Syllabus lacks "Development of Platform Independent Mobile Application"	Guest Lecture on "Developme nt of Mobile App using Flutter"	24/02/2022	Mr. Surya Pratap Shahi, Full stack developer	60	PO5, PO12
12	Fundamentals of Digital Communications not covered in the syllabus	Lecture on "Coverage of Multiplexing techniques, Data rates and Channel Utilization"	28/07/2021	Prof. Merly Thomas, Associate Professor, Fr. CRCE,.	90	PO1
13	Familiarity with Networking Tools	Guest Lecture on "Packet Analysis using	28/09/2021	Dr. Vaishali Gaikwad, Assoc. Prof.	85	PO6

		Wireshark"				
14	Syllabus lacks concepts of "Distributed Database and database architectures concepts" to cover concepts of DWM	Lecture and Lab session on Distributed Database and database architectures concepts	19/04/2022	Dr. Sujata Deshmukh, Associate Professor, Fr.CRCE	65	PO12, PSO2
15	High demand to improve interpersonal skills among students to work as a team.	Unscript Hackathon	22/01/2022	Gaurav Sen, lnterviewready, Founder	100	PO5, PO6, PO7, PO8, PO9, PO10, PO11,PO12

2020-21

S. No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	% of students	Relevance to POs, PSOs
1	Only few students have a solid foundation of theoretical and practical knowledge of science and mathematics, which they correlate and apply in their projects and research.	Students motivated to participate in online courses	01/07/2020	Swayam, NPTEL, MOOCs etc	13	PO1
2	NP-Complete problems and Approximation algorithms	Guest Lecture	13/10/2020	Prof. Archana Kale, TSEC, Bandra, Mumbai	100	PO2, PSO1
3	Machine Learning Using Python	Guest Lecture	01/05/2021	Mr. Yogendra Yatnalkar, Machine Learning Engineer, Quantiphi Analytics	85	PO1 , PO5, PSO1
4	Model of Distributed Computing -CORBA	Case Study and Seminar	17/04/2021	Students of the class	55	PO12
5	Real time application w.r.t. Mobile Computing and Communications	Mini projects	02/04/2020	Prof. Monali Shetty, Asst. Prof. CRCE	100	PO1, PO3, PO5, PO9, PO10, PSO1

2019-20

S. No	Gap	Action Taken	Date-Month-Year	Resource Person with Designation	% of students	Relevance to POs, PSOs
1	Only few students have a solid foundation of theoretical and practical knowledge of science and mathematics, which they correlate and apply in their projects and research.	Students motivated to participate in online courses	01/07/2019	Swayam, NPTEL, MOOCs etc	12	PO1
2	Design and development of Android applications	Mini Projects and Lab experiment	24/09/2019	Prof. Monali Shetty Assistant Professor, Fr. CRCE.	100	PO1, PO3, PO5, PO9, PO10, PSO1
3	Lack of concepts of "Introduction to Database System Architectures" to understand DWM	Lecture and Lab session	13/10/2019	Dr. Sujata Deshmukh, Associate Professor, Fr.CRCE	60	PO12, PSO2

2.2 Teaching - Learning Processes (100) Total Marks 92.00

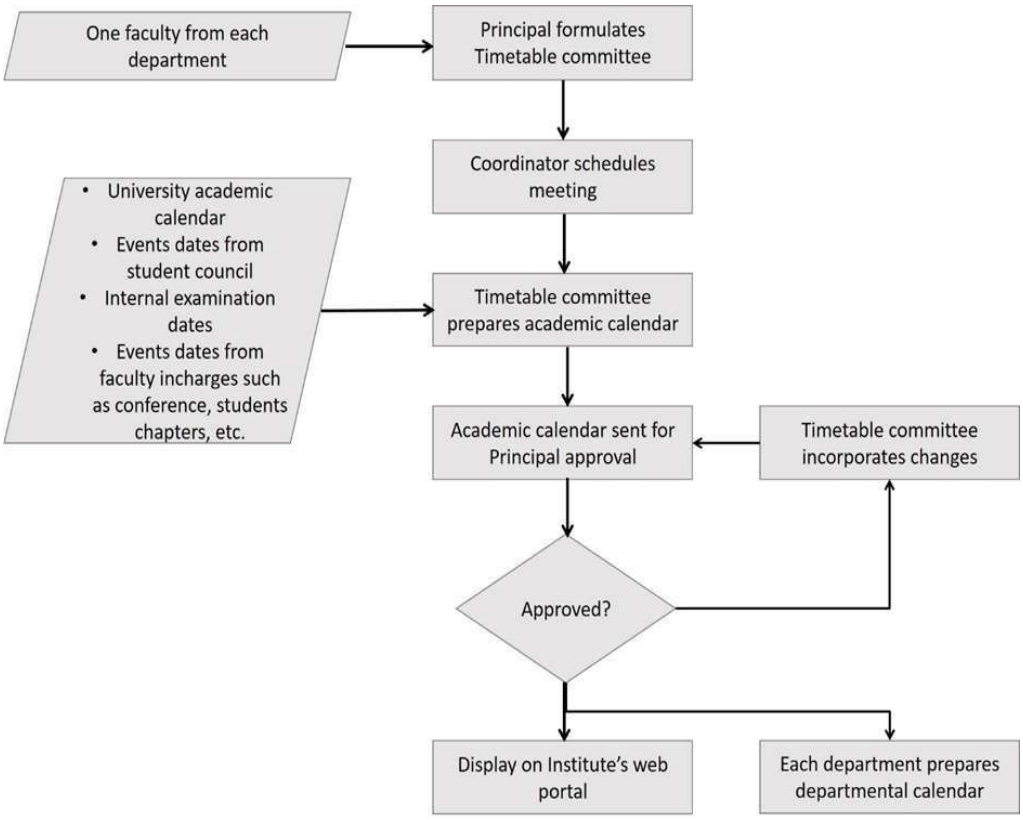
2.2.1 Describe processes followed to improve quality of Teaching & Learning (25)

Institute Marks: 23.00

The Institute follows various processes to ensure delivery of good quality of Teaching learning. The processes are listed below.

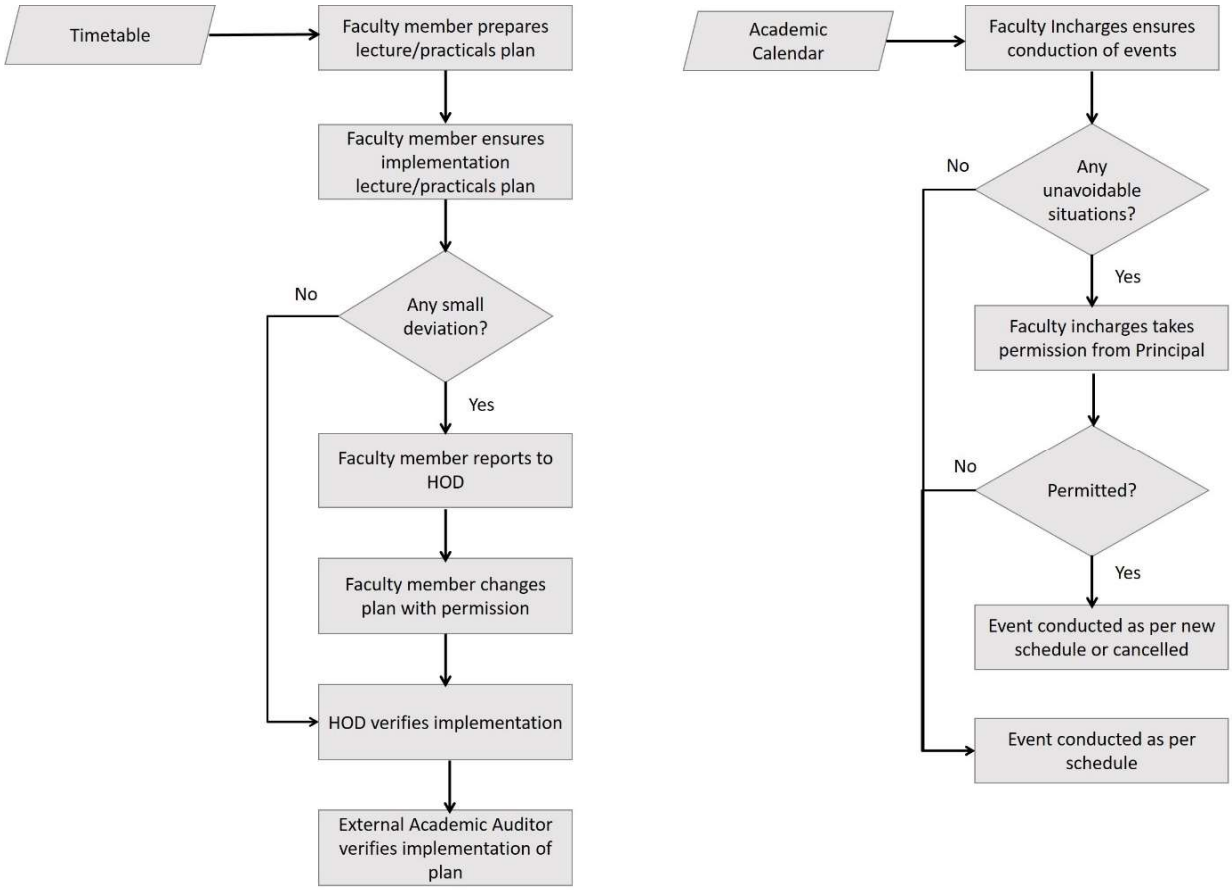
A. i. Process to prepare academic calendar

1. Principal formulates Timetable committee which includes at least one member from each department.
2. Coordinator schedules meeting for preparation of time table and academic calendar.
3. Timetable committee collects data from concerned faculty in charges, office, examination cell, etc.
4. Timetable committee prepares Institute academic calendar.
5. Coordinator sends academic calendar to Principal for approval.
6. If any suggestions given by Principal, timetable committee modifies the academic calendar.
7. Coordinator ensures publication of academic calendar on Institute portal.
8. Each department prepares departmental calendar based on Institute academic calendar.



A. **ii. Process to ensure adherence to Academic Calendar**

- Faculty member plans lectures/practicals based on the time table.
- Faculty members ensures conducting lectures/practicals as per the plan
- In case of small deviation, faculty member reports to Head of the Department and with permission, faculty member make the changes in the plan.
- External academic auditor verifies the implementation of the lecture/practical plan.
- Faculty in-charges ensure conduction of the events as per the academic calendar.
- In case of unavoidable circumstances, faculty in-charges make the changes in the event date with prior permission of the principal
- Head of the Department verifies the implementation of lecture/practical plan.



B. Use of Various Instructional Methods and Pedagogical Initiatives

All our faculty members make the best efforts to deliver the subject courses assigned to them, using the 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 delivery and assessment methods as follows:

- Lesson plan
- The content of teaching
- Teaching strategies
- Various 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 member explains the Course learning objectives and encourages the 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. Following are the various instructional methods used 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/on-line

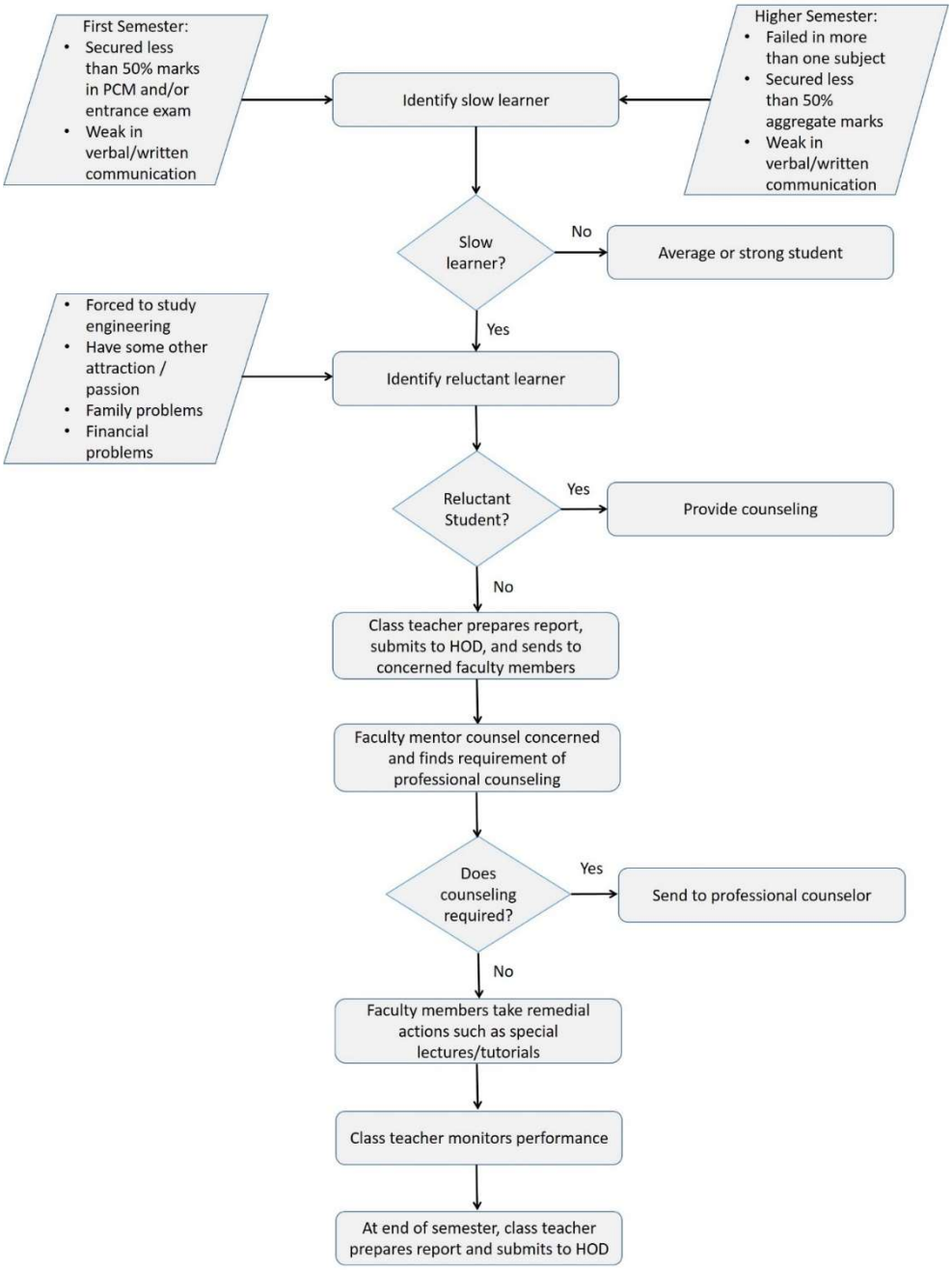
videos (eg. NPTEL) to enhance the quality of lecture delivery. It helps students to visualize complex engineering concepts and theories.

- **Real-life examples:** Emphasis is given not only on explaining various engineering concepts and theories but also on the real-life implications and industrial applications. It helps students to understand the concepts they learn 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 in depth 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
    - train students 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.
- **Online Course Creation:** During the Covid -19 pandemic, few teachers videotaped their lectures on YouTube as web-based instruction. Some of the Faculty have also have created YouTube Links for some of the subjects like TCS
- **Virtual Teaching platform:** Virtual teaching Platform used are Google Meet, Google classroom. Lecture materials, Assignments, Quiz questions, recorded lecture video links are posted on the Google classroom. Many faculty members are using Google Classroom, Moodie for organising and managing online classes.
- **Study of Research Papers:** Faculty shares the research papers in their respective subject domain, and the students read the paper, present their findings through presentations.
- This activity improves scientific literacy, critical thinking abilities, and knowledge of scientific facts among students.
- **Flipped Classroom:** Some of the faculty use Flipped classroom activity for few Modules of the subject. In this activity Faculty shares the lecture videos with the students on Google classroom in advance and assess the students' knowledge, understanding on the Topic, through Quiz, Group discussion. This Inculcates the habit of self- reasoning, self-exploration of the subject Topic in the students.
- **Animations:** Some of the faculty use Animations in their subject Presentations. Animation deepens visual understanding much more than traditional diagrams, makes it possible to turn abstract concepts and processes into something tangible and relatable.

C. i. **Process to identify weak learners**

- Beginning of first semester. identify weak learners using following criteria:
    - < 50% aggregate marks in PCM
    - < 50 percentiles in entrance exam
    - Weak in verbal and/or written communication (by observations)

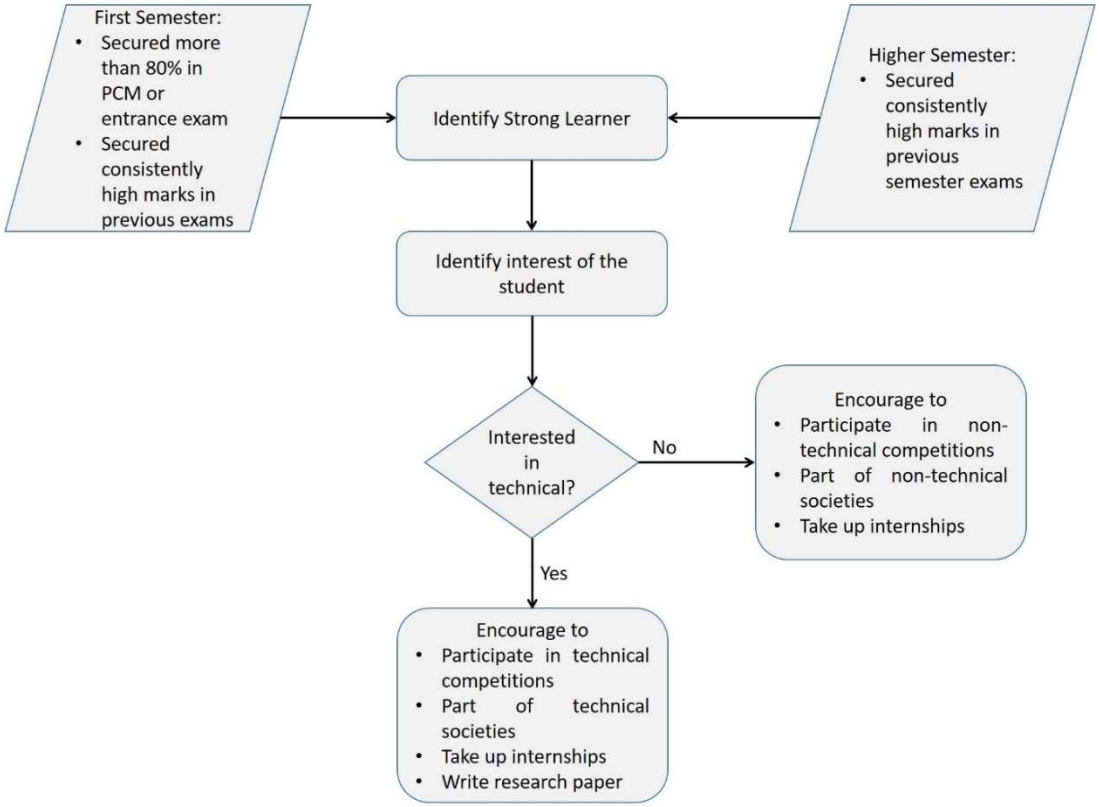
- Identify whether the student is a reluctant student or not by finding following information:
  - Forced to study engineering
  - Have some other attractions
  - Have some family problems
  - May have to work and study
- From second semester onwards, identify weak learners using following criteria:
  - Failed in more than one subject
  - Secured < 50% aggregate marks in previous examination
  - Weak in verbal and/or written communication
- The class teacher prepares the report of the weak students and submits to HOD.
- HOD sends report to concerned faculty members.
- Subject teachers identify the weak students in respective course and takes remedial actions.
- Organize special classes/tutorials for weak students
- Monitor progress of the weak students
- Provide counseling if required
- If student performance does not improve, find the reason and identify the different method to improve learning



C . II. **Process to identify Strong Learners**

- Identify strong students based on following criteria:
  - During first semester:
    - Secured more than 80% in PCM or entrance exam
    - Secured consistently high marks in previous exams
  - At higher semester
    - Secured consistently high marks in previous semester exams
- Identify interest of the students
- If student is interested in technical aspects, encourage student to
  - Participate in technical competitions
  - Part of technical societies
  - Take up internships
  - Write research paper

- If student is interested in non-technical aspects, encourage student to
  - Participate in non-technical competitions
  - Part of non-technical societies
  - Take up internships



D. Every classroom is provided with an LCD projector and 24 x 7 Internet connection. The faculty member can use a blackboard/ LCD projector judiciously during the lecture. Faculty members strive to enhance the learning experience for students by

- Ensuring quality of the content taught in classroom sessions.
- Observing individual students understanding during classroom sessions through question/ answers sessions, quizzes. Inculcating the habit of reasoning in students which help them in continuous self-learning.
- Faculty of the department have taken few initiatives in Making classroom sessions interactive and maintaining the environment

E. Lab Experience:

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

- Keeping updated laboratory manuals which provides proper guidelines for conducting experiments
- 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 the observation analyses results
- Regularly updating the softwares used in respective laboratories to ensure quality of

experiments.

- Project based learning: some of the faculty ensures that students do Mini Projects as a part of Laboratory requirement. This engages the students in solving a real-world problem, answering a complex question. In return, students acquire a deeper knowledge of the subject through active exploration of real-world challenges and problems.

F. 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 calculations.

G. 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 at the Institute level and the summary of student's 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 student's feedback are discussed in the faculty performance appraisal.

Mid-Semester feedback: From the academic year 2016-17, a mid-semester feedback is taken from a set of students each class to gauge the progress of each course by the Head of the Department and the feedback is used for corrective action, if required.

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)

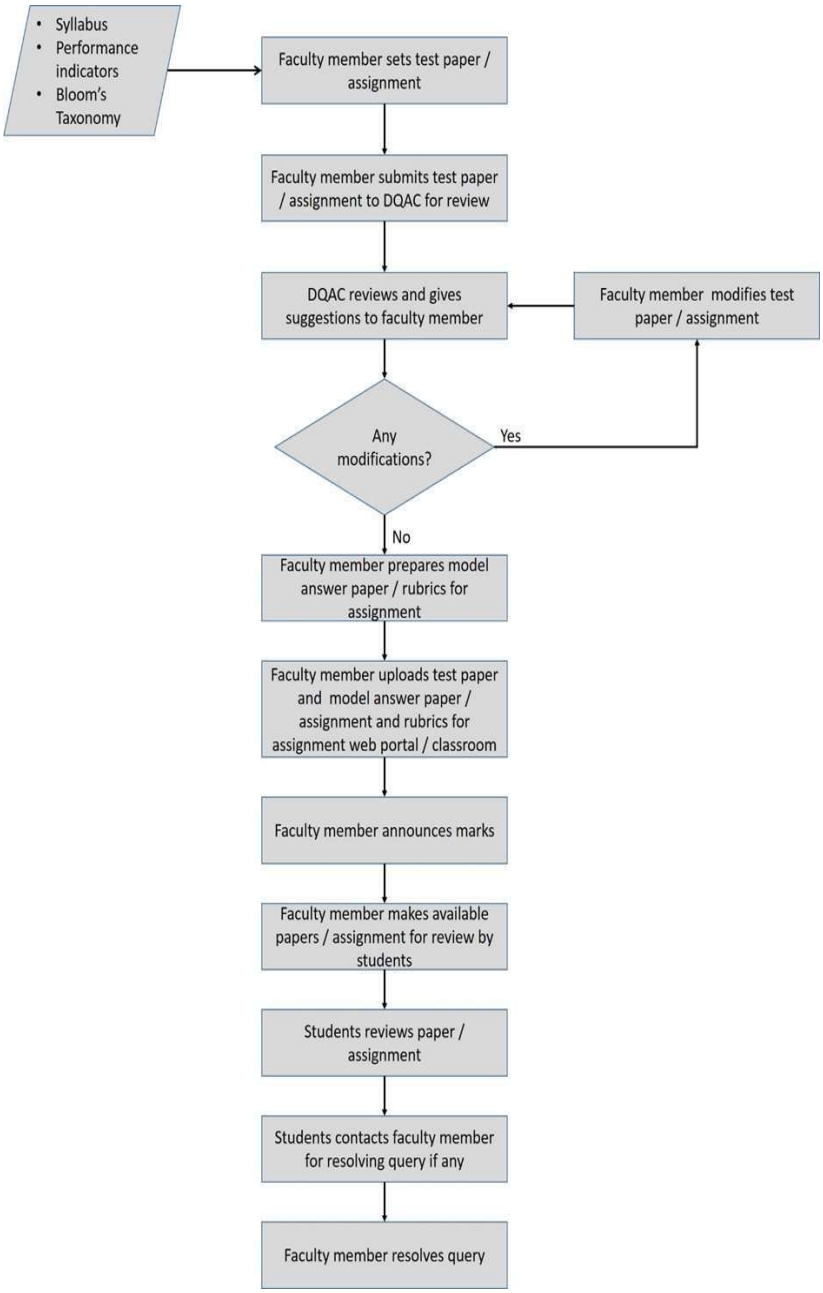
Institute Marks: 18.00

Following process is followed to ensure quality question papers and assignments along with their evaluation:

- Faculty member sets unit test paper/assignment based on syllabus considering performance index, Bloom's taxonomy, COs, etc.
- Faculty member submits test paper/assignment to DQAC for review.
- DQAC reviews test paper/assignment and gives feedback to faculty member.
- Faculty member prepares model answer paper and marking scheme for test paper, and rubrics for assignment.

- Faculty member uploads test paper/assignment and model answer paper on web portal/classroom.
- Faculty member corrects test paper/assignment as per the marking scheme/rubrics.

- Faculty members announce marks and makes available answer paper/assignment for review by students.
- Student contact faculty member if they have any query.
- Faculty member clears the query raised by student.



2.2.3 Quality of student projects (25)

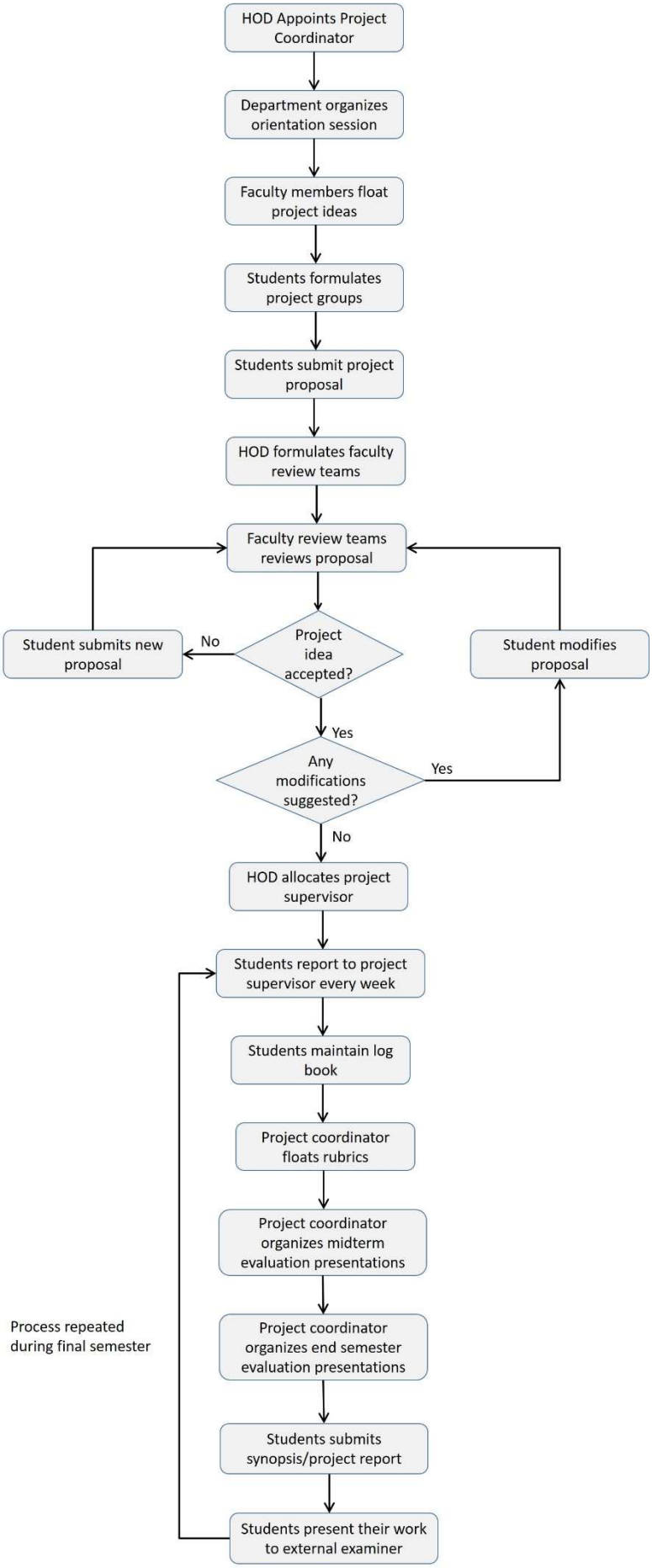
Institute Marks: 23.00

We follow rigorous process to maintain the quality of the projects. The faculty members float project ideas. Also, students are having freedom to propose their project. During project selection process, emphasis is given to different criteria such as idea, feasibility, cost, etc. Also, rubrics are prepared for selection, evaluation and given to students in advance. In preparation of rubrics, the weightage is given to various factors such as ethics, communication (presentation, report writing, etc.), environment, etc.

Projects are mapped with POs and PSOs based on the tools used for assessment, rubrics prepared for assessment. Assessment of project is done continuously as mentioned the process below.

Following is the process followed for life-cycle of project.

1. The Head of the Department appoints the project coordinator.
2. At the start of semester, the department organizes orientation session for project selection.
3. Faculty members float their project ideas.
4. Student formulates project group as per the University guidelines.
5. Student select project from ideas float by department or propose their own idea.
6. At the beginning of the semester, students submit project proposal in prescribed format.
7. HOD and project coordinator formulates faculty teams to review project ideas.
8. The project coordinator organizes session for reviewing project ideas.
9. Faculty teams reviews the project ideas based on feasibility, innovations, etc.
10. Based on panel reviews; If project idea is not accepted, student need to propose new idea.
11. Based on panel reviews; If project idea is accepted, but need modifications, student need to modify proposal and resubmits for review.
12. HOD allocates project supervisor based on the project domain and faculty expertise.
13. Student reports to project supervisor every week and appraise and discuss about progress of the project.
14. Project coordinator floats project evaluation rubrics.
15. Project coordinator organizes progress review session at the mid of the semester.
16. Project coordinator organizes pre-final progress review session at the end of the semester.
17. Student submit synopsis/project report and logbook.
18. During end semester, student present their project work to external examiner.
19. Steps 13-18 repeated in next semester.


HOD Appoints Project Coordinator
Department organizes orientation session
Faculty members float project ideas
Students formulates project groups
Students submit project proposal
HOD formulates faculty review teams
Faculty review teams reviews proposal
Project idea accepted?
No
Student submits new proposal
Yes
Student modifies proposal
Any modifications suggested?
Yes
No
HOD allocates project supervisor
Students report to project supervisor every week
Students maintain log book
Project coordinator floats rubrics
Project coordinator organizes midterm evaluation presentations
Project coordinator organizes end semester evaluation presentations
Students submits synopsis/project report
Students present their work to external examiner
Process repeated during final semester

2.2.4 Initiative related to industry interaction (15)

Institute Marks: 13.00

• **MOU:** The department always strives to impart quality education to meet the needs of growing industry, society and environment. To establish a strong Industry interaction with the students, the Department has taken the initiative to sign Multiple MOU with Industry and professional Bodies. These MOU will provide research backed Knowledge and impart Practice oriented Skills in various fields like Blockchain, Cyber security, Linux, Artificial Intelligence, Web Services (AWS), Design Thinking. The MOU will enhance the knowledge of students and faculty by exchange of information and academic materials, distant or virtual training workshops, joint research activities, and publications. There are 26 MOUs signed by institute with industries/institutes/university. Few examples are mentioned below:

Sr. No	MOU	Date of Agreement	Purpose and Outcome	Impact
1	Indian Institute of Remote Sensing (IIRS) Outreach Programme	11/08/2022	Fr. Conceicao Rodrigues College of Engineering is the Nodal Center for IIRS-ISRO outreach programme for Online, Offline, Live & Interactive Courses offered by IIRS-ISRO Dehradun from 15th August 2022.To give the students an opportunity to enroll in various certification courses in Remote Sensing and geo-spatial technology.	Many students have enrolled in this course.
2	Crypto University	8/8/2022	As a part of Industry Academia interaction.it helps the students to get insights into the fast growing fields of Blockchain, Metaverse and Digital Landscape by imparting real time hands -on and industry driven skills and knowledge. This thereby enhances the career opportunities for Students in the field of Blockchain.	Expert session Conducted to make the students aware about the skills required for Blockchain Developers, Job opportunities in Blockchain. Encourages students to do Projects/Research activity in the field of Block Chain.

3	EC Council /Academia	20/08/2021	Industry Awareness Webinars to engage student community on Cyber Awareness Sessions for Students knowledge advancement in the field of cybersecurity education. This MOU will help the students in their Research activity, further studies and Career in the field of Cyber security	Students completed Certification course offered by EC council.
4	Linux Professional Institute, Canada	8/03/2021	To encourage students to use Linux for software-based activities and provides Job oriented training on Linux.	
5	AWS	13/08/2018	The MOU is signed with AWS Academy with the aim of empowering students of Fr. CRCE with industry recognized certification, which will provide the students with career opportunity in the field of cloud. The MOU is signed for bridging the gap between industry and academia. As cloud technologies continue to help organizations transform at a rapid pace, employees with the necessary cloud skills are in high demand.	With the help of AWS Academy MOU, The institute provides with a free, ready to teach cloud computing curriculum, that prepares students to pursue industry-recognized certifications and in-demand cloud jobs. It also helps faculty stay at the forefront of AWS Cloud innovation so that they can equip students with the skills they need to get hired in one of the fastest growing industries.
6	TCS (Academic Interface Program)	01-04-2018	Workshops are conducted for students in various domains like Machine Learning, Deep Learning, Design Thinking etc.	Students have used the knowledge gained from these workshops in their Projects, Participated in competitions like Hackathons.

- **SDP and FDP:** Student Development Programs and Faculty Development Programs are organized by the Department in every academic year, in the form of seminars, workshops, expert lectures, by inviting experts from industry and academia through Professional Bodies. These SOP and FOP provide exposure to advanced technologies and impart Practical Training to the students. The following are the Student development Programs and Faculty Development Programs organized:

Day	Time (1ST)	Industry Expert	Topic
Day1 30/9/2022	1:00 p.m -4:00 p.m	Rocky Jagtiani BE(IS), PGDST (NCST), ME(IT) Head Training & Development Suven Consultants & Technology Pvt Ltd	NLP using Deep Learning
Day2 3/10/2022	1:00 p.m -4:00 p.m	Rocky Jagtiani BE(IS), PGDST (NCST), ME(IT) Head Training & Development Suven Consultants & Technology Pvt Ltd	NLP using Deep Learning
13/10/2022	11:15 p.m 12:15 p.m	Karthick Hariharan Machine Learning Engineer Quantiphi Analytics Solution Pvt Ltd.	Role of Analytics from Placement Perspective
28/01/2022 Day 1	10:00a.m- 12:00p.m	Mr. Thompson Naidu Senior Software Developer Quantiphi Analytics Solution Pvt Ltd.	Advance Cloud Computing Docker and Kubernetes
29/01/2022 Day2	10:00a.m- 12:00p.m	Mr.Pranay Lobo SoftwareEngineer R&D Protegrity	Advance Cloud Computing Docker and Kubernetes
28/08/2021	10:00a.m- 12:00p.m	Noel Joymon Conversational BoT Engineer, Quantiphi Analytics Solution Pvt Ltd.	ChatBot Designing

Day 1 (24/5/2020) Sunday	11:00am 12:00pm	Mr. Swapnil Khetan Michael Page, Manger-Procurement & Supply Chain	How an interviewer assesses a potential candidate
	12:00 pm 1:00 pm	Mr. Edwin Clement Software Engineer BrowserStack	Interview Preparation Checklist
	2:00 pm - 3:00 pm	Mr. Karan Gohil Cloud Solutions Engineer, Google	Coding Skills Enhancement
Day 2 (25/5/2020) Monday	10:00 am 11:00am	Mr. Mahendra Mehra PhD Scholar, Assistant Professor at Fr. CRCE, Certified Ethical Hacker, EC Council. Oracle Certified Cloud foundation Associate. Star Certified (CLOUD, DevOps, Ethical Hacking) Trainer	Linux based Interview Questions
	12:00 pm 1:00 pm	Ms. Jenifer Reuben DevOps Engineer, BNP Paribas	DevOps Tools -Jenkins
	2:00 pm-3:00 pm	Mr. Leon D'souza Software Developer, MSCI Inc.	Database Interview Questions
Day 3 (26/5/2020) Tuesday	9:30 am -11:00 am	Mr. Aakash Palghadmal, Analytical Development Analyst, MSCI Inc.	OOPS Concept Part 1 OOPS Concepts part 2 (https://drive.google.com/file/d/1nOIQlt87IP2tLemwK_R9oAUJIVz7x284/view?usp=sharing)
	12:00 pm 1:00 pm	Dr. Khushbu Trehan Professor and Employability Skills Trainer. Dale Carnegie Certified Trainer. British Council Certified IELTS Trainer	HR Interview Questions
Day4 (27/5/2020) Wednesday	10:00 am 11:00 am	Mr. Gaurav Shinde Software Engineer, JPMorgan Chase & Co.	Angular, JDBC Integration
	12:00 am 1:00 pm	Mr. Melwyn Saldanha Software Engineer, People Interactive	Golang for Microservices

Day 5 (28/5/2020) Thursday	10:00 am 11:00 pm	Mr. Gaurav Sen Software Engineer and YouTuber	System Design-Case Study GoToWebinar
	12:00 am 1.00 pm	Mr. Ashley Lobo Programmer, Final Year Student, SIH 2019 Winner, ACM ICPC 2019 Regional Finalist	Competitive Coding (Hands-on)
27/5/2020-31/5/2020	10.00a.m – 4.00 p.m	Mr. Pranav Shastri, CEO & Founder of programming Fiesta.	Ethereum Powered DAPP Deployment in Blockchain Technology
25/01/2020	10.00a.m-11.00 p.m	Mr. Rathil Patel, Solution Engineer. Browser Stack	HTML, CSS and Bootstrap Workshop
Day 1 (30/5/2020) Saturday	10:30 am 11:30am	Dr. Kalpesh Parikh MD &CEO lntellisense ITsys Pvt. Ltd, Gujarat	Keynote Speech Disruptive Technologies of Industry 4.0
	12:00 pm 1:00 pm	Mr. Dheeraj Anchan Principal Research Scientist, ISRO	Block Chain Technology for Industry 4.0
Day 2 (31/5/2020) Sunday	10:00 am 11:00am	Mr. Vaibhav Kohli Sr. Software Engineer, VMWARE, USA	Cloud Technology for Industry 4.0
	11:30am-12:30 pm	Mr. Pranit Raje AWS Cloud support Engineer, AWS Solutions, Mumbai	Amazon Web Services for Industry 4.0
	2:00 pm - 3:00 pm	Ms. Anisha Gharat Platform Engineer, Quantifi, Mumbai	Google Cloud Platform: Architecture, Case Study and Demonstration
	10:00 am - 11:00am	Prof. Yogesh Pingle Assistant Professor at Vidya Vardhini College of Engg, Mumbai	Use of loT for Industry 4.0
	11:30 am-12:30 pm	Mr. Apurva Godbole Co-Founder and CEO, Drona Aviation, Pune	Role of drones in industry post COVID19

Day 3 (01/6/2020) Monday	2:00 pm- 3:00 pm	Mr. Mahendra Mehra PhD Scholar, Assistant Professor at Fr. CRCE, Certified Ethical Hacker, EC Council. Oracle Certified Cloud foundation Associate. Star Certified (CLOUD, DevOps, Ethical Hacking) Trainer	The path to Industry 4.0 through Cyber Security
Day4 (02/6/2020) Tuesday	10:30 am - 12:00 pm	Mr. Mustafa Fatakdawala Data Scientist, TCS, Mumbai	Al in Business 4.0 era
	12:30 pm- 1:30 pm	Dr. Ramchandra Magrulkar Associate Professor, D.J. Sanghavi College of Engg, Mumbai	Data Handling and Visualization using Python
	2:00pm- 3:00pm	Mr. Dhaval Sonawane Cognitive Software Engineer, IBM, USA	Data science and Industry 4.0
Day 5 (03/6/2020) Wednesday	10:00 am - 12:00 am	Ms. Ketaki Joshi PhD Scholar, Assistant Professor at Fr. CRCE Mr. Bharat Kumavat Technical Chief and Founder. Triaro & co., Mumbai	Additive Manufacturing - Technology enabler for Industry 4.0
	2:00 pm- 3.00 pm	Mr. Swapnil Khetan Manager- Procurement & Supply Chain Practice at Michael Page, Mumbai.	Recognizing People Skills in the age of automation
02/08/2020	2:00pm- 3:00pm	Mr. Rathil Patel, Solution Engineer. Browser Stack	Web Design Lab: Webinar on Responsive Web Based Resume Making Using Bootstrap
5/01/2020	10:00 am - 12:00 am	Mr. Rathil Patel Solution Engineer, Browser Stack	HTML, CSS and Bootstrap Workshop for FIRST YEAR Students
3/08/2019	10:00 am - 12:00 am	Mr. Thompson Naidu Analyst Software Developer TIAA	Web Technology Lab - "Node Js and mango db"

02/12/2019 To 06/12/2019	1:00 pm 4:00 p.m	Bennett University and in association with Industry Partners NVIDIA	Advanced Al And Deep Learning workshop

- **Industrial Visits:** For understanding work environment in the industries, industrial visits are organized once in a year.
- **Industrial Internships:** At department and institute level, the department encourages the students to undergo internships/summer training. Some students Participate in NPTEL certification courses and Various National Level Competitions (e-yantra, eYRC),and get the opportunity to intern at their reputed Institutes like IIT Mumbai ,IIT Indore. Following is the total count of students completed Internships.

  2019-2020: 53

  2020-2021: 99

  2021-2022: 69

- **Training and Placement**: 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. Companies like TCS, Accenture, L & T InfoTech, JP Morgan, Quantiphi, Browser Stack.are invited for campus recruitment. Almost all eligible students get placement in campus. Department also take feedback from recruiting companies and strives to improvise. The training and placement Cell takes the initiative to organize multiple Training Programs. This initiative imbibes professionalism, ethics and keeps the student aware of Industry expectations, promotes career counseling by organizing guidance lectures by senior corporate personnel.
- **Alumni:** The alumni play a major role in contributing to the development of the Department by providing their expert view in their respective fields. The involvement of Alumni are seen through their participation as guest lecturers, Department Advisory Board meetings and collaborative partners in technical teams like ROBOCON, VAYUSHASTRA. Following is the list attached showing few evidences of Alumni Interaction with the students.

	Year	Name of Event	Resource Person	Designation
1	2019-20	Alumni Speak-Up Program	Farhan Shaikh	Senior Manager - Capgemini Invent
2	2019-20	Alumni Speak-Up Program	Kushan Sen	Lead Software Engineer - Cimpress
3	2019-20	Alumni Speak-Up Program	Gaurav Sen	CEO - lnterviewReady
4	2019-20	Alumni Speak-Up Program	Aditya Joshi	Senior Director - Western Digital
5	2019-20	Alumni Speak-Up Program	Abhishek Kateliya	Founder - Third Block Community

6	19/11/2020	Panel Discussion - How to Equip Yourself for Further Studies	1. Slavvy Coelho 2. AchalShah 3. Mariya Ali 4. Janhavi Powale	1. Data Scientist - Geotab Inc. 2. Associate - McKinsey & Company 3. Product Manager - Microsoft 4. Product Manager - Vestcom
7	20/11/2020	Panel Discussion - Explore the start-up dream:Plan to Execution	1. Parag Doshi 2.Girish Batra 3.Subash Bishnoi 4. Sayli Potdar	1. Director - Chenoa Information & Software Services Pvt. Ltd. 2. Co-Founder - Sarthy Venture Investment Partners 3. Co-Founder - Kitabeli 4. Founder - The Tipsy Canvas
8	27/02/2021	Resume Building Workshop	Gopesh Rajderkar	Software Developer - TCS
9.	17/07/2022	Alumni Mentorship Program - Quantiphi	1. Nishant Seth 2. Yogendra Yatnalkar 3. Mareena Fernandes	1. Marketing Specialist - Quantiphi 2. Sr. ML Engineer - Quantiphi 3. Business Analyst - Quantiphi
10.	29/07/2022	Optimised Approach Towards Reallime Application using Industry 4.0	Chinmay Kolhatkar	Founder-Technode
11.	27/07/2022	Hackathon Preparation: Tips and Tricks to Excel	1. Vedant Sahai 2. Princeton Saretto	1. Al Product Manager - Plexflo 2. Software Developer Engineer - BrowserStack
12.	25/09/2022	How to Equip Yourself for Further Studies - II	1. Abhishek Kateliya 2. Ryan D'silva	1. Entrepreneur - ThirdBlockCom 2. Graduate Teaching Assistant- Purdue University

Hackathons:

• Every year more than 50% of the students Participate in the Hackathon organized at Institute

Level. These students get the opportunity to interact with the Industry Mentors, which helps in the technical skill development.

- Students also participate in Industry initiated Hackathons like TIAA, JP Morgan, eventually get the opportunity to intern and few of them get Placement offers in the same company.
- Students participating in Smart India Hackathon get an opportunity to interact with the Industry Mentors.

2.2.5 Initiative related to industry internship/summer training (15)

Institute Marks: 15.00

- Mentors Encourage the students to go for industrial internship.
- Support provided by the institute for getting internship at the industry:
  - **Internship Expo**: TED-x CRCE organizes Internship Expo every year, where many Technical and Non-Technical companies visit the Campus. The expo gives the students an opportunity to have a close interaction with the employers of the industry, and understand the various technical skills required by the industry. The students are then interviewed and successful candidates get an opportunity to intern at these Industries.
  - Students are encouraged to Participate in various company-initiated Hackathons like JP Morgan, TIAA and eventually students who successfully compete in these Hackathons, get the opportunity to Intern at these Industries, few of them also get placement offers in the same company.
  - Students have used the Knowledge, technical and non-technical skills gained from the Internships in their respective Project implementation, Participation in Competitions, Hackathons. This eventually has benefited the students in getting good Placement offers in Reputed companies and admission for Post Graduate Programs.

Year	Number of Students Completed Internship	Number of Internships
2019-2020	59	64
2020-2021	91	99
2021-2022	56	69

3 COURSE OUTCOMES AND PROGRAM OUTCOMES (120)

Total Marks 117.00

Define the Program specific outcomes

3.1 Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs) (20)

Total Marks 20.00

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

3.1.1 Course Outcomes (COs)(SAR should include course outcomes of one course from each semester of study, however, should be Prepared for all courses and made available as evidence, if asked) (5)

Institute Marks: 05

Note: Number of Outcomes for a Course is expected to be around 6.

Course Name:	**C2 01**	**Course Year** :	**2021-2022**

Course Name	Statements
C2 01.1	Implement geometric output primitive's algorithm
C2 01.2	Apply the appropriate filling algorithm for the given objects.
C2 01.3	Explain viewing and Modelling techniques in 20 and 30.
C2 01.4	Apply transformations on graphical objects in two and three dimensions
C2 01.5	Develop real world computer Graphics based project in a Team.

Course Name:	**C202**	**Course Year**:	**2021-2022**

Course Name	Statements
C2 02.1	Apply the methods for analyzing the complexity of the algorithms.
C2 02.2	Analyze different techniques of algorithm design.
C2 02.3	Analyze different String matching techniques.
C2 02.4	Implement algorithms using different designing techniques

Course Name :	**C3 01**	**Course Year** :	**2021-22**

Course Name	**Statements**
C3 01.1	To identify requirements & assess the process models
C3 01.2	Plan, schedule and track the progress of the projects
C3 01.3	Design the software projects.
C3 01.4	Do testing of software project
C3 01.5	Identify risks, manage the change to assure quality in software projects

Course Name :	**C302**	**Course Year** :	**2021-22**

Course Name	**Statements**
C3 02.1	Identify basic concepts and principles of mobile computing and cellular architecture.
C3 02.2	Describe the components and functioning of GSM and CDMA architecture.
C3 02.3	To classify variety of security techniques in mobile network
C3 02.4	Describe and apply the concepts of WLAN for local as well as remote applications.
C3 02.5	Describe Long Term Evolution (LTE) architecture and its interfaces.
C3 02.6	Develop and demonstrate mobile applications using various tools

Course Name :	**C4 01**	**Course Year** :	**2021-2022**

Course Name	**Statements**
C4 01.1	Identify the appropriate Artificial Intelligence and Soft Computing techniques for solving problems in hand.
C4 01.2	Choose appropriate search algorithm for problem in hand.
C4 01.3	Analyze the strength and weakness of Al approaches to knowledge representation, reasoning and planning.
C4 01.4	Construct supervised and unsupervised ANN for real world applications.
C4 01.5	Design fuzzy controller system.
C4 01.6	Apply Hybrid approach for expert system design.

Course Name :	**C402**	**Course Year** :	**2021-2022**

Course Name	**Statements**
C4 02.1	Demonstrate knowledge of the basic elements and concepts related to distributed systems & technologies
C4 02.2	Illustrate the middleware technologies that support distributed applications such as RPC, RMI and Object based middleware

C4 02.3	Analyse the various techniques used for clock synchronization and mutual exclusion
C4 02.4	Demonstrate the concepts of Resource and Process management, and Fault Tolerance techniques
C4 02.5	Assess the significance of Consistency and Replication Management models
C4 02.6	Apply the knowledge of Distributed File System to analyse various file systems like NFS, AFS and the experience in building large-scale distributed applications

3.1.2 CO-PO matrices of courses selected in 3.1.1(Six matrices to be mentioned; one per semester from 3rd to 8th semester) (5)

Institute Marks : 5.00

1 . course name : C201

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C201.1	3	3	2	-	2	-	-	-	-	-	-	-
C201.2	3	3	2	-	2	-	-	-	-	-	-	-
C201.3	3	3	2	-	2	-	-	-	-	-	-	-
C201.4	3	-	-	-	-	-	-	-	-	-	-	-
C201.5	3	3	3	-	3	-	-	1	3	3	1	2
Average	**3.00**	**3.00**	**2.00**	**0.00**	**2.00**	**0.00**	**0.00**	**1.00**	**3.00**	**3.00**	**1.00**	**2.00**

2 . course name : C202

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C202.1	3	2	-	-	-	-	-	-	1	-	-	-
C202.2	3	3	-	-	-	-	-	-	1	-	-	-
C202.3	3	3	-	-	-	-	-	-	1	-	-	-
C202.4	3	3	3	-	-	-	-	-	1	-	-	-
Average	**3.00**	**3.00**	**3.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**

3 . course name : C301

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C301.1	1	1	3	3	-	-	-	-	-	1	-	-
C301.2	1	3	-	-	-	-	-	-	3	3	3	2
C301.3	1	1	3	-	-	-	-	-	3	-	-	-
C301.4	-	-	-	2	2	-	-	-	-	-	-	-
C301.5	1	2	-	-	-	-	-	-	-	-	-	-
Average	**1.00**	**2.00**	**3.00**	**3.00**	**2.00**	**0.00**	**0.00**	**0.00**	**3.00**	**2.00**	**3.00**	**2.00**

4 . course name : C302

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C302.1	2	1	1	-	2	-	-	-	-	-	-	-
C302.2	2	-	-	-	2	-	-	-	-	-	-	-
C302.3	2	-	-	-	-	-	-	-	-	-	-	-
C302.4	2	-	-	-	-	-	-	-	-	-	-	-
C302.5	2	-	-	-	-	-	-	-	-	-	-	-
C302.6	2	3	3	-	3	-	-	-	2	1	1	1
Average	**2.00**	**2.00**	**2.00**	**0.00**	**2.00**	**0.00**	**0.00**	**0.00**	**2.00**	**1.00**	**1.00**	**1.00**

5 . course name : C401

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C401.1	3	2	-	-	-	-	-	-	-	-	-	-
C401.2	3	2	-	-	-	-	-	-	-	-	-	-
C401.3	3	2	-	-	-	-	-	-	-	-	-	-
C401.4	3	2	3	-	-	-	-	-	-	-	-	-
C401.5	3	2	3	-	-	-	-	-	-	-	-	-
C401.6	3	2	-	-	-	-	-	-	-	-	-	-
Average	**3.00**	**2.00**	**2.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

6 . course name : C402

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C402.1	3	-	2	-	-	-	-	-	-	-	-	2
C402.2	3	-	2	2	2	-	-	-	-	-	-	-
C402.3	3	2	2	2	-	-	-	-	-	-	-	-
C402.4	3	3	2	2	-	-	-	-	-	-	-	-
C402.5	3	3	2	-	-	-	-	-	-	-	-	-
C402.6	3	3	-	2	-	-	-	-	-	-	-	-
Average	**3.00**	**3.00**	**2.00**	**2.00**	**2.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.00**

1 . Course Name : C201

Course	PSO1	PSO2
C201.1	3	-
C201.2	3	-
C201.3	3	-
C201.4	3	-
C201.5	3	-
Average	**3.00**	**0.00**

2 . Course Name : C202

Course	PSO1	PSO2
C202.1	2	2
C202.2	2	2
C202.3	2	2
C202.4	2	2
Average	**2.00**	**2.00**

3 . Course Name : C301

Course	PSO1	PSO2
C301.1	2	2
C301.2	2	2
C301.3	2	2
C301.4	2	2
C301.5	2	2
Average	**2.00**	**2.00**

4 . Course Name : C302

Course	PSO1	PSO2
C302.1	2	-
C302.2	2	-
C302.3	2	1
C302.4	2	-
C302.5	2	-
C302.6	2	2
Average	**2.00**	**2.00**

5 . Course Name : C401

Course	PSO1	PSO2
C401.1	3	-
C401.2	3	-
C401.3	3	-
C401.4	3	2
C401.5	3	3
C401.6	3	1

3.1.3 A Program level Course-PO matrix of all courses including first year courses (10)

Institute Marks: 10.00

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSC301-/	2	0	0	0	0	0	0	0	0	0	0	0
CSC301-E	2	0	0	0	0	0	0	0	0	0	0	0
CSC302-/	2	1	1	0	0	0	0	0	2	2	0	2
CSC302-E	2	1	1	0	0	0	0	0	2	2	0	2
CSC303-/	3	2	2	0	0	0	0	0	0	0	1	1
CSC303-E	3	2	2	0	0	0	0	0	0	0	1	1
CSC304-/	3	1	0	0	0	0	0	0	0	0	0	1
CSC304-E	3	3	2	0	3	0	0	0	0	0	0	0
CSC305-/	3	3	3	0	2	0	0	1	3	3	1	2
CSC305-E	3	3	3	0	2	0	0	1	3	3	1	2
CSC401-/	2	0	0	0	0	0	0	0	0	0	0	0
CSC401-E	2	0	0	0	0	0	0	0	0	0	0	0
CSC402-/	3	3	3	0	0	0	0	0	1	0	0	0
CSC402-E	3	3	3	0	0	0	0	0	1	0	0	0
CSC403-/	3	3	3	0	3	0	0	0	2	2	2	3
CSC403-E	3	3	3	0	3	0	0	0	3	3	2	2
CSC404-/	3	2	0	2	0	0	0	0	0	0	0	0
CSC404-E	3	2	0	2	0	0	0	0	0	0	0	0
CSC405-/	3	3	3	0	2	0	0	0	0	0	0	2
CSC405-E	3	2	3	0	2	0	0	0	0	0	0	2
CSC501-/	3	3	3	3	0	0	0	0	0	2	0	3
CSC501-E	3	3	3	3	0	0	0	0	0	2	0	3
CSC502-/	2	2	3	0	3	0	0	0	0	2	0	3
CSC502-E	1	2	3	3	2	0	0	0	3	2	3	2
CSC503-/	3	3	3	0	3	0	0	0	0	0	0	0
CSC503-E	3	3	3	0	3	0	0	0	0	0	0	0
CSC504-/	3	3	3	0	3	0	0	0	3	3	0	3
CSC504-E	3	2	3	2	2	0	0	0	0	0	0	1
CSC601-/	2	2	2	0	1	0	0	0	1	0	0	1
CSC601-E	2	2	2	0	1	0	0	0	1	0	0	1
CSC602-/	2	2	2	1	3	0	0	1	1	1	0	1
CSC602-E	3	2	3	3	3	2	0	0	3	0	0	0
CSC603-/	2	2	2	0	2	0	0	0	2	1	1	1
CSC603-E	2	1	3	2	2	0	0	0	2	2	2	2
CSC604-/	2	2	3	0	3	0	0	0	0	2	0	3
CSC604-E	3	3	2	0	0	0	0	0	0	0	0	0
CSC701	3	2	3	0	3	0	0	0	3	0	0	0
CSC702	2	2	2	0	2	0	0	2	2	2	1	1
CSC801	3	2	2	2	2	2	0	0	0	0	0	1
CSC802	3	3	2	2	2	0	0	0	0	0	0	2
CSDL501	3	3	3	0	0	0	0	0	0	0	0	0

CSDL502	3	0	2	0	3	0	0	0	0	0	0	0
CSDL601	3	2	2	0	0	0	0	0	0	0	0	0
CSDL602	3	3	3	0	3	0	0	0	3	3	0	3
CSDL701	3	3	3	3	0	3	3	0	3	0	0	3
CSDL801	3	3	3	2	3	3	0	0	2	3	2	3
CSILO701	3	2	2	2	2	2	0	0	0	0	2	2
CSILO702	3	3	3	2	3	3	0	0	2	3	2	3
CSILO801	3	3	3	3	3	0	0	3	3	3	3	3
CSILO802	0	0	0	0	0	0	0	0	0	0	2	0
CSL304-A	3	3	3	0	1	2	0	0	3	2	2	1
CSL304-B	3	3	3	0	1	2	0	0	3	2	2	1
CSL405-A	3	2	2	0	2	0	0	0	2	0	0	2
CSL405-B	3	2	2	0	2	0	0	0	2	0	0	2
CSL504-A	0	0	0	0	0	3	0	3	3	3	0	0
CSL504-B	0	0	0	0	0	3	0	3	3	3	0	0
CSL605-A	3	3	3	2	3	0	0	0	0	0	0	3
CSL605-A	3	2	2	2	2	0	0	0	0	0	0	1
CSL803	3	2	2	2	2	2	0	0	0	0	0	1
CSM301-A	3	3	3	3	3	0	3	0	3	3	3	3
CSM301-B	3	3	3	3	3	0	3	0	3	3	3	3
CSM401-A	3	3	3	3	3	0	0	3	3	3	3	3
CSM401-B	3	3	3	3	3	0	0	3	3	3	3	3
CSM501-A	2	2	2	0	2	0	0	3	3	3	2	2
CSM501-B	2	2	2	0	2	0	0	3	3	3	2	2
CSM601-A	2	2	2	0	2	0	0	3	3	3	2	2
CSM601-B	2	2	2	0	2	0	0	3	3	3	2	2
CSP705	3	3	3	0	3	2	0	2	3	3	2	2
CSP805	3	3	3	0	2	0	0	0	3	3	3	3
FEC101	3	0	0	0	0	0	0	0	0	0	0	0
FEC102	3	0	0	0	0	0	0	0	0	0	0	0
FEC103	2	0	0	0	0	0	0	0	0	0	0	0
FEC104	3	2	2	0	0	0	0	0	0	0	0	0
FEC105	3	2	0	0	0	0	0	0	0	0	0	0
FEC201	3	0	0	0	0	0	0	0	0	0	0	0
FEC202	3	0	0	0	0	0	0	0	0	0	0	0
FEC203	2	0	0	0	0	0	0	0	0	0	0	0
FEC204	3	1	2	0	0	0	0	0	0	2	0	0
FEC205	3	1	1	0	0	0	0	0	0	0	0	0
FEC206	0	0	0	0	0	0	0	0	0	2	0	0
FEL103	2	2	2	0	0	0	0	0	0	0	0	0
FEL105/2(	1	0	1	0	1	2	0	0	2	0	0	0
FEL203	3	1	2	0	3	0	0	0	0	2	0	0

3.2 Attainment of Course Outcomes

Total Marks: 47.00

Course	PSO1	PSO2
CSC301-A	0	0
CSC301-B	0	0
CSC302-A	2	2
CSC302-B	2	2
CSC303-A	3	2
CSC303-B	3	2
CSC304-A	1	0
CSC304-B	3	0
CSC305-A	3	3
CSC305-B	3	3
CSC401-A	0	0
CSC401-B	0	0
CSC402-A	2	2
CSC402-B	2	2
CSC403-A	3	3
CSC403-B	3	3
CSC404-A	3	0
CSC404-B	3	0
CSC405-A	2	0
CSC405-B	0	0
CSC501-A	3	3
CSC501-B	3	3
CSC502-A	3	3
CSC502-B	2	2
CSC503-A	3	0
CSC503-B	3	3
CSC504-A	3	3
CSC504-B	3	0
CSC601-A	1	1
CSC601-B	1	1
CSC602-A	3	1
CSC602-B	3	3
CSC603-A	2	3
CSC603-B	2	3
CSC604-A	3	3
CSC604-B	3	1
CSC701	3	0
CSC702	2	2
CSC801	3	0
CSC802	3	3
CSDL501	3	3
CSDL502	1	0

CSDL601	0	0
CSDL602	3	3
CSDL701	3	3
CSDL801	3	3
CSILO701	3	0
CSILO702	3	3
CSILO801	3	3
CSILO802	0	1
CSL304-A	2	1
CSL304-B	2	1
CSL405-A	3	3
CSL405-B	3	3
CSL504-A	0	0
CSL504-B	0	0
CSL605-A	3	0
CSL605-B	3	0
CSL803	3	0
CSM301-A	3	3
CSM301-B	3	3
CSM401-A	3	0
CSM401-B	3	0
CSM501-A	2	2
CSM501-B	2	2
CSM601-A	2	2
CSM601-B	2	2
CSP705	3	3
CSP805	3	3
FEC101	0	0
FEC102	0	0
FEC103	0	0
FEC104	0	0
FEC105	0	0
FEC201	0	0
FEC202	0	0
FEC203	0	0
FEC204	0	0
FEC205	3	0
FEC206	0	0
FEL103	0	0
FEL105/2	0	0
FEL203	0	0

3.2.1 Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome is based (10)

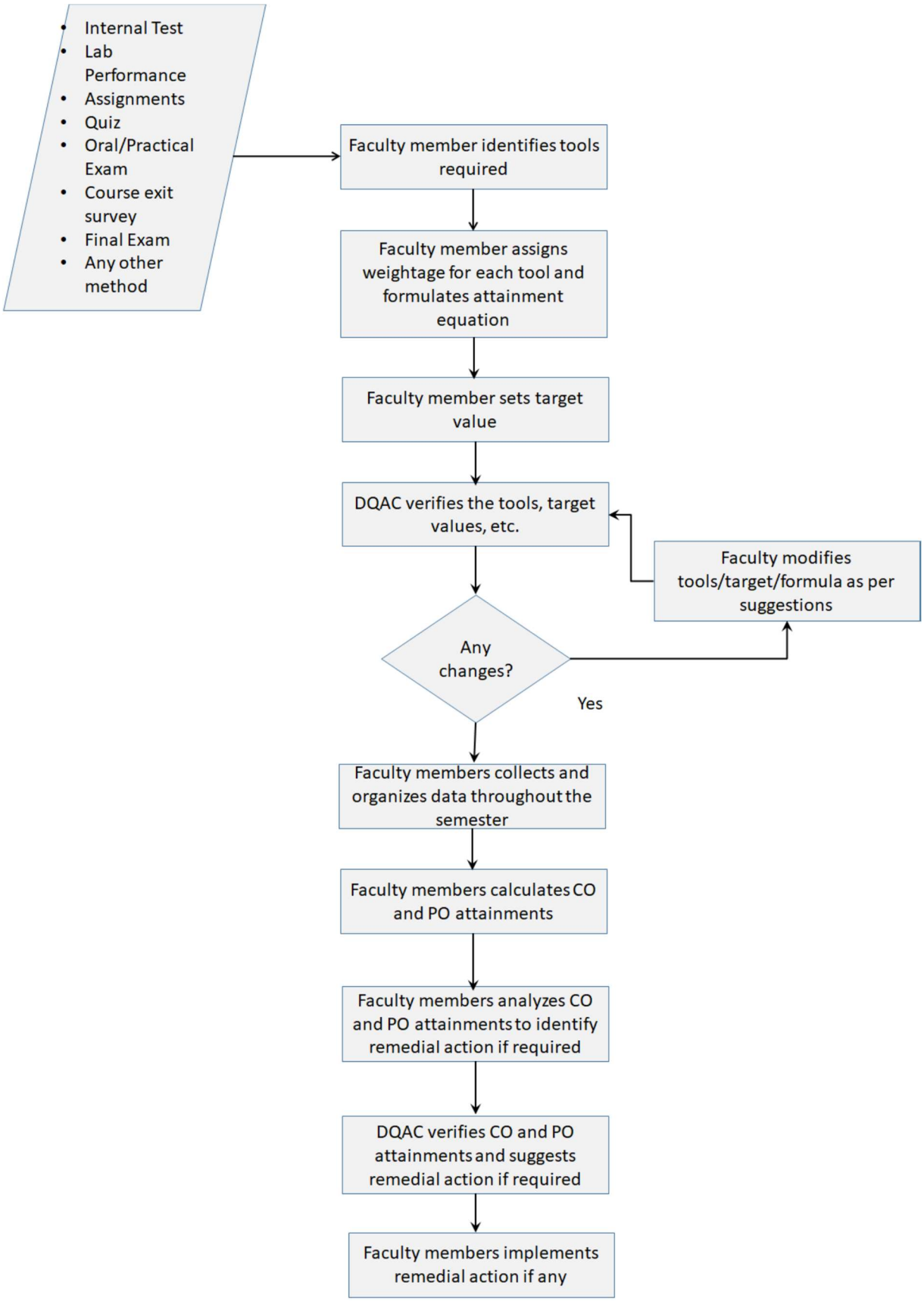
Institute Marks : 9.00

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 CO's and 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 conducted at the 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.

Process to Measure CO attainment

- Faculty member identifies tools required to measure CO attainment for each CO.
- Faculty member assigns weightage for each tool.
- Faculty member formulates equation to calculate attainment.
- Faculty member sets target level for CO attainment.
- DQAC verifies the method/tools/target value of CO attainment calculation and suggests tools, target values, etc. if required.
- Based on feedback from DQAC, faculty member makes appropriate changes.
- Faculty member collects the data throughout semester as per the tools selected for measuring CO attainment.
- Faculty member organizes data.
- Faculty member calculates CO and PO attainments for said course.
- Faculty member analyzes CO attainment to identify remedial actions if necessary.
- DQAC verifies attainment and suggests remedial action.
- Faculty member implements remedial measures during following year to improve CO attainment or sets new target value.


Internal Test
Lab Performance
Assignments
Quiz
Oral/Practical Exam
Course exit survey
Final Exam
Any other method
Faculty member identifies tools required
Faculty member assigns weightage for each tool and formulates attainment equation
Faculty member sets target value
DQAC verifies the tools, target values, etc.
Faculty modifies tools/target/formula as per suggestions
Any changes?
Yes
Faculty members collects and organizes data throughout the semester
Faculty members calculates CO and PO attainments
Faculty members analyzes CO and PO attainments to identify remedial action if required
DQAC verifies CO and PO attainments and suggests remedial action if required
Faculty members implements remedial action if any

Assessment tools used for CO attainment

- Unit Test: Two tests are conducted in each semester. The questions are set pertaining to the 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.
- 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 Outcome of all courses with respect to set attainment levels (40)

Institute Marks: 38.00

Sample CO calculation:

CSC402.1: **Apply methods for analyzing complexity of algorithms**
Test1:60% of students with minimum score 60% marks

Post Lab Marks of exp 1 -3: 60% of students with minimum score 60% marks

Assignment 1: 70% of students with minimum score 70% marks

Quiz 1: 60% of students with minimum score 60% marks

End Semester Examination: 60% of students with minimum score 70% marks

Direct Methods (80%):

Unit Test (UT), Assignments(A), PostLab (PL), Mini Project (MP), University Theory Exam (T) and University Practical Exam (P), Quiz (Q)

CSC402.1: Direct Methods(80%): Unit Test 1 + PostLab + Assignment 1+Quiz+UniExam

CSC402.1 dm = 0.2*UT +0.1*PLab+0.2*A+0.2Quiz +0.3T

$CSC402.1_{DM}$ = 0.2*UT + O.1PtL+ 0.2*A + 0.2*T + 0.2*P* = 2.60

Indirect Method (20%): Course exit survey
Number of respondents: 54
Number of respondents who strongly agree or agree: 50
$CSC402.1_{IDM}$ = 3
Overall attainment:

$CSC402.1 = 0.8*CSC402.1_{DM}+ 0.2* CSC402.1_{IDM}$= 2.68

Rubrics for Laboratory Performance:

Sr. No.	Performance Indicator	Excellent	Good	Average	Below Average
1		The code adheres to all standards. The code is exceptionally well organized and very easy to follow. Comments are complete and useful; variables purposes are clearly communicated by their names. [4 marks]	There may be some minor failures to adhere to standards, for instance, indentation may be inconsistent, some lines may be too long, or a few variables may have unobvious names or be undocumented. [3 marks]	The code fails to adhere to standards at multiple locations indentation is inconsistent throughout the program, many variable names are vague, comments are missing. [2 marks]	There are major problems with the programs design or coding style that would interfere with its comprehension, reuse, or maintenance. The code may be poorly formatted. [0.5-1 Marks]
2	Output validation [2M]	Output is obtained only for different cases of inputs. [2M]	Output is obtained only for some subsets of inputs. [1M]	Output is obtained only for some subsets of inputs, incorrect output for few cases [0.5M]	No output is obtained [0 marks]
3	Post Lab Questions [2M]	Answers to all questions are correct and explained in depth [2 Marks]	Answers to most of the questions are correct but not explained in depth [1 Marks]	Few answers are incorrect. [0.5 M]	Answers to most of the questions are incorrect [0 Marks]
4	Promptness [2M]	The laboratory report submitted on time [2 marks]	The laboratory report submitted next day. [1 mark]	--	The laboratory report is submitted in the next practical session. [1 mark]

Rubrics for Assignment:					
	Indicator	**Excellent**	**Good**	**Average**	**Below average**
1	Timeline (2)	submitted on time or early (2)	Submitted next day (1)	Submitted in the same week (0.5)	Submitted in the next week (0)
2	Organization (2)	Well organized neat and clear handwriting, neat diagrams with all labels. (2)	Organized to some extent, diagrams and handwriting is neat with some missing labels (1)	Organization not appropriate, diagrams are with some missing labels (0.5)	Poorly organized, diagrams incomplete (0)
3	Level of content (3)	All points are covered and answered accurately (3)	Some important points are omitted/ addressed minimally (2)	Many important points are missing and the ones which are written are addresses in brief (2-1)	Many important points are missing and the answers are not accurate. (1-0.5)
4	Knowledge of the Topic (3)	All Concepts of a topic are clear and knows the application to real world problems (3)	All Concepts of a topic are mostly clear and lacks understanding about real world problems (2)	Concepts of a topic are not understood clearly, lacks understanding about the application to real world problems (2-1)	Poor understanding of concepts and application to real world problems (2-1)

3.3 Attainment of Program Outcomes and Program Specific Outcomes (50) Total Marks 50.00

Sr. No	Subject	CO NUM	Target Attainment	Actual Attainment
1	Applied Maths CSC301 - A	CSC301.1	2.7	3
		CSC301.2	2.7	3
		CSC301.3	2.7	3
		CSC301.4	2.7	2.8
		CSC301.5	2.7	3
		CSC301.6	2.7	3
2	Discrete Structures and Graph Theory CSC302 -A	CSC302.1	2.7	2.52
		CSC302.2	2.7	2.52
		CSC302.3	2.7	2.76
		CSC302.4	2.7	2.28
		CSC302.5	2.7	2.04
3	Data Structures CSC303- A	CSC 303.1	2.7	2.56
		CSC 303.2	2.7	2.84
		CSC 303.3	2.7	2.84
		CSC 303.4	2.7	2.84
4	Digital Logic and Computer Architectures Organisation CSC304-A	CSC 304.1	2.7	3
		CSC 304.2	2.7	3
		CSC 304.3	2.7	3
		CSC 304.4	2.7	3
		CSC 304.5	2.7	3
		CSC 304.6	2.7	2.8
5	Computer Graphics CSC305 A	CSC305.1	2.7	3
		CSC305.2	2.7	2.84
		CSC305.3	2.7	2.84
		CSC305.4	2.7	2.76
		CSC305.5	2.7	3
6	Object Oriented Programming Methodology CSL304-A	CSL304.1	2.7	2.6
		CS L304.2	2.7	2.36
		CS L304.3	2.7	2.12
		CS L304.4	2.7	2.6
		CS L304.5	2.7	2.6
		CS L304.6	2.7	2.12

7	Mini Project CSM 301- A	CSM301.1	2.7	2
		CSM301.2	2.7	2.68
		CSM301.3	2.7	3
		CSM301.4	2.7	3
		CSM301.5	2.7	3
		CSM301.6	2.7	3
		CSM301.7	2.7	2.6
8	Applied Mathematics CSC301-B	CSC301.1	2.7	3
		CSC301.2	2.7	3
		CSC301.3	2.7	3
		CSC301.4	2.7	3
		CSC301.5	2.7	3
		CSC301.6	2.7	3
9	Discrete Structures and Graph Theory CSC303-B	CSC303.1	2.7	2.52
		CSC303.2	2.7	2.52
		CSC303.3	2.7	2.76
		CSC303.4	2.7	2.04
		CSC303.5	2.7	2.04
10	Data Structures CSC303- B	CSC 303.1	2.7	2.56
		CSC 303.2	2.7	2.84
		CSC 303.3	2.7	2.84
		CSC 303.4	2.7	2.84
11	Digital Logic and Computer Architectures CSC304-B	CSC 304.1	2.7	3
		CSC 304.2	2.7	3
		CSC 304.3	2.7	3
		CSC 304.4	2.7	3
		CSC 304.5	2.7	3
		CSC 304.6	2.7	3
12	Computer Graphics CSC305- B	CO305.1	2.7	2.84
		CO305.2	2.7	2.84
		CO305.3	2.7	2.84
		CO305.4	2.7	2.76
		CO305.5	2.7	1.88
13	Object Oriented Programming Methodology CSL304 -B	CSL304.1	2.7	2.6
		CS L304.2	2.7	2.36
		CS L304.3	2.7	2.12
		CS L304.4	2.7	2.6
		CS L304.5	2.7	2.6
		CS L304.6	2.7	2.12
	Mini Project CSM 301-B	CSM301.1	2.7	2
		CSM301.2	2.7	2.68
		CSM301.3	2.7	3
		CSM301.4	2.7	3
		CSM301.5	2.7	3
		CSM301.6	2.7	3
		CSM301.7	2.7	2.6

	MINI Project CSM 401-A	CSM 401.1	2.7	3
		CSM 401.2	2.7	3
		CSM 401.3	2.7	3
		CSM 401.4	2.7	3
	Applied Mathematics IV CSC401-A	CSC401.1	2.7	2.6
		CSC402.2	2.7	3
		CSC402.3	2.7	3
		CSC401.4	2.7	3
		CSC401.5	2.7	3
		CSC401.6	2.7	2.68
	Analysis of Algorithms CSC402- A	CSC 402.1 :	2.7	2.68
		CSC 402.2 :	2.7	2.52
		CSC 402.3 :	2.7	2.44
		CSC 402.4 :	2.7	2.52
	Database Management System CSC403 -A	CSC403.1	2.7	3
		CSC403.2	2.7	3
		CSC403.3	2.7	3
		CSC403.4	2.7	3
		CSC403.5	2.7	2.52
		CSC403.6	2.7	3
	Operating System CSC404 -A	CSC404.1	2.7	2.68
		CSC404.2	2.7	2.68
		CSC404.3	2.7	2.68
		CSC404.4	2.7	2.68
		CSC404.5	2.7	2.68
		CSC404.6	2.7	2.68
	Microprocessor CSC405-A	CSC405.1	2.7	2.8
		CSC405.2	2.7	2.5
		CSC405.3	2.7	2.8
		CSC405.4	2.7	2.8
	Open Source Technology Lab CSL405 – A	CSL405.1	2.7	2.84
		CSL405.2	2.7	2.52
		CSL405.3	2.7	2.52
		CSL405.4	2.7	2.36
		CSL405.5	2.7	2.36
		CSL405.6	2.7	2.36
	MINI Project CSM 401 -A	CSM 401.1	2.7	3
		CSM 401.2	2.7	3
		CSM 401.3	2.7	3
		CSM 401.4	2.7	3
	Applied Mathematics IV CSC401 - B	CSC401.1	2.7	2.6
		CSC402.2	2.7	3
		CSC402.3	2.7	3
		CSC401.4	2.7	3
		CSC401.5	2.7	3
		CSC401.6	2.7	2.68

	Analysis of Algorithms CSC402-B	CSC 402.1	2.7	2.68
		CSC 402.2	2.7	2.52
		CSC 402,3	2,7	2,44
		CSC 402.4	2.7	2.52
	Database Management System CSC403 - A	CSC 403.1	2.7	3
		CSC 403.2	2.7	3
		CSC 403.3	2.7	2.8
		CSC 403.4	2.7	2.8
		CSC403,5	2,7	2,8
	Operating System CSC404 -B	CSC404.1	2.7	2.52
		CSC404.2	2.7	2.52
		CSC404,3	2,7	2,52
		CSC404.4	2.7	2.52
		CSC404.5	2.7	2.52
		CSC404.6	2.7	2.52
	Microprocessor CSC405- B	CSC405.1	2.7	2.8
		CSC405.2	2.7	2.8
		CSC405.3	2.7	3
		CSC405.4	2.7	2.73
	Open Source Technology Lab CSL405-B	CSL405.1	2.7	2.84
		CSL405.2	2.7	2.52
		CSL405,3	2,7	2,52
		CSL405.4	2.7	2.36
		CSL405.5	2.7	2.36
		CSL405.6	2.7	2.36
	MINI Project CSM 401-B	CSM 401.1	2.7	3
		CSM 401.2	2.7	3
		CSM 401,3	2,7	3
		CSM 401.4	2.7	3
	TCS CSC501-A	CSC501.1	2.7	3
		CSC501.2	2.7	2.76
		CSC501,3	2,7	3
		CSC501.4	2.7	3
		CSC501,5	2,7	2,52
		CSC501.6	2.7	2.8
	Software Engineering CSC502-A	CPC502.1	2.7	2.84
		CPC502.2	2.7	2.8
		CPC502,3	2,7	2,84
		CPC502.4	2.7	2.84
		CPC502.5	2.7	2.84
	Computer Network CSC503-A	CSC503.1	2.7	2.68
		CSC503.2	2.7	3.00
		CSC503.3	2,7	2,8
		CSC503,4	2,7	3
		CSC503.5	2.7	3

	Data Warehousing and Mining CSC504 -A	CSC504.1	2.7	3
		CSC504.2	2.7	3
		CSC504,3	2,7	3
		CSC504.4	2.7	3
		CSC504.5	2.7	3
		CSC504.6	2.7	3
	Probabilistic Graphical Model CSDLO5011	CSDO501.1	2.7	3
		CSDO501.2.	2.7	3
		CSDO501,3	2,7	3
		CSDO501.4	2.7	3
		CSDO501.5.	2.7	3
	Internet Programming CSDLO5012	CSDLO5012.1	2,7	3
		CSDLO5012.2	2.7	3
		CSDLO5012.3	2.7	3
		CSDLO5012.4	2.7	3
		CSDLO5012.5	2.7	3
		CSDLO5012.6	2.7	3
	Professional Communication and Ethics-2 CSL504 -A	CSL504.1	2.7	3
		CSL504.2	2.7	3
		CSL504.3	2.7	3
		CSL504.4	2.7	3
		CSL504,5	2,7	3
	Mini Project A CSM 501-A	CSM501.1	2.7	3
		CSM501.2	2.7	3
		CSM501.3	2.7	3
		CSM501.4	2.7	3
		CSM501,5	2,7	3
		CSM501,6	2,7	3
		CSM501.7	2.7	3
		CSM501.8	2.7	3
		CSM501.9	2.7	3
	Theoretical Computer science CSC501-B	CSC501.1	2.7	3
		CSC501,2	2,7	2,8
		CSC501.3	2.7	3
		CSC501.4	2.7	3
		CSC501,5	2,7	2,6
		CSC501.6	2.7	2.8
	Software Engineering CSC502-B	CSC502.1:	2.7	2.56
		CSC502.2 :	2.7	2.6
		CSC502,3:	2,7	2,44
		CSC502,4:	2,7	2,12
		CSC502.5:	2.7	2.2

	Computer Network CSC503-B	CSC503.1	2.7	2.8
		CSC503.2	2.7	2.58
		CSC503.3	2.7	2.65
		CSC503.4	2.7	2.72
		CSC503.5	2.7	2.3
		CSC503.6	2.7	2.28
	Data Warehousing and Mining CSC504-B	CSC504.1	2.7	2.73
		CSC504.2	2.7	2.74
		CSC504.3	2.7	2.73
		CSC504.4	2.7	2.73
		CSC504.5	2.7	2.73
		CSC504.6	2.7	2.73
	Professional Communication and Ethics-2 CSL504-B	CSL504.1	2.7	3
		CSL504.2	2.7	3
		CSL504.3	2.7	3
		CSL504.4	2.7	3
		CSL504.5	2.7	3
	Mini Project A CSM 501-B	CSM501.1	2.7	3
		CSM501.2	2.7	3
		CSM501.3	2.7	3
		CSM501.4	2.7	3
		CSM501.5	2.7	3
		CSM501.6	2.7	3
		CSM501.7	2.7	3
		CSM501.8	2.7	3
		CSM501.9	2.7	3
	System Programmimg and Compiler construction CSC 601-A	CSC601.1	2.7	2.36
		CSC601.2	2.7	2.68
		CSC601.3	2.7	2.2
		CSC601.4	2.7	2.2
	Cryptography and System Security CSC 602-A	CSC602.1	2.7	3
		CSC602.2	2.7	3
		CSC602.3	2.7	2.92
		CSC602.4	2.7	2.68
		CSC602.5	2.7	2.76
	Mobile Computing CSC603-A	CSC603.1	2.7	3
		CSC603.2	2.7	2.68
		CSC603.3	2.7	2.36
		CSC603.4	2.7	2.12
		CSC603.5	2.7	1.56
		CSC603.6	2.7	2.52
	Artificial Intelligence CSC 604-A	CSC604.1	2.7	2.84
		CSC604.2	2.7	2.8
		CSC604.3	2.7	2.84
		CSC604.4	2.7	2.84

	Cloud Computing CSL605-A	CSL605.1	2.7	2.7
		CSL605.2	2.7	2.8
		CSL605.3	2.7	2.8
		CSL605.4	2.7	2.7
		CSL605.5	2.7	2.8
		CSL605.6	2.7	2.8
	Quantitative Analysis CSDLO6013	CSDLO6013.1	2.7	3
		CSDLO6013.2	2.7	3
		CSDLO6013.3	2.7	3
		CSDLO6013.4	2.7	3
		CSDLO6013.5	2.7	3
	Internet of Things CSDLO6011	CSDLO6011.1	2.7	2.7
		CSDLO6011.2	2.7	2.8
		CSDLO6011.3	2.7	2.7
		CSDLO6011.4	2.7	2.8
	Mini Project 2B CSM601- A	CSM601.1	2.7	3
		CSM601.2	2.7	3
		CSM601.3	2.7	3
		CSM601.4	2.7	3
		CSM601.5	2.7	3
		CSM601.6	2.7	3
		CSM601.7	2.7	3
		CSM601.8	2.7	3
		CSM601.9	2.7	3
	System Programming and Compiler construction CSC601-B	CSC601.1	2.7	2.2
		CSC601.2	2.7	2.36
		CSC601.3	2.7	2.36
		CSC601.4	2.7	2.36
	Mobile Computing CSC603-B	CSC603.1	2.7	2.92
		CSC603.2	2.7	2.92
		CSC603.3	2.7	2.52
		CSC603.4	2.7	2.2
		CSC603.5	2.7	3
		CSC603.6	2.7	3
	Artificial Intelligence CSC 604-B	CSC 604.1	2.7	3
		CSC 604.2	2.7	3
		CSC 604.3	2.7	3
		CSC 604.4	2.7	3
		CSC 604.5	2.7	3
		CSC 604.6	2.7	3

	Cloud Computing CSL605-B	CSL605.1	2.7	3
		CSL605.2	2.7	3
		CSL605.3	2.7	3
		CSL605.4	2.7	3
		CSL605.5	2.7	3
		CSL605.6	2.7	3
	Mini Project 2B CSM601-B	CSM601.1	2.7	3
		CSM601.2	2.7	3
		CSM601.3	2.7	3
		CSM601.4	2.7	3
		CSM601.5	2.7	3
		CSM601.6	2.7	3
		CSM601.7	2.7	3
		CSM601.8	2.7	3
		CSM601.9	2.7	3
	Digital Signal Processing CSC701	CSC701.1	2.7	3
		CSC701.2	2.7	3
		CSC701.3	2.7	3
		CSC701.4	2.7	3
	Mobile Computing & communication CSC702	CSC702.1	2.7	2.76
		CSC702.2	2.7	2.76
		CSC702.3	2.7	2.76
		CSC702.4	2.7	2.53
		CSC702.5	2.7	3
	Management Information System ILO7013	ILO7013.1	2.7	3
		ILO7013.2	2.7	3
		ILO7013.3	2.7	3
		ILO7013.4	2.7	3
		ILO7013.5	2.7	3
	Big Data & Analytics CSDLO7032	CSDLO7032.1	2.7	3
		CSDLO7032.2	2.7	2.76
		CSDLO7032.3	2.7	2.8
		CSDLO7032.4	2.7	2.8
		CSDLO7032.5	2.7	3
		CSDLO7032.6	2.7	3
	Operational Research ILO7015	ILO7015.1	2.7	3
		ILO7015.2	2.7	3
		ILO7015.3	2.7	3
		ILO7015.4	2.7	3
	Project 1 CSP705	CSP705.1	2.7	3
		CSP705.2	2.7	3
		CSP705.3	2.7	3
		CSP705.4	2.7	3
	Human Machine Interaction CSC801	CSC801.1	2.7	2.7
		CSC801.2	2.7	2.7
		CSC801.3	2.7	2.8
		CSC801.4	2.7	2.7

	Distributed Computing CSC802	CSC802.1	2.7	2.75
		CSC802.2	2.7	2.8
		CSC802.3	2.7	2.75
		CSC802.4	2.7	2.66
		CSC802.5	2.7	2.8
		CSC802.6	2.7	3
	NATURAL LANGUAGE PROCESSING DLO8012	CSDLO7032.1	2.7	2.48
		CSDLO7032.2	2.7	3
		CSDLO7032.3	2.7	2.32
		CSDLO7032.4	2.7	2.8
		CSDLO7032.5	2.7	2.08
		CSDLO7032.6	2.7	2.52
	Project Management ILO8021	ILO8021.1	2.7	3
		ILO8021.2	2.7	3
		ILO8021.3	2.7	3
		ILO8021.4	2.7	3
		ILO8021.5	2.7	3
	Finance Management ILO8022	ILO8022.1	2.7	3
		ILO8022.2	2.7	3
	Cloud Computing Lab CSL 803	CSL803.1	2.7	2.7
		CSL803.2	2.7	2.8
		CSL803.3	2.7	2.8
		CSL803.4	2.7	2.7
	Project II CSP805	CSP805.1	2.7	3
		CSP805.2	2.7	3
		CSP805.3	2.7	3
		CSP805.4	2.7	3

3.3.1 Describe the assessment tools and processes used for measuring the attainment of each of the Program Outcomes and Program Specific Outcomes (10)

Institute Marks: 10

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

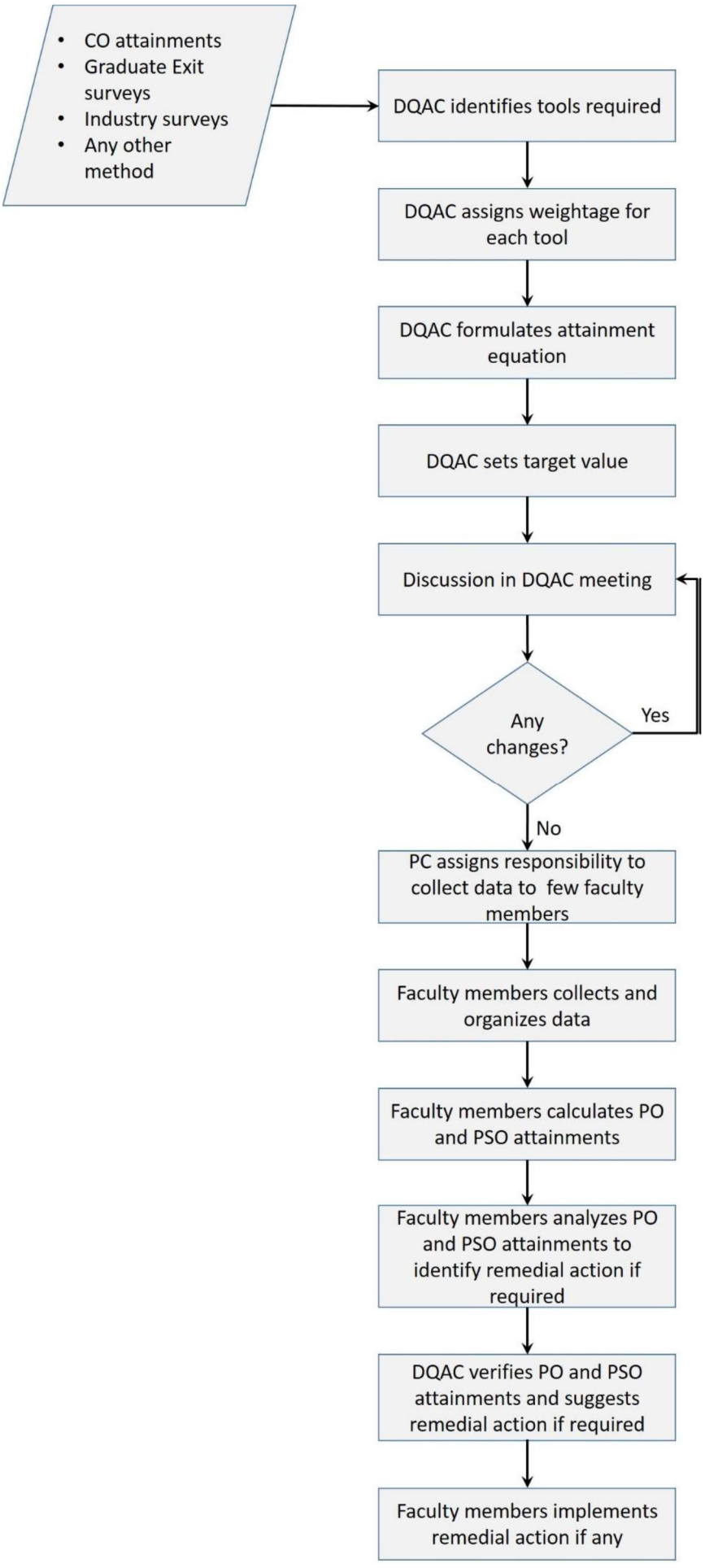
- **Course Outcome Assessment:** At the end of every semester, faculty assesses the student's attainment of specific course outcomes based on performance in specific evaluative components of a course. Data is typically provided for all students enrolled in the courses. Faculty provides assessment data 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. data is collected through survey from all students completing the graduation. 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.

- **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.

Process to Measure PO/PSO attainment:

- DQAC identifies tools required to measure PO and PSO attainment for each PO and PSO.
- DQAC assigns weightage for each tool depending on type of data, etc.
- DQAC formulates equation to calculate attainment.
- DQAC sets target level for PO and PSO attainment.
- DQAC finalizes the method/tools/target value of PO and PSO attainment calculation.
- PC assigns responsibility to few faculty members to collect data and designates one of the faculty member as coordinator.
- Respective faculty member collects the data at the end of semester/year as per the tools selected for measuring PO and PSO attainments
- Respective faculty member organizes data.
- Coordinator calculates consolidated PO and PSO attainments.
- Coordinator analyzes PO and PSO attainments.
- DQAC verifies attainment and suggests remedial action.
- DQAC ensures implementation of remedial measures to improve PO and PSO attainment at department level or sets new target value during next academic year.


CO attainments
Graduate Exit surveys
Industry surveys
Any other method
DQAC identifies tools required
DQAC assigns weightage for each tool
DQAC formulates attainment equation
DQAC sets target value
Discussion in DQAC meeting
Any changes?
Yes
No
PC assigns responsibility to collect data to few faculty members
Faculty members collects and organizes data
Faculty members calculates PO and PSO attainments
Faculty members analyzes PO and PSO attainments to identify remedial action if required
DQAC verifies PO and PSO attainments and suggests remedial action if required
Faculty members implements remedial action if any

Sample PO calculation:

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

Direct PO1 attainment (through courses): $PO1_{dm}$ **=2.70**

Indirect PO1 attainment (through graduate and alumni survey): 3

Indirect PO1 attainment (through events conducted by technical and non-technical councils): =2.83

Average of Indirect PO1 Attainment: $PO1_{idm}$ **=2.92**

Final PO1 Attainment =0.8* $PO1_{dm}$ +0.2* $PO1_{idm}$

= **2.75**

3.3.2Provide results of evaluation of PO&PSO (40)

Institute Marks: 40

PO Attainment

Course	PO1	PO2	PO3	PO4	POS	PO6	PO7	POB	PO9	PO10	PO11	PO12
CSC301-A	2.98	1	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSC301-B	3	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12
CSC302-A	2.42	2.36	PO3	PO4	PO5	PO6	PO7	PO8	2.04	2.04	PO11	2.04
CSC302-B	2.37	2.32	2.32	PO4	PO5	PO6	PO7	PO8	2.04	2.04	PO11	2.04
CSC303-A	2.77	2.84	2.84	PO4	PO5	PO6	PO7	PO8	PO9	PO10	2.84	2.84
CSC303-B	2.77	2.8	2.8	PO4	PO5	PO6	PO7	PO8	PO9	PO10	2.84	2.84
CSC304-A	2.97	2.9	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.97
CSC304-B	3	2.9	3	PO4	3	PO6	PO7	PO8	PO9	PO10	PO11	2.96
CSC305-A	2.89	2.92	2.96	PO4	2.95	PO6	1	1	3	3	1	2
CSC305-B	2.63	2.58	2.53	PO4	2.58	PO6	PO7	1.88	1.88	1.88	1.88	1.88
CSC401-A	2.88	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSC401-B	2.88	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSC402-A	2.54	2.57	2.52	PO4	PO5	PO6	PO7	PO8	2.54	PO10	PO11	PO12
CSC402-B	2.54	2.57	2.52	PO4	PO5	PO6	PO7	PO8	2.54	PO10	PO11	PO12
CSC403-A	2.92	2.92	2.92	PO4	2.92	PO6	PO7	PO8	2.14	2.14	2.14	2.75
CSC403-B	2.88	2.85	2.85	PO4	2.80	PO6	PO7	PO8	2.86	2.82	2.80	2.85
CSC404-A	2.68	2.68	PO3	2.68	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSC404-B	2.52	2.52	PO3	2.52	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSC405-A	2.73	2.7	2.65	PO4	2.70	PO6	PO7	PO8	PO9	PO10	PO11	2.7
CSC405-B	2.83	2.84	2.8	PO4	2.73	PO6	PO7	PO8	PO9	PO10	PO11	2.83
CSC501-A	2.85	2.85	2.86	2.66	PO5	PO6	PO7	PO8	PO9	2.8	PO11	2.8
CSC501-B	2.8	2.8	2.85	2.6	PO5	PO6	PO7	PO8	PO9	2.8	PO11	2.75
CSC502-A	2.83	2.83	2.84	PO4	2.84	PO6	PO7	PO8	PO9	2.8	PO11	2.8
CSC502-B	2.45	2.58	2.5	2.37	2.12	PO6	PO7	PO8	2.38	2.59	2.6	2.6
CSC503-A	2.89	2.94	2.9	PO4	2.9	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSC503-B	2.56	2.52	2.47	PO4	2.69	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSC504-A	3	3	3	PO4	3	PO6	3	PO8	3	3	3	3
CSC504-B	2.73	2.74	2.73	2.73	2.73	PO6	PO7	PO8	PO9	PO10	PO11	2.73

CSC601-A	2.36	2.36	2.38	PO4	2.2	PO6	PO7	PO8	2.36	PO10	PO11	2.36
CSC601-B	2.32	2.32	2.31	PO4	2.36	PO6	PO7	PO8	2.32	PO10	PO11	2.32
CSC602-A	2.93	2.88	2	2.84	2.68	PO6	PO7	3	2.87	2.87	PO11	2.87
CSC602-B	2.9	2.68	1.95	3	2.52	2.63	PO7	PO8	3	PO10	PO11	PO12
CSC603-A	2.37	2.64	2.64	PO4	2.58	PO6	PO7	PO8	2.52	2.52	2.52	2.52
CSC603-B	2.76	2.9	3	2	2.79	PO6	PO7	PO8	2	3	3	3
CSC604-A	2.83	2.83	2.84	PO4	2.84	PO6	PO7	PO8	PO9	2.8	PO11	2.8
CSC604-B	3	3	3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSC701	3	3	3	PO4	3	PO6	PO7	PO8	3	PO10	PO11	PO12
CSC702	2.76	2.8	2.94	PO4	2.94	PO6	PO7	3	3	3	3	3
CSC801	2.7	2.7	2.7	2.7	2.7	2.7	PO7	PO8	PO9	PO10	PO11	2.7
CSC802	2.75	2.66	2.66	2.87	2	PO6	PO7	PO8	PO9	PO10	PO11	2
CSDL501	3	3	3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSDL502	3	PO2	3	PO4	3	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSDL601	2.35	2.4	3	3	3	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CSDL602	2.75	2.75	2.75	PO4	2.75	PO6	PO7	PO8	2.75	2.75	PO11	2.75
CSDL701	2.89	2.87	2.87	2.85	2.87	3	PO7	PO8	2.95	3	3	3
CSDL801	2.53	2.54	2.54	2.62	2.54	2.30	PO7	PO8	2.47	2.52	2.52	2.34
CSILO701	3	3	3	3	3	3	PO7	PO8	PO9	PO10	3	3
CSILO702	3	3	3	3	PO5	3	3	PO8	3	PO10	PO11	3
CSILO801	3	3	3	3	3	PO6	PO7	3	3	3	3	3
CSILO802	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	3	PO12
CSL304-A	2.4	2.39	2.38	PO4	2.34	2.13	PO7	PO8	2.12	2.13	2.13	2.13
CSL304-B	2.4	2.39	2.38	PO4	2.34	2.13	PO7	PO8	2.12	2.13	2.13	2.13
CSL405-A	2.49	2.44	2.43	PO4	2.5	PO6	PO7	PO8	2.36	PO10	PO11	2.4
CSL405-B	2.49	2.44	2.43	PO4	2.42	PO6	PO7	PO8	2.4	PO10	PO11	2.36
CSL504-A	PO1	PO2	PO3	PO4	PO5	3	PO7	3	3	3	PO11	PO12
CSL504-B	PO1	PO2	PO3	PO4	PO5	3	PO7	3	3	3	PO11	PO12
CSL605-A	2.73	2.73	2.73	2.73	2.73	PO6	PO7	PO8	PO9	PO10	PO11	2.73
CSL605-B	3	3	3	3	3	PO6	PO7	PO8	PO9	PO10	PO11	3
CSL803	2.7	2.7	2.7	2.7	2.7	2.7	PO7	PO8	PO9	PO10	PO11	2.7
CSM301-A	2.34	2.34	2.68	2.5	2.68	PO6	3	PO8	3	3	3	2.6
CSM301-B	2.34	2.34	2.68	2.5	2.68	PO6	3	PO8	3	3	3	2.6
CSM401-A	3	3	3	3	3	PO6	PO7	3	3	3	3	3
CSM401-B	3	3	3	3	3	PO6	PO7	3	3	3	3	3
CSM501-A	2.33	2.25	3	PO4	3	PO6	PO7	3	3	3	2.63	2.67
CSM501-B	2.33	2.25	3	PO4	3	PO6	PO7	3	3	3	2.63	2.67
CSM601-A	3	3	3	PO4	3	PO6	PO7	3	3	3	3	2.33
CSM601-B	3	3	3	PO4	3	PO6	PO7	3	3	3	2.2	2.3
CSP705	3	3	3	PO4	3	3	PO7	3	3	3	3	3
CSP805	3	3	3	PO4	3	PO6	PO7	PO8	3	3	3	3

PO Attainment Level

Course	PO1	PO2	P03	PO4	P05	P06	PO7	PO8	P09	PO10	PO11	PO12
Direct Attainment	2.74	2.69	2.75	2.74	2.77	2.77	2.6	2.76	2.67	2.75	2.64	2.66
lndirect Attainment	2.92	2.65	3	2.57	1.95	2.53	2.49	2.5	2.07	2.54	2.52	2.05

PSO Attainment

Course	PSO1	PSO2
CSC301-A	PSO1	PSO2
CSC301-B	PSO1	PSO2
CSC302-A	2.37	2.16
CSC302-B	2.38	2.04
CSC303-A	2.77	2.77
CSC303-B	2.77	2.77
CSC304-A	2.97	PSO2
CSC304-B	2.96	PSO2
CSC305-A	2.89	3
CSC305-B	2.63	2.32
CSC401-A	PSO1	PSO2
CSC401-B	PSO1	PSO2
CSC402-A	2.54	2.54
CSC402-B	2.54	2.54
CSC403-A	2.92	2.92
CSC403-B	2.88	2.85
CSC404-A	2.68	PSO2
CSC404-B	2.52	PSO2
CSC405-A	2.71	PSO2
CSC405-B	2.49	2.52
CSC501-A	2.85	2.85
CSC501-B	2.75	2.85
CSC502-A	2.84	2.82
CSC502-B	2.38	2.38
CSC503-A	2.89	PSO2
CSC503-B	2.56	2.55
CSC504-A	3	3
CSC504-B	2.73	2.73
CSC601-A	2.2	2.2
CSC601-B	2.36	2.36
CSC602-A	2.88	2.91
CSC602-B	2.72	2.55
CSC603-A	2.37	2.52
CSC603-B	2.76	3
CSC604-A	2.84	2.82
CSC701	3	PSO2
CSC702	2.76	2.92
CSC801	2.7	PSO2

CSC802	2.75	2.66
CSDL501	3	3
CSDL502	3	PSO2
CSDL601	PSO1	PSO2
CSDL602	2.75	2.75
CSDL701	2.89	2.87
CSDL801	2.53	2.54
CSILO701	3	PSO2
CSILO702	3	3
CSILO801	3	3
CSILO802	PSO1	3
CSL304-A	2.28	2.4
CSL305-B	2.37	2.37
CSL504-A	PSO1	PSO2
CSL504-B	PSO1	PSO2
CSL605-A	2.76	PSO2
CSL803	3	3
CSM301-A	2.34	2.84
CSM301-B	2.34	2.84
CSM401-A	3	PSO2
CSM401-B	3	PSO2
CSM501-A	3	3
CSM501-B	3	3
CSM601-A	3	3
CSM601-B	3	3
CSP705	3	3
CSP805	3	3

PSO Attainment Level

Course	PS01	PSO2
CO Attainment	2.54	2.57
Direct Attainment	2.75	2.74
lndirect Attainment	1.71	1.89

4. STUDENTS' PERFORMANCE (150) Total Marks 132.50

Table 4.1

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2022-23 (CAY)	2021-22 (CAYm1)	2020-21 (CAYm2)	2019-20 (CAYm3)	2018-19 (CAYm4)	2017-18 (CAYm5)	2016-17 (CAYm6)
Sanctioned intake of the program(N)	120	120	120	120	60	60	60
Total number of students admitted in first year minus number of students migrated to other programs/ institutions plus No. of students migrated to this program (N1)	128	130	129	130	66	65	67
Number of students admitted in 2nd year in the same batch via lateral entry (N2)	12	12	12	13	6	12	12
Separate division students, If applicable (N3)	0	0	0	0	0	0	0
Total number of students admitted in the programme (N1 + N2 + N3)	140	142	141	143	72	77	79

Table 4.2

Year of entry	Total No of students admitted in the program (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	Ill year	IV year
2022-23 (CAY)	140	79	0	0	0
2021-22 (CAYm1)	142	114	116	0	0
2020-21 (CAYm2)	141	129	133	128	0
2019-20 (CAYm3)	143	112	124	124	120
2018-19 (LYG)	72	56	63	63	63
2017-18 (LYGm1)	77	61	70	68	68
2016-17 (LYGm2)	79	53	55	53	53

Table 4.3

Year of entry	*N*1 + *N*2 + N3 (As defined above)	Number of students who have successfully graduated in stipulated period of study) [Total of with Backlog + without Backlog]			
		I Year	II Year	III Year	IV Year
CAY(2022-23)	140	121	0	0	0
CAY*m*1(2021-22)	142	130	131	0	0
CAY*m*2(2020-21)	141	129	140	138	0
CAY*m3*(2019-20)	143	129	141	141	140
CAY*m4* (LYG) (2018-19)	72	63	70	70	70
CAY*m5* (LYG*m*1) (2017-18)	77	65	76	75	75
CAY*m6* (LYG*m*2) (2016-17)	79	66	76	76	76

4.1 Enrolment Ratio (20) Total Marks 20.00

Institute Marks: 20.00

	N (From Table 4.1)	N1 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2022-23 (CAY)	120	126	105
2021-22 (CAYm1)	120	130	108.33
2020-21 (CAYm2)	120	129	107.50

Average [(ER1 + ER2 + ER3) / 3]: 107.29
Assessment: 20.00

4.2 **Success Rate in the stipulated period of the program** (40) Total Marks 34.75

4.2.1 **Success rate without backlogs in any semester/ year of study** (25)

Institute Marks: 20.25

Item	Latest Year of Graduation, LYG (2018-19)	Latest Year of Graduation minus 1, LYGm1 (2017-18)	Latest Year of Graduation minus 2 LYGm2 (2016-17)
X Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and seperated division, if applicable	72.00	77.00	79.00
y Number of students who have graduated without backlogs in the stipulated period	63.00	68.00	53.00
Success Index [SI = Y / X]	0.88	0.89	0.68

Average SI [(Sl1 + Sl2 + Sl3) / 3]: 0.817

Assessment [25 * Average SI]: 20.41

4.2.2 Success rate in stipulated period (15)

Institute Marks: 14.50

Item	Latest Year of Graduation, LYG (2018-19)	Latest Year of Graduation minus 1, LYGm1 (2017-18)	Latest Year of Graduation minus 2 LYGm2 (2016-17)
X Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and separated division, if applicable	72.00	77.00	79.00
y Number of students who have graduated in the stipulated period	70.00	75.00	76.00
Success Index [SI = Y / X]	0.97	0.97	0.96

Average SI[(Sl1 + Sl2 + Sl3) / 3]: 0.97

Assessment [15 * Average SI]: 14.50

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

4.3 Academic Performance in Third Year (15)

Total Marks 13.09

Institute Marks: 13.09

Academic Performance	CAYm3 (2019-20)	LYG (2018-19)	LYGm1 (2017-18)
Mean of CGPA or mean percentage of all successful students(X)	9.27	8.85	8.24
Total number of successful students(Y)	141.00	70.00	75.00
Total number of students appeared in the examination(Z)	141.00	70.00	76.00
API [X*(Y/Z)]:	9.27	8.85	8.13

Average API [(AP1 + AP2 + AP3)/3] : 8.75

Assessment [1.5 * Average API]: 13.125

4.4 Academic Performance in Second Year (15)

Total Marks 13.46

Institute Marks: 13.46

Academic Performance	CAYm2 (2020-21)	CAYm3 (2019-20)	LYG (2018-19)
Mean of CGPA or mean percentage of all successful students(X)	8.84	9.35	8.41
Total number of successful students (Y)	140.00	141.00	70.00
Total number of students appeared in the examination (Z)	140.00	142.00	70.00
API [X * (Y/Z)]	8.84	9.29	8.41

Average API [(AP1 + AP2 + AP3)/3] : 8.85

Assessment [1.5 • AverageAPI] : 13.27

4.5 Placement, Higher Studies and Entrepreneurship (40) Total Marks 33.20

Institute Marks: 33.20

Item	LYG (2018-19)	LYGm1 (2017-18)	LYGm2 (2016-17)
Total No of Final Year Students(N)	70.00	75.00	76.00
No of students placed in the companies or government sector(X)	48.00	55.00	42.00
No of students admitted to higher studies with valid qualifying scores(GATE or equivalent State or National Level tests, GRE, GMAT etc.) (Y)	14.00	12.00	12.00
No of students turned entrepreneur in engineering/technology (Z)	0.00	0.00	0.00
x+y+z=	62.00	67.00	54.00
Placement Index [(X+Y+Z)/N]:	0.89	0.89	0.71

Average Placement [(P1 + P2 + P3)/3]: 0.83

Assessment [40 • Average Placement]: 33.20

Program Name:
Assessment Year Name: CAYm1

S. No	Student Name	Enrollment No	Employee Name	Appointment No
	Agarwal Mayur Dinesh	8584	Quantiphi	Ref. NotAvailable-/30/12/2021
2	Agrawal lsha	8585	JP Morgan	Ref. Not Available 30/04/2022
3	Almeida Clayton Denis	8587	Cognizant	19710687 20/04/2022
4	Aloj Hansie Dilip	8588	Xorient	673207 24/02/2022
5	Bilonikar Shreya Kailas	8590	Accenture	C10940209 30/03/2022
6	Biswas Simran Amit	8591	Capgemini	1117897
7	Chaube Nitin Sunil	8593	TIM	Ref. Not Available 09/06/2022
8	Colaco Raj Prakash	8596	Cognizant	1162963 02/11/2021
9	Dabre Chelsea Moses	8597	Juspay	Ref. Not Available 06/06/2022
10	Dcruz Smith Richard	8598	Xoriant	673270 11/03/2022
11	Dias Mario Jonas	8599	UBS	CIN U74999PN2015FTC157258, 09/06/202
12	Dodti Nash Michael	8600	Cognizant	19927512, 28/01/2022
13	Dsa Nigel Godfrey	8601	Dolat Capital	Ref. Not Available 21/01/2022
14	Dsilva Celine Leonard	8602	Quantiphi	Ref.Not Available 30/12/2021
15	GaurSamyak	8604	cityflo	Ref. Not Available 08/12/2021
16	George Ron Shaju	8605	Accenture	C10938495 25/03/2022
17	Hodges Lyndon Luke Allen	8608	Wissen	Ref. not Available 07/04/2022
18	Iyer Sahaana Chandramoulee	8609	JP Morgan	Ref. Not Available 28/04/2021
19	Lopes Princely Jonas	8613	Dolat Capital	Ref. Not Available 21/01/2022
20	Mangalorkar Krish Sunil	8614	Accenture	C10938690 25/03/2022
21	Mascarenhas Nicola Mary A.	8615	Cognizant	1098541 19/11/2021

22	Mascarenhas Nisha Nitin	8616	Accenture	C10938691 25/03/2022
23	Mascarenhas Samantha R.	8617	Quantiphi	Ref. Not Available 30/12/2021
24	Mendonca Carol Sierra N.	8618	TCS Ninja	TCSL/DT20218047690 14/10/2021
25	Menezes Tristan Thomas	8619	Accenture	C10940210 30/03/2022
26	Mishra Vinayak Shyamsunder	8620	JP Morgan	Ref. Not Available 28/04/2022
27	Nadar Justin Sureshkumar	8621	Cognizant	1115405 02/11/2021
28	Ninan Nijo Saju	8624	JP Morgan	Ref. Not Available 03/05/2021
29	Nunes Calvin Leo	8625	Dolat Capital	Ref. Not Available 21/01/2022
30	Phadakale Divita Chandrakant	8626	TCS Ninja	TCSL/DT20218046263 14/10/2021
31	Potdukhe Karishma Sanjeev	8628	TIM	Ref. Not Available 09/06/2022
32	Pothen Tresa	8629	IDFC First	Ref. Not Available 28/05/2022
33	Purohit Suryansh Bhupesh	8630	Carwale	Ref. Not Available 28/04/2022
34	Reddy Ganesh Bheemesh	8631	UBS	Ref. Not Available 09/06/2022
35	Rede Praditi Pramod	8632	TCS(Ninja)	TCSL/DT20218046690 01/09/2021
36	Rolwyn Raju	8634	Cognizant	1115934 02/11/2021
37	Rumao Gladden Mathew	8636	TCS(Digital)	TCSL/CT2021365976 01/09/2021
38	Sadhu Arpan	8637	Cognizant	1151417 02/11/2021
39	Sharma Sheetal Tarsam	8639	Cognizant	1090520 02/11/2021
40	Shetty Sanath Krishna	8640	Forcepoint	Ref. Not Available 15/03/2022
41	Tijo K Thomas	8644	Quantiphi	Ref. Not Available 30/12/2021
42	Tamar Ayush Devendra	8645	Carwale	Ref. Not Available 23/07/2021
43	Tripathi Sudheer Vijaykumar	8646	ClearGlass	Ref. NotAbailable 2/11/2021
44	Yadav Ayush Ramkaran	8648	Cognizant	1180637 25/10/2021
45	Navia Vijay D'silva	8663	TCS(Ninja)	TCSL/DT20206785789 01/09/2021
46	Aaron Domingo	8763	Accenture	C10938500 05/03/2022
47	Aadarsh Kshirsagar	8765	Accenture	C10938494 25/03/2022
48	Pai Aditi Balkrishna	8766	Edge CRM	T-G/IN/Mum/FRD/Offer/425, 23/09/2022

Assessment Year Name : CAYm2

S. No	Student Name	Enrollment No	Employee Name	Appointment No
	AHIRRAO ABHISHEK NARESH	8312	Quantiphi	Ref. Not Available 05/02/2021
2	BAGRECHA PRANAY MANOJ	8314	Dolat Capital	Ref. Not Available 30/03/2021
3	BARBOZA DEVIN JEROME	8315	Quantiphi	Ref. Not Available 05/02/2021
4	SARETTO PRINCETON BAPTIST	8316	Interactive Brokers (IB)	Ref Not Available 03/06/2021
5	BASU AMURTO AMLAN	8317	TIAA	Ref Not Available 17/11/2020
6	BINDRA SIMRAN PREET KAUR	8319	ICICI Securities	CJ22154793 27/07/2021
7	CAROL SEBASTIAN	8320	Dolat Capital	Ref. Not Available 30/03/2021

8	CHERUTHURUTHY KEVIN RUFFIN	8321	Jaro Education	Ref. Not Available 23/09/2020
9	CHOWDHURY PRATIK VINAYAK	8322	Dolat Capital	Ref. Not Available 30/03/2021
10	CORREA ARIANE JEAN ASHWIN	8324	Oracle	12633820 04/05/2021
11	DMELLO PRINCE ALEX	8329	Cognizant	14676368 22/03/2021
12	DMELLO RIA MICHAEL	8330	Deloitte	Ref. Not Available 27/07/2021
13	DSA MARIO PHILIP	8332	Quantiphi	Ref. Not Available 05/02/2021
14	DSOUZA ELVIS EDWIN	8333	UBS	Ref. No. Not Available 09/03/2021
15	DSOUZA SHERWYN ROHIT	8334	Xoriant Technologies	408273 06/11/2020
16	DSOUZA SIMRAN JOHN	8335	Accenture	C9369889 06/04/2021
17	DSOUZA SUSAN VINCENT	8336	Neeble	NTHR/21-22N027 26/04/2021
18	EMMIMA GNANARAJ	8337	TCS	TCSL/CT20203388667/Mumbai 19/12/2020
19	FERNANDES CALISTA LUIS	8338	Oracle	12634080 04/05/2021
20	GUPTARIYA	8339	Accenture	C9363249 03/04/2021
21	KHAJURIAADITYA	8341	Tata Technologies	Ref Not Available 19/06/2021
22	KUNDER MOHIT SATISH	8344	Accenture	C9363252 03/04/2021
23	LOPES REYNOLD JAMES	8345	Capgemini	Ref. Not Available 05/05/2021
24	MENEZES LEESA ROBIN	8347	Oracle	12634255 04/05/2021
25	MISHRA MAYANK MANMOHAN	8348	Xoriant Technologies	408278 04/11/2020
26	MISHRA SHAILESHKUMAR	8349	Qunatiphi	Ref. Not Available 05/02/2021
27	MISHRA SHUBHAM SANTOSH	8350	Quantiphi	Ref. Not Available 05/02/2021
28	MULAKKALANUPJOSEPH	8351	Quantiphi	Ref. Not Available 04/11/2020
29	NAZARETH DARLENE DOMINIC	8353	TCS Digital	TCSL/CT20203391089/Mumbai 29/10/2020
30	NORONHA SANFER SAMSON	8354	Quantiphi	Ref. Not Available 05/02/2021
31	OZA DISHANK KAILASH	8355	Xoriant Technologies	408272 04/11/2020
32	PILLAI SHERWIN JESUDAS	8358	Quantiphi	Ref. Not Available 05/02/2021
33	RACHEL JOSE	8361	Xoriant Technologies	408283 05/11/2020
34	SAMUEL DAVIS	8365	Quantiphi	Ref. Not Available 05/02/2021
35	SETHI DEEPANSHU DEEPAK	8366	Capgemini	311958 Date not Available
36	SHAHI SURYA PRATAP	8367	Accenture	C9404456 16/04/2021
37	SHAIKH KHALID	8368	BrowserStack	Ref Not Available 06/06/2021
38	SHETTY KAUSTUBH	8369	TCS Ninja	TCSL/CT20203508868Mumbai 19/12/2020

39	SRIVASTAVA MAYANK	8370	Xoriant Technologies	408277 04/11/2020
40	SUSMITA MATHEW	8371	Xoriant Technologies	408268 15/10/2020
41	THARAYILALBIN JIMMY	8372	TIAA	Ref. Not Available 18/11/2020
42	TRIVEDI HARDIK PRAKASH	8373	Cyberlnc	Ref. Not Available 29/01/2021
43	VAZ CASSIA HILARY	8374	UBS(PPO)	Ref. Not Available 03/03/2021
44	YADAV ALOK KUMAR RAMLAL	8375	TCS Ninja	TCSL/DT20206839582 29/10/2020
45	YADAV NAGENDRA	8376	Xoriant Technologies	408276 04/11/2020
46	BAHETI AMAN ANAND	8468	Capgemini	Ref & DATE. Not Available
47	GUPTA SAHIL KRISHNA	8470	Oracle	12634185 03/05/2021
48	KUDEL ALRICH AGNEL	8471	Capgemini	240807 Date not Available
49	LOBO PRANAY SHEEHAN PETER	8472	Protegrity	Ref.Not Available 166/06/2021
50	MAHALUNGE ABHIJITH BALU	8473	ICICI Securities	155198 30/07/2021
51	MALE MEHEK BHUPESH	8474	UBS(PPO)	Ref.Not Available 26/02/2021
52	MISHRA SAKSHI SHYAMBIHARI	8475	MindTree	Ref.Not Available 24/06/2021
53	PEREIRA CLEONA CHARLES	8477	TCS Ninja	TCSL/DT20206945658/Mumbai 19/12/2020
54	REYNA BINNY	8478	Accenture	C9395840 13/04/2021
55	VAZ NASH RAJESH	8479	ABM	ABMH/HR/OP/PK/Lo0/1687 17/07/2021

Assessment Year Name : CAYm3

S. No	Student Name	Enrollment No	Employee Name	Appointment No
1	AISHWAR1YA SEBIN SHEEBA	7916	UBS	Ref.Not Available-15-06-2020
2	ANNE ISAI PANDIA RAJAN JAYAMANI	8160	LTI	LTI/HR/Campus/2020 21-08-2019
3	ATRE ATHARVAATUL SHILPA	7918	HR-JAPAN Citiustech	Ref.Not Available-26-09-2019
4	AUGUSTIN RENITA MARY	7967	MAO SOFTWARE	Not Available-22-07-2020
5	BHATKAR MANTHAN KIRAN RAJESHWARI	8161	TCS	TCSL/DT20195435235/Mumbai 13-09-2019
6	BHATKAR SUMEDH SANTOSH SUSHMA	8162	TCS	TCSL/CT20192736825/Mumbai 13-09-2019
7	BHUJBAL SHREYA DATTU JYOTI	7919	HR-JAPAN,Citiustech	Ref. Not Available-26-09-2019
8	CHOBHE DHANANJAY	7921	INTERACTIVE	Ref.Not Available-03-07-

	RAMNATH NISHIGANDHA		BROKERS	2020
9	CORDEIRO ROCHELLE CYPRIAN HILDA	7922	GEP	Ref.Not Available-16-07-2020
10	D'SOUZA BRINEL VALERIAN VEENA	7933	DELLOIT	Ref.Not Available-17-01-2020
11	DANIEL LENSON VINOY LISSY	7924	TCS DIGITAL	TCSL/CT20182512928/Mumbai 12-09-2019
12	DCOSTA STEVE SEBASTIAIN HELEN	7925	TCS	TCSL/CT20192777524/Mumbai 12-09-2019
13	DEO SAYALI ARUN KIRTI	7926	LTI	LTI/HR/Campus/2020 21-08-2019
14	DMELLO MACWILL WILLIAM SHAILA	7929	TCS	TCSL/CT20192793763/Mumbai 13-09-2019
15	DMELLO RYAN ANDREW FATIMA	7930	UTOPIA	UT/0101/2020/00002 21-07-2020
16	DODHIYA SUNNY DINESH ROZINA	7932	CRIMSON & CO	Not Available-21-01-2020
17	FALCAO LEON LESLIE VELGA	7935	Capgemini	HR/Campus/LO14158607/1 07-11-2019
18	FERNANDES KENRICK ANTHONY SELMA	7936	ZS	Not Available-26-11-2019
19	GEORGE SOLOMON JOSE MARY	7938	GEP	NA-16-07-2020
20	HIPPURGIKAR SANJEEV RAVINDRANATH SARASWATI	7940	NSEIT	NSEIT/HR/OL/SD/04330
21	JARE GAURI MAHESHKUMAR SHILPA	7941	QUANTIPHI	Ref.Not Available-07-09-2020
22	KALNAD NEHAL VINOD PRAMILA	7943	TCS DIGITAL	TCSL/DT20184482051/Mumbai 12-09-2019
23	KARTICK HARIHARAN PREMA	7944	ZS	Ref. Not Available-26-12-2019
24	LOBO HAZEL FELIX HELEN	7946	BNP	Ref. Not Available
25	MANJREKAR RAJESH GANESH GEETA	8169	AMAZON DSPL	Ref. Not Available
26	MOLATH ALEX SAJI JESSY	7952	ZS	Not Available-26-12-2019
27	NADAR PRABHU ANAND SUSHIL KUMAR PREMA	7954	TCS	TCSL/DT2019553845/Mumbai 13-09-2019
28	NICHOLAS JEROME RACHEL JESSIE	7942	MSCI	Not Available-21-01-2020
29	PATILADITYAVINOD VIDULA	7958	BROAD INFINITY	Not Available
30	PAYAPILLY MERLIN KURUVILLA SHEENA	7959	ZS	Not Available-26-12-2019
31	PEREIRA CLAYTON SOHAN CANUTE SHALINI	7960	INTERACTIVE BROKER	Not Available-03-07-2020

32	PEREIRA NERISSA GODFREY ARCHANA	7961	LTI	LTI/HR/Campus/2020 21-08-2019
33	PINTO DAVINA LYDIA VINCENT FLORY DAISY	7962	LTI	LTI/HR/Campus/2020 21-08-2019
34	RAUT SHREYA BHARAT HARSHALA	7966	MAQ SOFTWARE	Not Available-22-07-2020
35	RODRIGUES CAJETAN CHRISTOPHER SABRINA	7968	ZS	Not Available-26-12-2019
36	RODRIGUES KEVIN MOSES SUSHILA	7969	LTI	LTI/HR/Campus/2020 21-08-2019
37	RODRIGUES LINNET NICHOLAS LALITA	7971	LTI	LTI/HR/Campus/2020 21-08-2019
38	SAKHARDANDE VEDANT ATMARAM UTPALA	7973	LINCKUP	Not Available-01-06-2020
39	SALVI SUYASH BHALCHANDRA BHAGYASHRI	7974	LTI	LTI/HR/Campus/2020 21-08-2019
40	SHETTY RAKSHA SADANAND GEETA	8171	NSEIT	NSEIT/HR/OL/SD/04257
41	SREEKUMAR SUYASH SMITA	7976	TCS DIGITAL	TCSL/DT20184510584/Mumbai 12-09-2019
42	VADAKKEPARAMPILANOL KURIAN NIMMI	7978	GEP	Not Available-16-07-2020

4.6 Professional Activities (20) Total Marks 18.00

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

Institute Marks : 5.00

To facilitate the students to enhance their technical expertise, the department of Computer Engineering has initiated the following student chapters:

- CSI
- CODELABS
- Mozilla
- Cyber Security
- Gaming Developer Club
- Google Student Developers Club
- IEEE
- IEEE WIE

These student chapters focus on imparting knowledge that is beyond the scope of the academic curriculum. In a semester, each student chapter organizes at least two technical events. Students are encouraged to join multiple student chapters. They plan industrial visits, workshops, competitions, and hackathons to give students hands-on experience and practical knowledge. These activities assist students in developing organizational skills, leadership qualities, teamwork, and

communication abilities. Students improve their technical knowledge, sharpen their engineering skills, and learn new technologies by participating in these activities.

Year 2019-20						
Sr. No	**Name of the Event**	**Date**	**Name of the speaker and Organization (if any)**	**Description/Purpose**	**Nos of participants**	**Organized by**
1	LAN Gaming (Counter Strike 1.6) **(Inter College)**	30/09/2019	-	It was a non-technical event during the college fest Synergy. LAN Gaming (Counter Strike 1.6), a multiplayer game which was played in the gaming battle zone.	20	CSI CRCE
2	React JS Workshop **(Intra College)**	04/10/2019	Mr. Khalid Shaikh	The speaker giving a quick gist about JavaScript and this was followed by enlightening the audience about React JS.	22	CSI CRCE
3	Industrial Visit to Shimla/ Manali/ Chandigarh **(Intra College)**	27/12/2019 to 04/01/2020	-	The objective of the visit was to help students gain first hand information regarding the functioning of the industry. This provided them with an opportunity to interact with the industrial professionals giving them a deeper insight into the practical implementation of the theoretical knowledge.	140	CSI CRCE in collaboration with ACM, IEEE-WIE and SAE
4	Intellectual Property Rights Session **(Intra College)**	23/01/2020	Dr. Bhushan Patil	The session introduced the basic concept of IPR. The speaker emphasized on the four types of IPR which includes patents, copyrights, trademarks and trade secrets and further the students were briefed on its	155	CSI CRCE in collaboration with IIC CRCE

				importance and proper management.		
5	Competitive Programming Session **(Intra College)**	27/01/2020	Mr. Gaurav Sen and Mr. Khushan Sen	The speakers introduced the concept of Competitive Programming and the students were guided on how and when to begin Competitive Programming mainly by being perfect in time complexity. Step wise instructions were given on this topic. Importance of every essential topic was explained such as that of Data Structures and Algorithms and core languages. The speakers also shared their experiences and gave some tips to be followed before facing an interview.	266	CSI CRCE
6	Poster Presentation Competition **(Intra College)**	31/01/2020	-	The aim of the event was to make something innovative and the participants had to inculcate innovation into their posters.	35	CSI CRCE in collaboration with IIC CRCE
7	Algoholic 1.0 **(Inter College)**	10th August 2019	-	A coding competition that is held online so that students can take part from the comforts of their houses and compete with various students, for exposure	100	Codelabs CRCE
8	Machine Learning Workshop **(Intra College)**	24 August 2019	Mr. Princeton Baretto	This workshop was held by the council for the Second Year students. An introduction to the Python language and in depth focus on Machine Learning was done. Students from all branches attended this	75	Codelabs CRCE

				workshop.		
9	Python and Introduction to Machine Learning **(Intra College)**	21st August 2019	Princeton Baretton, Albin Tharayil, Sanfer Noronha	This workshop was organized for the students of First Year of all branches. Students were taught the basics right from scratch and a brief introduction to Artificial Intelligence was made.	75	Codelabs CRCE
10	Node JS **(Intra College)**	03/08/2019	Mr. Thompson Naidu	The purpose of this event was to host a seminar, where students could learn to use it as a single programming language to write both front end and back end web application. Students were also introduced to E6 and its features, understanding it's core module. It was a hands-on workshop and basics of HTML and JavaScript were the prerequisites.	86	Mozilla Campus Club
11	Mongo DB **(Intra College)**	29/08/2019	Mr. Nehal Kalnad	The purpose of this event was to host a seminar, where students could be introduced to the basics of API in order to build one. It was a hands-on workshop which ended with a positive feedback from the students.	86	Mozilla Campus Club
12	(Synergy Event) Classroom Cricket **(Inter College)**	23/08/2019	-	It was a simple game where you could play cricket indoors without using a cricket bat. It was an innovative attempt to play an otherwise outdoor sport indoors	-	Mozilla Campus Club
13	HTML, CSS and Bootstrap Workshop **(Intra College)**	25/01/2020	Rathil Patel, Samyak Gaur and Yameen Ajani	The purpose of this event was to host a workshop where students could learn how to use HTML	48	Mozilla Campus Club

				and CSS. It was a hands-on workshop and no prior knowledge was required for the students to attend the workshop.		
14	Papparazzi	30 th August 2019		organized games and fun activities in 'SYNERGY'. The game tested the convincing skills of the participants and the product which was sold the fastest won the prize.	30	IEEE-CRCE
15	Field Visit to MICA	Saturday, 21st September2019	Mr. Shoaib Aslam, Sr. Engineer (MICA Labs)	This visit was organized for the students so that they may have the knowledge of various Automation and Control Systems associated with the Marine Industrial Sector.	20	IEEE CRCE
16	Industrial Visit	27th of December to 4th of January	Mr. Rajiv Kumar, the resource person at A2IT Pvt. Ltd.	1. Visit to Visions Software Pvt. Ltd. (Chandigarh) 2. Visit to Auscan Academy of Information Technology (Chandigarh) 3. Visit to Micro Turner Group, Baddi (Himachal Pradesh) 4. Visit to Aar Kay Shawl Industries, Bhuntar – Kullu (Himachal Pradesh)	Above 92 students	IEEE-CRCE
17	International Women's Day Celebration	13th March 2020	Ms. Prema Mishra Founder of Catapult	The theme for International Women's Day this year was, "Women in Entrepreneurship", which emphasizes innovation by women and girls, for women and girls, at the heart of efforts to ignite the passion of Entrepreneurship.	More than 70 students	IEEE-CRCE

18	Papparazzi	30 th August 2019		organized games and fun activities in 'SYNERGY'. The game tested the convincing skills of the participants and the product which was sold the fastest won the prize.	30	IEEE-WIE CRCE
19	Field Visit to MICA	Saturday, 21st September2019	Mr. Shoaib Aslam, Sr. Engineer (MICA Labs)	This visit was organized for the students so that they may have the knowledge of various Automation and Control Systems associated with the Marine Industrial Sector.	20	IEEE-WIE CRCE
20	Industrial Visit	27th of December to 4th of January	Mr. Rajiv Kumar, the resource person at A2IT Pvt. Ltd.	1. Visit to Visions Software Pvt. Ltd. (Chandigarh) 2. Visit to Auscan Academy of Information Technology (Chandigarh) 3. Visit to Micro Turner Group, Baddi (Himachal Pradesh) 4. Visit to Aar Kay Shawl Industries, Bhuntar – Kullu (Himachal Pradesh)	Above 92 students	IEEE and IEEE-WIE CRCE
21	SPARKC	17 th January,2021	WIE Council Members	Orphanage children of 12 to 18 age range from Fr Agnel Ashram were explained the concepts of General Science like Electromagnetism and Reflection of light in water with practical demonstration.	21	IEEE-WIE CRCE
22	Code Breakers	30th January 2020,	WIE Branch Counsellor	The essence of the event was to test the knowledge of students who are familiar with the basics of programming languages like C or	63	IEEE-WIE CRCE

				Java. Each participants were given a different set of 10 Questions.		
23	International Women's Day Celebration	13th March 2020	Ms. Prema Mishra Founder of Catapult	The theme for International Women's Day this year was, "Women in Entrepreneurship", which emphasizes innovation by women and girls, for women and girls, at the heart of efforts to ignite the passion of Entrepreneurship.	More than 70 students	IEEE-WIE CRCE

Year 2020-21						
Sr. No	**Name of the Event**	**Date**	**Name of the speaker and Organization (if any)**	**Description/Purpose**	**Nos of participants**	**Organized by**
1	Web Development Bootcamp **(Intra College)**	10/10/2020	Mr. Rathil Patel	A detailed explanation about HTML, CSS, JavaScript was given which helped the participants to master the fundamentals and improve their overall knowledge in the field of web development.	83	CSI CRCE
2	Unscript Rookie's Hackathon 2k20 **(National Event)**	21/11/2020 and 22/11/2020	-	The primary goal of this event was to raise awareness of technical talent and foster a competitive, yet cooperative, and congenial culture for talented individuals. It also allowed **participants from all over India** to connect with Industry personnel's, faculty mentors, and most importantly, with each other.	200	CSI CRCE in collaboration with ACM CRCE
3	My Story – Motivational Session By Successful Innovators **(Intra College)**	28/11/2020	Ms. Vandana Thakur	The objective of the event was to enlighten the young minds about entrepreneurship and start ups	73	CSI CRCE in collaboration with IIC CRCE

4	My Story-Landing a Dream Job and Living A startup Dream **(Intra College)**	07/04/2021	Mr. Gaurav Sen	The objective of the event was to help the students to understand and clear their doubts regarding placements and to get guidance on how they can land to their dream job and also enlighten the students about start ups and entrepreneurship.	46	CSI CRCE in collaboration with IIC CRCE
5	Workshop on Prototype/ Process Design and Development **(Intra College)**	10/04/2021	Mr. Amit Sanjay Lokhande	The objective of the event was to help the students to understand what exactly is process design and development (Prototyping) and also to enlighten the young minds about entrepreneurship and start ups by developing their own ideas and achieving success in it.	30	CSI CRCE in collaboration with IIC CRCE
6	How to start with Data Science By Krish Naik **(Inter College)**	26th September 2020	Mr. Krish Naik	Binary Talk Episode 1. A webinar on Data Science by an experienced data scientist and youtuber, Krish Naik.	120	Codelabs CRCE
7	Algoholic 1.0 **(Intra College)**	11th October 2020	-	Online Coding competition held on Hackrrank for the students of Third and Second Year. The problems used concept of Data Structures and Algorithms	42	Codelabs CRCE
8	Object Oriented Programming In Coding Interviews **(Intra College)**	25th October 2020	Mr. Akash Palghadmal and Mr. Princeton Baretto	Binary Talk Episode 2. An interactive session on Object Oriented Programming, how to prepare for coding interviews and ace them.	60	Codelabs CRCE
9	Unscript 2k20 (**National Event)**	21st - 22nd November	-	National Level Annual Hackathon	140	Codelabs CRCE in

		2020		Unscript 2k20. The hackathon had teams competing by developing products in their selected domains of Web/App Development, ML/AI and Security/Blockchain. The event was conducted online.		collaboration with Mozilla Campus Club CRCE
10	Design Thinking, Critical Thinking and Innovation Design **(Intra College)**	29th November 2020	Edwin Clement	A webinar on Design Thinking, Critical Thinking and Innovation Design	75	Codelabs CRCE in collaboration with IIC CRCE
11	Competitive Coding and Placement Preparation for Software Development Roles In Top Companies **(Inter College)**	21st February 2021	Mamta Kumari (PrepBytes)	An online workshop on competitive programming and placement preparation in companies like, Amazon, Microsoft, Google, etc.	120	Codelabs CRCE in collaboration with PrepBytes
12	How to plan for a Startup's ethical and legal steps **(Intra College)**	28th April 2021	Prof. Swati Ringe	A webinar on how to plan and go about with building a startup. The webinar covered some ethical and legal steps for the same.	75	Codelabs CRCE in collaboration with IIC CRCE
13	Algoholic 2.0 **(Intra College)**	2nd May, 2021	-	Online Coding competition held on Hackrrank for the students of Third and Second Year. The problems used concept of Data Structures and Algorithms	55	Codelabs CRCE
14	AWS Certification **(Intra College)**	31/10/2020	Mr. Pranit Raje	The main purpose was to guide the participants on the roadmap to get AWS certified and its scope in the near future. The speaker, being four times AWS certified himself, also shared his personal experience and its benefits.	147	Mozilla Campus Club CRCE

15	UnScript 2k20 **(National Level)**	21/11/2020 to 22/10/2020	-	National Level Annual Hackathon Unscript 2k20. The hackathon had teams competing by developing products in their selected domains of Web/App Development, ML/AI and Security/Blockchain. The event was conducted online.	140	Mozilla Campus Club CRCE in collaboration with Codelabs CRCE
16	Design Validation **(Intra College)**	5/12/2020	Mr. Ismail Akbani	The main purpose of the session was to introduce the participants to the various design validation models, the process and the phases of the double diamond approach with its significance.	55	Mozilla Campus Club CRCE in collaboration with IIC CRCE
17	Roadmap to become CyberSecurity Specialist **(Intra College)**	27/03/2021	Mr. Rohit Date	The main aim of the event was to introduce the participants to Cyber Security and its various domains thus highlight its highly growing significance. The participants were also guided about the pre-required skills to become a Cyber Security Specialist and the number of paths, certifications and projects to conquer it	50	Mozilla Campus Club CRCE
18	Prototype Validation **(Intra College)**	10/04/2021	Mr. Rudragouda Patil	The main agenda of the session was to introduce the participants to the importance identifying the problem and passion, validation of problem and prototype and validating the minimum variable product with customer which can help one to convert a prototype into a start-	37	Mozilla Campus Club CRCE in collaboration with IIC CRCE

				up.		
19	Entrepreneurs hip and Innovation as Career Opportunit **(Intra College)**	9 th November 2020	Ayush Jain and Farhan Shaik	IEEE & WIE in collaboration with IIC presents to you a Webinar on the topic "Entrepreneurship and Innovation as Career Opportunity"	72	IEEE-CRCE
20	Android Developing Webinar **(Intra College)**	12th February 2021	Sir Ninand Khanvilkar and his team	This workshop enabled participants to understand the Android Development process. They introduced the course that they provide for android coding, shared benefits of the course, timeline, stages and more.	37	IEEE-CRCE
21	Webinar on Technical Paper Writing**(Intra College)**	23rd February 2021	Dr. Sapna Prabhu	This workshop was a success as participants learned about Technical Paper Writing with hands on experience. She encouraged students to write technical papers and publish them. This workshop will be helpful to the participant, as an emerging frontier to deal with problems and areas of technical paper writing and research	55	IEEE-CRCE
22	Crescendo-Technical Paper Presentation Competition **(Intra College)**	19th March 2021	Prof. Monica Khanore	It is an Annual technical paper presentation competition organised by IEEE-WIE CRCE to encourage participants to express their project in terms of Writing and enhancing their technical skills	42	IEEE-CRCE
23	Crescendo-Project Competition **(Inter College)**	21st March 2021	Mr. Dilip Chandra and Dr. S.S. Rathore	The competition was held to focus on the importance of project and practical	65	IEEE-CRCE

				implementations of innovative ideas in engineering.		
24	Webinar on Successful Start-up Founders**(Intra College)**	10th April 2021	Mr. Nirmal Topiwala	Mr Nirmal Topiwala is Chief Business Officer at AJACKUS.His purpose is Enabling businesses to build agile and accountable technology teams that can deliver results in a secure and scalable way. At Ajackus, He introduced widely accepted constitution of diverse technologies that can deliver solutions to any business problem. This event was helpful to the participants, budding entrepreneurs as we know Entrepreneurs who have prior work experience bring much more value to the world of entrepreneurship	51	IEEE-CRCE
25	Android Developing Webinar**(Intra College)**	12th February 2021	Sir Ninand Khanvilkar and his team	This workshop enabled participants to understand the Android Development process. They introduced the course that they provide for android coding, shared benefits of the course, timeline, stages and more.	37	IEEE and IEEE-WIE CRCE
26	Webinar on Technical Paper Writing**(Intra College)**	23rd February 2021	Dr. Sapna Prabhu	This workshop was a success as participants learned about Technical Paper Writing with hands on experience. She encouraged students to write technical papers and publish them. This workshop will be helpful to the	55	IEEE and IEEE-WIE CRCE

				participant, as an emerging frontier to deal with problems and areas of technical paper writing and research		
27	Women's Day Celebration **(Intra College)**	12th March 2021	Chairperson of "WEE-Women Entrepreneurs Enclave" and Owner of shree OM Communication and Solutions	Many students' boys as well as girls from the college actively participated for the event and showed their enthusiasm. Father gave a wonderful speech on women empowerment. Our Principal ma'am gave a speech on women leading the world. There were live performances as well as recorded performances	100	IEEE-WIE CRCE
28	Crescendo-Technical Paper Presentation Competition **(Intra College)**	19th March 2021	Prof. Monica Khanore	It is an Annual technical paper presentation competition organised by IEEE-WIE CRCE to encourage participants to express their project in terms of Writing and enhancing their technical skills	42	IEEE and IEEE-WIE CRCE
29	Crescendo-Project Competition**(Inter College)**	21st March 2021	Mr. Dilip Chandra and Dr. S.S. Rathore	The competition was held to focus on the importance of project and practical implementations of innovative ideas in engineering.	65	IEEE and IEEE-WIE CRCE
30	Webinar on Successful Start-up Founders **(Intra College)**	10th April 2021	Mr. Nirmal Topiwala	Mr Nirmal Topiwala is Chief Business Officer at AJACKUS.His purpose is Enabling businesses to build agile and accountable technology teams that can deliver results in a secure and scalable way. At Ajackus, He introduced widely	51	IEEE and IEEE-WIE CRCE

				accepted constitution of diverse technologies that can deliver solutions to any business problem. This event was helpful to the participants, budding entrepreneurs as we know Entrepreneurs who have prior work experience bring much more value to the world of entrepreneurship		

Year 2021-22						
Sr. No	**Name of the Event**	**Date**	**Name of the speaker and Organization (if any)**	**Description/Purpose**	**Nos of participants**	**Organized by**
1	My Story – Motivational Session By Successful Innovators **(Intra College)**	25/09/2021	Ms. Neelam Bhayre	The objective of the event was to enlighten the young minds about entrepreneurship and start-ups.	48	CSI CRCE in collaboration with IIC CRCE
2	Cyber Security: Career and Business Opportunities **(Intra College)**	03/10/2021	Mr. Shuvamoy Roy	The objective of the event was to help students understand the job, start-ups and entrepreneurship opportunities in 'Cyber Security' Domain.	62	CSI CRCE in collaboration with IIC CRCE
3	Workshop On Developing A CoronaVirus Tracker Software**(Inter College)**	23/10/2021	Mr. Swastik Sharma	The objective of the session was to introduce and explain young minds the various aspects of how to start developing a software that hits various APIs and displays the number of coronavirus cases in the response.	49	CSI CRCE
4	Unscript Rookie's Hackathon 2k20(**National Level)**	22/01/2022 and 23/01/2022	-	The primary goal of this event was to boost the innovation culture and further establish the idea-sharing, effective collaboration and creativeness driven	250	CSI CRCE in collaboration with ACM CRCE

				by enthusiasm towards a shared goal. The hackathon allowed the participants to connect with Industry personnel's, faculty mentors, and most importantly, with each other.		
5	Workshop on Prototype/ Process Design and Development **(Intra College)**	09/02/2022	Mr. Amit Sanjay Lokhande	The objective of the event was to help the students to understand what exactly process design and development (Prototyping) is and to enlighten the young minds about entrepreneurship and startups by developing their own ideas and achieving success in it.	56	CSI CRCE in collaboration with IIC CRCE
6	Mystery Query Event for Crescendo Technical Fest **(Inter College)**	17/03/2022	-	The idea for the event was based on MySQL Murder Mystery.	40	CSI CRCE in collaboration with The Students' Council
7	Algoholic 1.0 **(Intra College)**	19th September 2021	-	Online Coding competition held on Hackrrank for the students of Third and Second Year. The problems used concept of Data Structures and Algorithms.	104	Codelabs CRCE
8	Binary Talk Episode: 1 Competitive Programming (Efficient Solution) with Amurto Basu **(Intra College)**	26th September 2021	Mr. Amruto Basu	This event was hosted for the second and third year students to encourage them to start competitive coding. Such events motivate students to think unorthodoxically and come up with new techniques to find solutions to existing problems.	60	Codelabs CRCE
9	GRE/GMAT	19th October	Preyash Shah,	A webinar conducted	114	Codelabs

	webinar **(Inter College)**	2021	LilacBuds	based on GRE/GMAT examinations, procedure to follow and other information related to post graduation.		CRCE in collaboration with Lilac Buds
10	Webinar on "Design Thinking, Critical Thinking and Innovation Design" **(Intra College)**	22nd October 2021	Mr. Kashyap Sheth	The objective of the event was to encourage and motivate students to think unorthodoxically and come up with new techniques to find solutions to existing problems innovatively. Also to enlighten the young minds about entrepreneurship and startups by developing their own ideas and achieving success in it.	60	Codelabs CRCE in collaboration with IIC CRCE
11	Unscript 2k22 (**National Level)**	22nd - 23rd January 2022	Ms. Ipsita Bhattacharya, J.P. Morgan Chase (Chief Guest)	National Level Annual Hackathon Unscript 2k22. The hackathon had teams competing by developing products in their selected domains of Web/App Development, ML/AI, Security/Blockchain and an innovation domain. The event was conducted online.	240	Codelabs CRCE in collaboration with Mozilla Campus Club CRCE
12	Webinar on "How to plan for Start-up and Legal & Ethical Steps **(Intra College)**	7th February 2022	Prof. Swati RInge	The objective of the event was to provide students an insight of Legal and Ethical Steps to be followed while running a start-up. Also to enlighten the young minds about entrepreneurship and startups by developing their own ideas and achieving success in it.	55	Codelabs CRCE in collaboration with IIC CRCE

13	Code Hunt event for Crescendo **(Inter College)**	17th March 2022	-	2 round competition, the first round consisted of an encoded text which the participants were supposed to decode which will result in an algorithm. In the second round participants were given a problem statement for which a program was to be written, the computer screen for this round was turned off. The first round was elimination round and participants were allowed to use any programming language of their choice.	43	Codelabs CRCE in collaboration with The Student Council
14	Linux Security and Hacking Workshop **(Intra College)**	16/10/2021 to 17/10/2021	Prof. Sunil Chaudhari, Fr.CRCE, Mr. Govind Gaundalkar, Upmanyu Jha, Prathamesh Adake, Vanessa D'mello, Ronald Patrick, Happy Cherian	The main aim of the event was to introduce the participants to Linux Security and its various domains thus highlight its highly growing significance	70	Mozilla Campus Club CRCE
15	Design Validation Using Double Diamond Approach **(Intra College)**	21/10/2021	Mr. Umesh Rathod	The main purpose of the session was to introduce the participants to the various design validation models, the process and the phases of the double diamond approach and its significance in the industry. The event marked its end with a question and answer session.	43	Mozilla Campus Club CRCE in collaboration with IIC CRCE
16	Game Development using Java and Unreal Engine **(Intra College)**	04/12/2021	Charmi Tank, Santo Sunny, Sahil Bane, Jinish Varaiya, Hitesh Sharma,	The objective of the event was to help the students to understand what exactly is game	75	Mozilla Campus Club CRCE

			Naman Chouhan	development.		
17	Unscript 2k22 (**National Level)**	22/01/2022 to 23/01/2022	-	National Level Annual Hackathon Unscript 2k22. The hackathon had teams competing by developing products in their selected domains of Web/App Development, ML/AI, Security/Blockchain and an innovation domain. The event was conducted online.	240	Mozilla Campus Club CRCE in collaboration with Codelabs CRCE
18	Prototype Validation – Converting a Prototype into a Startup **(Intra College)**	26/02/2022	Dr. Shilpa Kankonkar	The main agenda of the session was to introduce the participants to the importance identifying the problem and passion, validation of problem and prototype and validating the minimum variable product with customer which can help one to convert a prototype into a start-up.	37	Mozilla Campus Club CRCE in collaboration with IIC CRCE
19	Women's Day Celebration **(Intra College)**	08/03/2022	Ms. Harshala Chavan, Mrs. Parita Amin,	Two women speakers were called for a motivational speech	120	IEEE - CRCE & IEEE-WIE CRCE
20	Self defence workshop **(Intra College)**	08/03/2022	Mr. Akash Kandukuri	A martial arts team for martial art workshop	120	IEEE and IEEE-CRCE
21	CRESENDO - Innolette 2022 **(Intra College)**	05/03/2022	Prof. Saurabh Kulkarni, Prof. Dipali Bhise, Prof. Deepika Singh	Group of students will be assigned some random object and they have to present an innovative idea for the assigned object.	15 teams	IEEE - CRCE
22	Industrial Trends and Technology **(Intra College)**	05/02/2022	Dr. Shailendra Pathak	To give basic overview of real time and experience of current industry and their trends and technology.	45	IEEE - CRCE & IEEE-WIE CRCE

23	Event on Lead Entrepreneur Acceleration Program**(Intra College)**	18 th September 2021	Prof. NeeleshKumar Pandit (speaker	The objective of the event was to give basic overview of LEAP workshop organized by Prof. NeeleshKumar Pandit. Our speaker was Prof. NeeleshKumar Pandit who were an alumini professor of Fr. Conceaio Rodrigues College of Engineering	50	IEEE - CRCE
24	Design Thinking for Web Based Projects**(Intra College)**	02/10/2021	Prof. Kavita Devanand Bathe	Introduce Student to website building and design thinking for web based projects	25	IEEE-WIE CRCE
25	Women Healthcare Awareness **(Intra College)**	06/02/2022	Dr. Pallavi Raut	Aware female students and teachers about PCOS, PCOD and to solve doubts of female students	40	IEEE-WIE CRCE
26	Women's Day Celebration**(Intra College)**	08/03/2022	Ms. Harshala Chavan, Mrs. Parita Amin,	Two women speakers were called for a motivational speech	120	IEEE and IEEE-WIE CRCE
27	Self defence workshop **(Intra College)**	08/03/2022	Mr. Akash Kandukuri	A martial arts team for martial art workshop	120	IEEE-WIE CRCE
28	CRESENDO - Innolette 2022 **(Intra College)**	05/03/2022	Prof. Saurabh Kulkarni, Prof. Dipali Bhise, Prof. Deepika Singh	Group of students will be assigned some random object and they have to present an innovative idea for the assigned object.	15 teams	IEEE and IEEE-WIE CRCE
29	Industrial Trends and Technology**(Intra College)**	05/02/2022	Dr. Shailendra Pathak	To give basic overview of real time and experience of current industry and their trends and technology.	45	IEEE and IEEE-WIE CRCE

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

Institute Marks : 5.00

C.R.C.E. students are encouraged to publish a variety of technical magazines and newsletters under these student chapters that include articles by students on the most recent technological developments. Also, department publishes newsletter annually. This provides an excellent opportunity for them to demonstrate their communication and writing abilities.

Aside from that, the college publishes an annual magazine, FRAGMAG, which is released during the colleges annual fest, Euphoria. Students can express their own ideas in a professional manner and in a variety of languages. The magazine includes articles, poems, stories, and sketches. They are primarily written by students, but faculty and alumni are also invited to contribute.

The publication of such magazines and newsletters fosters a spirit of cooperation while also encouraging healthy competition.

Title of the Magazine/News letter	Publication Year	Publisher	Editorial Team
The Byte Stream	May 2020	Computer Department	Editorial Team: Prof. Swati Ringe and Jason D'Costa
Fragmag (CATALYSE)	2020	CRCE student's Council	Editorial Team: Dr. Ketaki Joshi (Convener and Marathi Editor), Prof. Deepika Singh (Hindi Editor), Dr. Joseph Rodrigues (English Editor) Student Editorial Team: Ruben Lobo (Editorial Secretary), Richa Tripathi, Varad Patil, Maria Anthony, Yohaan Mhatre, Gautam Manuel, Jeswin Thomas, Sakshi Ghadigaonkar
The Byte Stream	May 2021	Computer Department	Editorial Team: Prof. Swati Ringe and Pooja Panchal
Fragmag (IKIGAI)	2021	CRCE student's Council	Editorial Team: Dr. Ketaki Joshi (Convener and Marathi Editor), Prof. Deepika Singh (Hindi Editor), Dr. Joseph Rodrigues (English Editor) Student Editorial Team: Saloni Khanna (Editorial Secretary), Gatami Thakur, Yammen Ajani, Joshua Godinho
CRCE Roots	2021	Alumni Committee	Editorial Team: Prachi Patil, Mareena Mathew
ICAC3'21 Souvenir	2021	Conference Publication Committee	Publication Committee: Dr. Ketaki Joshi (Coordinator) Prof. Vaibhav Godbole (Co-(Coordinator)) Dr. Deepak Bauskar, Prof. Sunil Choudhari, Prof. Unik Lokhande, Mr. Nilesh Patil, Mr. Vipin Palkar
The Byte Stream	May 2022	Computer Department	Editorial Team: Prof. Swati Ringe
Fragmag (Adwitiyah)	2022	CRCE student's Council	Editorial Team: Dr. Ketaki Joshi (Convener) Ms. Jyoti Kargutkar (Marathi Editor), Prof.

			Deepika Singh (Hindi Editor), Dr. Joseph Rodrigues and Prof. Prahelika Pai (English Editor) Student Editorial Team: Alisha Rao (Editorial Secretary), Amaeza Rodrigues, Mohini Gautam, and Yashas Joglekar, Nixon Lobo, Sachi Varma, Ivan D'Silva & Tanuj Kumbhar
CRCE Roots	2022	Alumni Committee	Editorial Team: Prachi Patil, Mareena Mathew
Technoscoop- an official CSI-CRCE magazine	November 2022	CSI	Editorial Team: Ayush Batra
Mozi-TechNews	November 2022	Mozilla	Editorial Team: Pratham Kambli, Shoydon and Lisa
TechChronicles	November 2022	Codelab	Editorial Team: Lloyd Louis, Joshua Lewis, Soham Ladgaonkar, Aaron Furtado, Neil Pandit. Basilica Anthony
Exypnos	March 2023	Google Developers Club	Editorial Team: Mahek Intwala, Aakarsh Sharma, Ryan Valliaparambil
Game Gospel	March 2023	Gaming Club	Editorial Team: Malaika Monterio, Sanvi Pokle
Trinetra	March 2023	HAWKi(Cyber Security Club)	Editorial Team: Prof. Unik Lokhande, Upmanyu Jha and Prathamesh Adak
TECHNOBUZZ	March 2023	IEEE	Editorial Team: Prof Swapnali Makdey, Santo sunny, Rachana
WiTron	March 2023	IEEE-WIE	Editorial Team: Grace Pereira, Mrinmayi Prabhughate, Erica Mathias, Peral D'souza, Sania Almeida

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

Institute Marks : 8.00

Sr. No	*Paper contests, Design contests, Any other awards, achievements*
	Year 2019-20
1	Final year Students Sumedh Deshpande, Karan Rao, Yashom Dighe, Christo Thomas, Yash Turkar (Maverick UAS team) received **the Just joe sportsmanship award ($500.00) in 17th annual Student Unmanned Air Systems Competition held at Webster field, St Inigoes, Maryland** USA from 12 to 15 June 2019. **(International Level)**
2	Third Year Students Vedant Sahai from Team TEACH-AI in **"Singapore India Hackathon 2019"** from 28th September to 30th September 2019, Won **prize of ($2000) (International Level)**
3	Final Year Students Nehal Kalnad, Ashley Lobo and Kartick Hariharan are selected for Final round of Prestigious all India level coding Competition by ICPC foundation. **(National Level)**
4	Third year Students Pranay Lobo, Pranay Bagrecha and Sahil Gupta **secured First position at** TSEC CodeStorm Hackathon on "Blockchain & Social Courses**"** on 20 and 21 September 2019, for project Firestation**. (National Level)**
5	Third Students Darlene Nazareth, Elita Menezes, Kevlyn Kadamala and Sherwyn D'souza won **First prize at VCET HACKATHON 2019** on 27th and 28th September **at** Vidyavardhini's College of Engineering and Technology, Mumbai**. (Inter College)**

6	Third Year Students Elvis Dsouza, Kevlyn Kadamala, Pratik Chowdhury and Vedant Sahai secured **4th place** in 72 hour Symbiosis AI Hackathon held on 29 September 2019. **(National Level)**
7	Third Student Alok Yadav of **team error (404)** was Finalist at **VESAIthon AI based 24 hour hackathon** at VESIT, Mumbai on 28-29 june,2019. **(Inter College)**
8	Pranay Bagrecha and Kevin Ruffin from Third Year **secured 2nd position in Sardar Patel College Of Engineering Annual Debate** held on 4th-5th October,2019 **(National Level)**
9	Mehek Male, Mayank Srivastava and Darlene Nazareth Secured **First Place in Synergy hackathon held on 31st August,2019** at F.R.C.R.C.E. Bandra **(National Level)**
10	Third Year Student Mayank Srivastava successfully presented a paper **titled Startup Initiatives for women with policy** at Goa Technology Association on 24th August 2019 at Pilar Technological College, GOA. **(National Level)**
11	Third Year Student Shubham Bhate, Abhishek Ahirrao, Vedant Sahai Successfully completed Workshop on Machine Learning and AI using Python. **(National Level)**
12	Third year Students Darlene Nazareth, Elita Menezes, Sherwyn D'souza and Kevlyn Kadamala **won first prize** in **Cyber Security Hackathon** on 31st Jan and 1st Feb 2020 **at SPIT, Mumbai (National Level)**
13	Third year Students Pranay Lobo, Pranay Bagrecha and Sahil Gupta won the Most **Innovative Idea** award at Hackathon Jan 2020 organized by St. John Engineering College, Palghar **(Inter College)**
14	Third year Students Pranay Lobo, Pranay Bagrecha and Sahil Gupta **won First prize** at DMCE Hackathon Jan 2020 , Navi Mumbai. **(National Level)**
15	Third year Students Darlene Nazareth, Elita Menezes , Kevlyn Kadamala and Sherwyn D'souza **won Second prize** at DMCE Hackathon Jan 2020 , Navi Mumbai. **(National Level)**
16	Third year students Jason D'costa, Elvis Dsouza, Princeton Baretto won **Best Documentation Award** at ByteCamp '20 held at SIES Graduate School of Technology. **((Inter College)**
17	Third year Students Princeton Baretto, Elvis Dsouza, Pratik Chowdury, Amurto Basu won Second Prize at Codeshastra 6.0 Hackathon March 8, DJ Sanghvi, Mumbai. **(Inter College)**
18	Third year Students Anup Joseph, Abhishek Nagvekar, Samuel Davis, Anuj Purandare, Rachel Jose and Hardik Trivedi of team Doryforos were selected for **Smart India Hackathon – 2020 (National Level)**
19	Third year students Mayank Srivastava, Pratik Chowdhury and Devin Barboza presented an idea to MHRD during an Ideathon to fight Covid - 19 held on 27th and 28th March 2020. **(National Level)**
20	Third year students Mehek Male, Albin Tharayil, Sanfer Noronha and Mayank Srivastava won **Second Prize** at TSEC Hackathon 2020 held on, 5th and 6th February, 2020 **(Inter College)**
21	Third year Students Amurto Basu, Shubham Bhate, Sherwin Pillai, Mahesh Desai, Carol Sebastian and Cassia Vaz of team Data_Pirates1 were selected for **Smart India Hackathon – 2020.** . **(National Level)**
22	Third year students Shaikh Khalid, Ariane Correa, Rahim Chunara, Alok Yadav, Mario Dsa & Shubham Pednekar of team Surge1 were shortlisted for **Cisco Devnet Problem Statement in Smart India Hackathon – 2020** . **(National Level)**
23	Shubham Pednekar & Hardik Trivedi won **SPIT Capture-The-Flag 2020 Security** Penetration Competition. **(Inter College)**
24	Third year student, Shubham Pednekar of Team Bindass was shortlisted among the top 20 teams of "**India-Singapore Hackathon 2019." (International Level)**

	Year 2020-21
1.	Final year students – Simran D'souza, Riya Gupta and Dishank Oza secured 1st place in Technical paper presentation competition, organized during Crescendo – A National level Technical Festival, CRCE, Mumbai , March 2021**.(National Level)**
2.	Final year student – Mahek Male, secured 2nd place in Project Competition, , organized during Crescendo – A National level Technical Festival, CRCE, Mumbai , March 2021.
3.	Final year student – Mahek Male, Winner of Best Overall Hack at HackHealth 2021 (Stony Brook University, New York)
4.	Final year student – Simran D'Souza, Riya Gupta and Dishank Oza secured third place in project competition – Software on "Hand Tracking and Gesture Recognizing communication system for disabled people" organized during Crescendo – A National level Technical Festival, CRCE, Mumbai , March 2021. **(National Level)**
5.	Final year student – Riya Gupta secured 2nd place in Mechathon, organized during Crescendo – A National level Technical Festival, CRCE, Mumbai , March 2021. **(National Level)**
6.	Final year student – Kevlyn Kadamala – Team CROSS Coders declared the winners of Smart India Hackathon2020 – Software Edition. **(National Level)**
7.	Final year student – Kevlyn Kadamala , won the Best Quantum Computing Hack award at MacHacks one of the North America's only Artificial Intelligence Focused hackathons, February 5-7 2021, McMaster University, Ontario
8.	Final year student – Elita Menezes, Winner of Best Overall Hack at HackHealth 2021 (Stony Brook University, New York)
9.	Final year student – Shaileshkumar Mishra, 1st Runner up in Code Hunter, Shivaji College, Delhi University. **(National Level)**
10	Final year student – Shaileshkumar Mishra, 2nd Runner up Codex (SIES College**). (Inter College)**
11	Final year student – Sherwyn D'Souza and Darlene Nazareth ranked in top 10 in Facebook's Wit.ai Hackathon. ((**National Level)**
12	Final year student – Shubham Pednekar, India Singapore Hackathon 2020 Finalist (Domain - Medical Waste Management) **(International Level)**
13	Final year student – Shubham Pedneksr, Mario D'Souza, Khalid Shaikh, Rahim Churana, Alok Yadav, Ariaen Correa SIH 2020 Winner by Cisco Devnet (PS AM289) **(National Level)**
14	Final year student – Khalid Shaikh, secured 276th Rank in TCS CodeViita 2020 **(National Level)**
15	Final year students – Abhishek Ahirao stood 2nd in Mechathon, organized during Crescendo – A National level Technical Festival, CRCE, Mumbai , March 2021. **(National Level)**
16	Final year student – Sanfer Noronha secured second prize in hackathon, organized during Crescendo – A National level Technical Festival, CRCE, Mumbai , March 2021. **(National Level)**
17	Final year student – Dishank Oza secured 1st prize in Circuit Wi, organized during Crescendo – A National level Technical Festival, CRCE, Mumbai , March 2021.z competition**(National Level)**
18	Final year student – Amurto Basu, Shubham Bhate, Mahesh Desai, Cassia Vaz, Sherwin Pillai Carol Sebastian, Elvis D'Souza, Finalist of Smart India Hackathon 2020. **(National Level)**
19	Final year student – Anuj Purandare, Anuj Joseph, Abhishek Magvekar, Rachel Jose, Hardik Trivedi, Samuel Davis, Finalist of Smart India Hackathon 2020. **(National Level)**

20	Final Year student Kevin Ruffin and Pranay Bagrecha, Runner up, CRMD-2020, National Level Debate competition held at CRCE, Bandra, September 2020. **(National Level)**
21	Third Year students - Bilonikar Shreya, Mendonca Carol, Phadakale Divita won 3rd Prize in Ingress Hackathon national level (Team iCode) on February 13-14, 2021 by Mar Baselios college of Engineering and Technology (autonomous), Thiruvananthapuram, Kerala. **(National Level)**
22	Third Year students, Purohit Suryansh, Reddy Ganesh, Shetty Sanath Krishna and Tomar Ayush Devendra were declared the winners of the Beta 3.0 national level hackathon winner (Code Asylum) held by NIT Bhopal. **(National Level)**
23	Third Year Computer Engineering student, Sanfer Samson Noronha won 2nd Prize in Hackathon organized during Crescendo – A National level Technical Festival, CRCE, Mumbai , March 2021 **(National Level)**
24	Third Year Computer Engineering student, Kevlyn Kadamala won the prize for **Best Quantum Hack and Best use of Google Cloud** in Hackathon MLH- MackHacks 2021. **(International Event)**
25	Third year student, Tripathi Sudheer Vijaykumar, Global Rank 324, August Long Challange Div 1, Codechef, Aug 2020. **(International Event)**
26	Third year student, Tripathi Sudheer Vijaykumar, Global Rank 866, Google Kickstart Round H, 2020. **(International Event)**
27	Third year student, Tripathi Sudheer Vijaykumar, Rank 3, Codebattle 2.0, inter college coding competition by codemistic, Sept 2020.
28	Third year student, Tripathi Sudheer Vijaykumar Winner, Team Tricode, Unscript Mixed Hackathon, Nov 2020 organized by CRCE, Bandra, Mumbai **(Inter college)**
29	Third year student, Tripathi Sudheer Vijaykumar, Winner, Team Tricode, Hackathon organized during Crescendo – A National level Technical Festival, CRCE, Mumbai , March 2021. **(National Level)**
30	Third year student, Samyak Gaur, Runners up, Team catastrophe, Unscript Mixed Hackathon, Nov 2020 organized by CRCE, Bandra, Mumbai. **(National Level)**
31	Third year student, Ajani Yameen Tanveer, Runners up, Unscript Mixed Hackathon, Nov 2020 organized by CRCE, Bandra, Mumbai. **(National Level)**
32	Third year student, Dabre Chelsea Moses, Top 10 rank at Hack36 National level Hackathon April 2021**(National Level)**
33	Third year student, Dias Mario Jonas, 3rd Place winner Algoholic 2.0 May 2021 organised by Codelabs CRCE, Mumbai **(Intra college)**
34	Third year student, Mascarenhas Nicola Mary, 1st place, medical device for improving neonatal care, April 23-25, 2021 organised by Mh2 Maharashtra Health Hackathon team **(National Level)**
35	Third year student, Purohit Suryansh Bhupesh Reddy Ganesh Bheemesh Tomar Ayush Devendra, Shetty Sanath Krishna, winner Version Beta 3.0 national level hackathon winner (Code Asylum) 2021 held by NIT Bhopal. **(National Level)**
36	Third year student, Shetty Sanath Krishna, has Built a storage drive, "**Save as blockchain**" for Pistis.io pitched in gsv summit, ORU university and several more universities which was highly appreciated. **(National Level)**
37	Third year student, Shetty Sanath Krishna, has developed "IMS Global badges" for baking of the digital badge. **(National Level)**
38	Second year student – D'Souza Dilton secured THIRD PLACE IN 26th INTERNATIONAL E-KATA OPEN WFSO KARATE CHAMPIONSHIP **(International Event)**
39	Second year student - Chettiar Rissa and Sequeira Rachel Lawrence secured First Place in National Level Robotics Competition (BrainWreck organized by MIT AOE), 16-17 March 2021. **(National Level)**

40	Second year student – Upmanyu Jha, won top 10 Best Performers award in Ethical hacking tranning By Internshala. **(National Level)**
41	Second Year student, Mohare Prachi, Jayesh Badwal, Manan Shah (Team- DevGeeks), Runner up Unscript Rookies Nov 2020 organized by CRCE, Bandra, Mumbai organized by Fr. CRCE, Mumbai, 21st & 22nd November. **(National Level)**
42	Second year students-Raj Mourya, secured first place in Algoholic1.0 place, Best SE team (Code Debuggers) in Hackathon organized during Crescendo – A National level Technical Festival, CRCE, Mumbai , March 2021. **(National Level)**
43	Second year student - Thakur Aayushi and Sreenivasan Murugan won Best Circuit Design in National Level Robotics Competition(BrainWreck organized by MIT AOE), 16-17 March 2021. **(National Level)**
44	Second year student - Almeida Alan Anthony, won First Prize at Open Coding Competition, St. Francis Institute of Techonlogy, 27 February, 2021. **(Inter college)**
45	Second year student - Almeida Alan Anthony, won First Prize in Scavenger Hunt competition t Virtual Colloquium 2021 on 'IT for Gaming' organized by St. Francis Institute of Technology, 27 February 2021, First Prize **(Inter college)**
	Year 21-22
1	Final year student Dias Mario won Consolation Prize at AI for Healthcare Hackathon, an initiative of SINE-IITB, supported by MSH, MEITY, and organized by DERBI Foundation virtually in the month of Aug 2021 for the Theme: Deep Learning Multiple Diseases Prediction Model based on Retina Image. Part of Team: Medical Explorers. **(National Level)**
2	Third-year students Prachi Mohare, Arnav Chawate, Jayesh Badwal, and Brendan Lucas - Winner of e-Yantra Innovation Challenge 2022 under the Best Hardware category for the project “coconut harvester” **(National Level)**
3	Third-year students Chettiar Rissa, Sequeira Rachel, Sanghvi Mann, Kolhe Bhuvanesh, and Bhandari Praveen Raju – team Infura was declared the first runner-up of TIAA Hackathon, TIAA, April'22. **(Intra college)**
4	Rohan Tapulli, Bhuvanesh kolhe, Jainesh Chawan, Abde-abitalib , Rachel Dhalwani, Aaron Dsouza- team Mavericks, UAS second runners up, TIAA Hackathon, TIAA, April'22. **(Intra college)**
5	Third-year student Jain Lavish Kumar, Problem Solving Certificate by HackerRank. **(National Level)**
6	Third-year student Almeida Alan Anthony secured 1st Position at SynTechXist Quiz, National College Bandra, 04/03/22. **(Inter college)**
7	Third-year student Almeida Alan Anthony secured second prize at Debug Me, National College Bandra, 04/03/22. **(Inter college)**
8	Third-year student Loomba Ishaan Sanjeev, Crescendo Hackathon, FRCRCE, March'22 Winner. **(National Level)**
9	Third-year student Dsouza Colin, Winner of Crescendo PS 2 competition during Crescendo organized by CRCE, March 2022. . **(National Level)**
10	Third-year student Mahamuni Aditya Rajendra successfully completed Level 1 and Level 2 of Learn to Earn Cloud Security Challenge by Google Cloud and Qwiklabs. **(National Level)**
11	Third-year student Mishra Kaustubh Krishnanand participated in NASA Space App International challenge 2021, held on 2nd and 3rd October 2021. **(National Level)**
12	Third-year student More Akhilesh Sambhaji won the First prize in Crescendo Hackathon 2022 organized by CRCE March 2022. **(National Level)**
13	Second-year student Fernandes Eric, cleared 2 rounds of Flipkart grid 3.0 competition, 2 rounds of DD Robocon competition, Second place in crescendo hackathon, second place in unskript rookies hackathon**(National Level)**

14	Second-year student Makwana Harshang , secured first place in coding competition Alcoholic 1.0 organized by codelabs crce **(Intra college)**
15	Second-year student Pakhle Bhushan secured 1st Runner Up in Crescendo Hackathon (PS: 3) **(National Level)**
16	Second-year student Patankar Vedant secured 1st Runner Up in Crescendo Hackathon (PS: 3) **(National Level)**
17	Second-year student Patil Manasvi Runner up Crescendo Mechathon, Fr CRCE Bandra **(National Level)**
18	Second-year student Patra Srijita secured 2nd position in Crescendo Hackathon (PS:2) **(National Level)**
19	Second-year student Pimenta Shaun, Winners of Crescendo Hackathon and Secured 5th Place in the SAE International West Competitions as a part of Team Vaayushastra (**International Level)**
20	Second-year student Sharma Hitesh, 2nd runner up in Mumbai Hackathon, Finalist In Unscript Hackathon **(National Level)**
21	Second-year student Tank Charmi, secured first place in Hackathon 1: Crescendo: 5th position in SAE Aero design Competition (Team Vaayushastra) (**International Level)**
22	Second-year student Valiaparambil Ryan, 1st Runner Up Hackathon 1:- UNSCRIPT ROOKIES [AIML], 1st Runner Up Hackathon 2:- CRESCENDO **(National Level)**
23	Second-year student Vyas Aditya winner of Hackathon 1:- Crescendo Elexathon **(National Level)**
24	Second-year student GRACIAS DEON, winner Hackathon 1:- Crescendo Elexathon, winner Hackathon 2:- Crescendo Mechathon**(National Level)**
25	Second-year student Pawar Atharva winner Hackathon 1:- Crescendo Elexathon, winner Hackathon 2:- Crescendo Mechathon**(National Level)**
26	Second-year student Prajapati Vijay, first runner up hackathon 1 :- Techstrom, Ruia college Dadar , winners hackathon 2 :- Unscript, Fr. CRCE Bandra , winners hackathon 3 :- Hackverse, nit Karnataka **(National Level)**
27	Second-year student DSilva Chris secured 4th place Unscript Rookies Hackathon **(National Level)**
28	Second-year student Kallivalappil Neave secured 2nd Place Unscript Rookies 2022 | 2nd place Cresendo Hackathon **(National Level)**
29	Second-year student Mendonca Glenn secured 2nd place Algoholic 1.0 | CodeLabs **(Intra college)**
30	Second-year student Misquitta Nigel secured 4th place Unscript Rookies Hackathon **(National Level)**
31	Second-year student Ojha Shubham secured 3rd place Algoholic, Crescendo Hackathon 3rd place, DamnCon CTF, Shaastra CTF, Square CTF, Knight CTF **(National Level)**
32	Second-year student Oza Riddhi secured 3rd place Crescendo Hackathon **(National Level)**

List of Publications-2019-20

Sr. No	Publication in conference and Journal
1	Mahendra Mehra, Dr. D. R. Kalbande, Shubham Mankar, Sohaa Mutsaddi," Data mining in Educational System for effective Student Mentoring", ICAC3'19 IEEE Conference, 20-21st December , Mumbai
2	Simran Gadkari, Jenell, Ashwini Pansare," Analysis of pre trained Convolutional Neural Networks to Build a Flower Classification System", IJRASET, Volume 7, Issue XI, Nov 2019, ISSN:2321-9653
3	Pradnya Borkar, Marilyn Pulinthitha, Mrs. Ashwini Pansare, "Match Pose - A system for Comparing Poses", International Journal of Engineering Research and Technology, Volume 8, Issue 10, October -2019. ISSN 2278-0181.
4	Ashley Lobo, Kartick Hariharan , Suyash Sreekumar , Monali Shetty," Time Optimal long distance trip planning for electric vehicles", 2019 5th International Conference on Computing Communication Control and Automation ICCUBEA - IEEE conference,2019. ISSN: 978-1-7281-4042-1/19. http://doi.one/10.1729/Journal.23359
5	Kamoji S., Koshti D., Peter R. (2020) Analysis of Growth and Planning of Urbanization and Correlated Changes in Natural Resources. In: Raj J., Bashar A., Ramson S. (eds) Innovative Data Communication Technologies and Application. ICIDCA 2019. Lecture Notes on Data Engineering and Communications Technologies, vol 46. Publisher Springer, Cham. Print ISBN: 978-3-030-38039-7, Online ISBN: 978-3-030-38040-3 DOI: https://doi.org/10.1007/978-3-030-38040-3_23
6	Dipali Koshti , Nehal Kalnad , Sreekumar Suyash, Shreya Bhujbal, " Video Anomaly Detection using Inflated 3D Convolution Network", 5th IEEE International Conference on Inventive Computation Technologies (ICICT-2020) organized by RVS Technical Campus , 26-28 February 2020 at Coimbatore.
7	Supriya Kamoji, Alphaeus Dmonte, Solomon Jose George, Clayton Sohan Pereira, "Vehicle Identification and Speed Measurement", 5th IEEE International Conference on Inventive Computation Technologies (ICICT-2020) organized by RVS Technical Campus, 26-28 February 2020 at Coimbatore.
8	Mahendra Mehra, Vedant Sahai, Pratik Chowdhury, Elvis D'souza, "Home Security System using IOT and AWS Cloud Services", ICAC3'19 IEEE Conference, 20-21st December, Mumbai
9	Kalpana Deorukhkar, Gauri Jare, Aishwarya Sebin, Wensita Rodrogues," Speech Assistance for the Deaf", Journal of Emerging Technologies and Innovative Research, Volume 7, Issue 4, March 2020, DOI: http://doi.one/10.1729/Journal.23359
10	Dr Brijmohan Daga, Juhi Checker, Sayali Deo, Anne Rajan," Computer Science Career Recommendation System using Artificial Neural Network", IJCTT, 20 March 2020.
11	Yashom Dhige, Yash Turkar, Cristo Aluckal, Yogesh Agarwadkar, Dr. Sunil Surve, "Dynamic path planning system for UAV remote sensing in urban environments", National Symposium on Innovations in Geospatial Technology for sustainable Development with special emphasis on NER, ISG, ISRS, Shillong, Meghalaya, India, November 20-22, 2019,

12	Harshula Tulapurkar, Varsha Turkar, B. Krishna Mohan, Yash Turkar," Curvelet Based Watermarking of Multispectral Images and its effect on classification accuracy", URSI Asia- Pacific Radio Science Conference (IEEE) (AP- RASC 2019), New Delhi, India, March 9-15, 2019.
13	Cristo Aluckul, Yash Turkar, Yashom Dhige, , Sumedh Deshpande, , B. K. Mohan, Yogesh Agarwadkar, Sunil Surve, Brijmohan Daga, "Dynamic real- time indoor environment mapping for Unmanned Autonomous Vehicle navigation", IEEE International Conference on Advances in Computing, Communication & Control, Fr. Conceicao Rodrigues College of Engineering, Mumbai, India, December 20-21, 2019.
14	Anol Kurian, Rochelle Cordeiroo, Brinel D'souza, "Automated training for Job Interviews", International journal of computer trends and technology (IJCTT), 20 March 2020.
15	Roshni Padate, Dhanajay Chobhe, Davina Pinto," Fire detection system using convolutional neural network", IJETT.
16	Prof. Monali Shetty, Christina A. Daniel, Manthan K. Bhatkar, Ofrin P. Lopes, "Virtual Mouse Using Object Tracking", IEEE 5th International Conference on Communication and Electronics Systems (ICCES), 2020
17	Merly Thomas, Kenrick Fernandes, Jerome Nicholas, "Analysis of Semantic and Stylistic Image Generation", JETIR May 2020, Vol 7, Issue 5
18	Merly Thomas, Nerissa Pereira, Simran Dabreo, Linnet Rodrigues, "Comparative Analysis of Fake News Detection using Machine Learning and Deep Learning Techniques.", JETIR April 2020, Vol 7, Issue 4

List of Publications-20-21

	Paper contests, Design contests, Any other awards, achievements
1.	Vedant S., Jason D., Mayank S., Mahendra M., Dhananjay K. (2021) Leveraging Deep Learning and IoT for Monitoring COVID19 Safety Guidelines Within College Campus. In: Garg D., Wong K., Sarangapani J. Gupta S.K. (eds) Advanced Computing. IACC 2020. Communications in Computer and Information Science, vol 1367. Springer, Singapore. https://doi.org/10.1007/978-981-16-0401-0_3.
2.	Samarjeet Kaur, Vedant Sahai, Aditi Jaiswal, Sayonsom Chanda," Knowledge Mining for Defining Systemic Engineering Practices, 4th International Conference on Electronics, Communication and Aerospace Technology (ICECA 2020), pp. 1346-1352, DOI: 10.1109/ICECA49313.2020.9297380.
3.	Benita Rego, Nolita Rego, Mohit Kunder, "Social Media Analysis for Mental Health Evaluation" International Journal for Research in Applied Science & Engineering Technology (IJRASET), ISSN: 2321-9653, pp. 1453-1460, Volume 9 Issue IV Apr 2021. DOI: https://www.doi.org/10.22214/ijraset.2021.33962
4.	S. Kaur, V. Sahai, A. Jaiswal and S. Chanda, "Knowledge Mining for Defining Systemic Engineering Practices," 2020 4th International Conference on Electronics, Communication and Aerospace Technology (ICECA), 2020, pp. 1346-1352, DOI: 10.1109/ICECA49313.2020.9297380.
5.	Dipali Koshti, Kevin Cheruthuruthy, Surya Pratap Shahi, Mayank Mishra," A Detection, Tracking and Alerting System for Covid-19 using Geo-Fencing and Machine Learning', IEE Sponsored 5th International Conference on Intelligent Computing and Control Systems (ICICCS-21), May 6-8- 2021, organized by Vaigai College of engineering, Madurai, India.
6.	Swati Ringe, Sharwari Marathe, Rajesh Manjrekar, Raksha Shetty, "Teaching pre-schoolers using VQA: A Web app that answers natural language questions.", Zeichen Journal September 2020, Vol 6, Issue 9.
7.	Swati Ringe,Vedant Sakhardande, Cajetan Rodrigues, Atharva Atre, "Drone Delivery-Application and Path Optimization", Alochana Chakra Journal , September 2020, Vol 9,

	Issue 9
8.	Ashwini Pansare, Simran Gadkari, Jnnell Mathians , Merlin P, " categorization of diabetic retinopathy and identification of characteristics to assist effective diagnosis" in 3 rd IEEE international conference on " Emerging smart computing and informatics" on 5th-7 th March 2021
9.	Mahendra Mehra, Steve D'Costa, Ryan D'Mello, Joseph George and Dr. D.R. Kalbande, "Leveraging Deep Learning for Nail Disease Diagnostic", 4th Biennial International Conference on Nascent Technologies in Engineering, IEEE Conference(Scopus indexed) , Jan 2021
10.	Mehra Mahendra, Ajani Yameen, Mangalorkar Krish, Nadar Yohann and Kalbande Dhananjay, "College Project Preservation and Emulation using Containerization over Private Cloud", in Fifth International Conference on Information and Communication Technology for Competitive Strategies(ICTCS DEC 2020) Springer LNNS. ISBN Number - 2367-3370 Series
11.	Monali Shetty, Sankalp Rane, 'Selection of optimal cricket team based on the players performance", IEEE XPLORE ISBN:978-1-7281-5371-1, International Conference on Communication and Electronics Systems 2020 -July 2020
12.	Supriya Kamoji, Dipali Koshti, Joshua Noronha, Smart Street lamps A solution to Urban Pollution 2nd International Conference on Inventive Research in Computing Applications (ICIRCA) 2020 organized by RVS college of Engineering and Technology , Coimbatore, India, on 15-17 , July 2020
13.	Carol Sebastian, Princeton Baretto, Sherwin Pillai, Supriya Kamoji,"Virtual assistance using question generation/ Answering ", IEEE Sponsored International Conference on Communication, Information and Computing Technology (ICCICT 2021), June 25-27-2021, Organised by SPIT Mumbai, India
14.	Yameen Ajani, Krish Mangalorkar and Yohann Nadar "Homomorphic Encryption for Secure Conversations with AI Bots over Cloud to Prevent Social Engineering Attacks", accepted in ICAITR 2021 by VIT Mumbai.
15.	Bilonikar Shreya, Mendonca Carol, Phadakale Divita, " Blockchain based model of royalty payments of artists and remix-makers" in International Conference on Smart Data Intelligence (ICSMDI 2021), 29th April 2021, Organized by Kongunadu College of Engineering and Technology, Trichy, Tamil
16.	Sherwyn Dsouza, Darlene Nazareth, Cassia Vaz, Prof. Monali Shetty, "Blockchain and AI in Pharmaceutical Supply Chain", Elsevier SSRN, International Conference on Smart Data Intelligence ICSMDI 2021
17.	Gupta, Riya, Dishank Oza, and Sunil Chaudhari. "Real-Time Hand Tracking and Gesture Recognizing Communication System for Physically Disabled People." *Inventive Communication and Computational Technologies*. Springer, Singapore, 2022. 731-746.
18.	Kalpana Deorukhkar, Kevlyn Kadamala, Elita Menezes, "FGTD: Face generation from Textual description", 5th International conference on Inventive Communication and Computational Technologies ICICCT 2021), June 2021, Scopus Source ID: 21100901469

List of Publications-2021-22

Sr. No	Title of Publication, Conference and Journal
1	Sujata Deshmukh, Bhushan Patil, Ketaki Joshi, Chinmay Gaonkar, Ms. Prerna Pallan, Sumedh Bhatkar, "A Novel Method for IOT Based Smart Traffic System", Industrial Engineering Journal, Vol. XV & Issue No. 06 June – 2022-UGC approved Journal
2	Khasgiwala, Y., Castellino, D.T., Deshmukh, Sujata," A Decentralized Federated Learning Paradigm for Semantic Segmentation of Geospatial Data", International conference on Intelligent Computing & Optimization. ICO, In: Vasant, P., Zelinka, I., Weber, GW. (eds),

	2021. Lecture Notes in Networks and Systems, vol 371. Springer, Cham, 01 January 2022, https://doi.org/10.1007/978-3-030-93247-3_20- *Scopus indexed*
3	Sujata Deshmukh, P. Rede, S. Sharma and S. Iyer, "Voice-Enabled Vision For The Visually Disabled," 2021 International Conference on Advances in Computing, Communication, and Control (ICAC3), 2021, pp. 1-6, DOI: 10.1109/ICAC353642.2021.9697125- Scopus indexed
4	Sujata Deshmukh, Candida Noronha, Lizel Farnandes, Gini Chacko,"Virtual E-mail Assistance for The Visually Impaired", IEEE Conference on Technologies for Future Cities 2021 (CTFC 2021), 8th & 9th October 2021.
5	Sujata Deshmukh, Amurto Basu, Sarvesh Kulkarni, Shubham Mishra, Prashant Deshmukh, Bhushan Patil," Disaster Damage Assessment of Satellite Images Using Transfer Learning with Fine Tuning", Journal of Engineering, Project, and Production Management, 2022- Scopus indexed [Accepted through RGIT ICEI4.0]
6	Monali Shetty, S. Shetty, J. Dsouza "Cyber bullying Detection in Native Languages", Springer, International conference on soft computing for security applications,2021
7	S. I. Amjad Abidi, A. A. Almeida, L. G. Soares and A. Pansare, "Interactive Map Application for Real-Time Crime Reporting," 2021 International Conference on Advances in Computing, Communication, and Control (ICAC3), 2021, pp. 1-8, DOI: 10.1109/ICAC353642.2021.9697179.
8	Mario Dias, Hansie Aloj, Nijo Ninan, Dipali Koshti,"BERT Based Multiple parallel Co-attention for Visual Question Answering", 6th International IEEE conference ICICCS 2022, May 25-27 2022.
9	Sanath Shetty, Ganesh Reddy, Princely Lopes, Ashwini Pansare, " cyber bullying detection System" 4 th International conference PICET 2022, AIP publishing, Scopus indexed
10	Supriya Kamoji, S., Koshti, D., Dmello, V. V. Kudel, A. A., & Vaz, N. R. (2021, July). Prediction of Parkinson's Disease using Machine Learning and Deep Transfer Learning from different Feature Sets. In *2021 6th International Conference on Communication and Electronics Systems (ICCES)* (pp. 1715-1720). IEEE.
11	Swati Ringe, Clayton Almeida, Ron George, Akshay Naphade, "Resolving the Data Imbalance problem in Fraud Detection Using Sampling and Machine Learning Techniques", POSITIF JOURNAL Volume 22, Issue 5, MAY 2022.
12	Swati Ringe, Davin Barboza, Sanfer Noronha, Mayank Srivastava, "food ordering assistant with dish recognition and recommendation system" ICRTTEAS 2021 held on 19-20 July 2021
13	Vanessa DeMello, Yashaswini Chaudhari, Srushti Shah, "Autonomous Time table system using Genetic Algorithm, 4th International Conference on Smart System and Inventive Technologies (ICSSIT 2022) organized by Francis Xavier Engineering College, India on 20-22 January 2022.

5 FACULTY INFORMATION AND CONTRIBUTIONS (200) **Total** Marks 154.40

Name	PAN No.	University Degree	Date of Receiving Degree	Area of Specialization	Research Paper Publication	PhD Guidance	Faculty receiving PhD during the assessment year	Current Designation	Date (Designated as Prof/Assoc. Prof.).	Initial Date of Joining	Association Type
Dr. Sujata Deshmukh	AKXPD6716H	B.Tech. and PhD	22/02/2018	Data Mining and Machine Learning, Blockchain	29	0	0	Professor	01/09/2022	16/07/2016	Regular
Dr. Sunil Surve	ANMPS6072K	B.Tech. and PhD	31/12/2012	Artificial Intelligence, Machine Learning, Deep Learning, Robotics	34	3		Professor	02/04/2012	01/12/1986	Regular
Dr. B. S. Daga	ACTPD9010E	B.Tech. and PhD	20/12/2018	Software engineering and Artificial Intelligence	15	0	0	Associate Professor	01/09/2009	08/08/2003	Regular
Prof. Merly Thomas	BAGPS7034B	M.E/M.Tech	15/02/2003	Computer Networks, Security and Distributed Computing	5	0	0	Associate Professor	17/12/2005	21/08/1996	Regular
Prof. Monica **T.** Khanore	ADIPK9311M	M.E/M.Tech	15/01/2007	Telecommunication	5	0	0	Assistant Professor		12/08/1997	Regular
Prof. Roshni Suresh Padate	AIPPP9487K	M.E/M.Tech	03/04/2010	Image Processing, Data Warehouse and Mining, Machine Learning	15	0	0	Assistant Professor		05/01/2001	Regular
Prof. Roshni Suresh Padate	AIPPP9487K	M.E/M.Tech	03/04/2010	Image Processing, Data Warehouse and Mining, Machine Learning	15	0	0	Assistant Professor		05/01/2001	Regular
Prof. Kalpana Prasanna Deorukhkar	AXSPS7664R	M.E/M.Tech	28/01/2012	Natural Language Processing, Data Structures, Advance Algorithm	15	0	0	Assistant Professor		01/08/2003	Regular

Prof. Wagle Kranti Kiran	AKBPK2431N	M.E/M.Tech	02/04/2012	Computer Organization, Embedded Systems, RTOS, loT	8	0	0	Assistant Professor		19/07/2004	Regular
Prof. Jagruti Nagaonkar	AFHPN2900C	M.E/M.Tech	21/02/2013	Computer Networks. Database Management System, Digital Signal Processing	2	0	0	Assistant Professor		28/07/2004	Regular
Prof. Ashwini Pansare	ANGPP8501Q	M.E/M.Tech	31/12/2012	Artificial Intelligence, Machine Learning. Deep Learning	13	0	0	Assistant Professor		05/07/2005	Regular
Prof. Supriya Shivanath Kamoji	AROPK1602K	M.E/M.Tech	12/12/2012	Artificial Intelligence, Machine Learning, Deep Learning	17	0	0	Assistant Professor		05/07/2005	Regular
Prof. Nagdeote Sushma Fattuji	AEKPN5614B	M.E/M.Tech	31/12/2012	Image Processing Multimedia System and Design, Al, Machine Learning	8	0	0	Assistant Professor		05/07/2005	Regular
Prof. Monali Shetty	BCRPS5046Q	M.E/M.Tech	04/08/2012	System Security, Block chain Technology, Computer Network	13	0	0	Assistant Professor		20/02/2006	Regular
Prof. Prachi Kunal Patil	AIKPC6786H	M.E/M.Tech	31/12/2012	Structure Programming, Internet Programming, Operating Systems	4	0	0	Assistant Professor		18/09/2006	Regular
Prof. Parshvi Shah	BUNPS5891K	M.E/M.Tech	24/01/2015	Programming, Basics of Electrical and Electronics Engg		0	0	Assistant Professor		18/09/2006	Regular

Prof. Sangeeta Parshionikar	BBMPS8352R	M.E/M.Tech	24/01/2015	Digital Logic Design, Computer Organization, loT, TCS, Deep Learning	9	0	0	Assistant Professor		09/07/2007	Regular
Prof. Prajakta Dhamnaskar	ASOPD7928C	M.E/M.Tech	13/01/2014	Data structure, Algorithms, Data mining, ML	11	0	0	Assistant Professor		02/01/2015	Regular
Prof. Lokhande Unik	AIIPL3785B	M.E/M.Tech	01/04/2014	Cloud Computing, System/Information/Cyber Security	4	0	0	Assistant Professor		16/07/2018	Regular
Prof. Ankita Amburle	BQXPA9282N	M.E/M.Tech	29/06/2020	Quantitative analysis and Cloud Computing, Machine Learning	2	0	0	Assistant Professor		05/09/2022	Regular
Prof. Heenakausar Pendhari	BJEPP4416P	M.E/M.Tech	03/04/2010	Internet Programming, Digital Logic and Design Application	2	0	0	Assistant Professor		09/07/2022	Regular

5.1 Student-Faculty Ratio (20) Total Marks 20.00

Institute Marks : 20.00

UG

No. of UG Programs in the Department 1

Bachelor of Engineering in Computer Engineering						
Year of Study	CAY (2022-23)		CAYm1 (2021-22)		CAYm2 (2020-21)	
	Sanctioned Intake	Actual admitted through lateral entry students	Sanctioned Intake	Actual admitted through lateral entry students	Sanctioned Intake	Actual admitted through lateral entry students
2nd Year	120	12	120	12	120	12
3rd Year	120	12	120	13	60	6
4th Year	120	13	60	6	60	12
Sub-Total	**360**	**37**	**300**	**31**	**240**	**31**
Total	**397**		**331**		**271**	
Grand Total	397		331		271	

PG

No. of PG Programs in the Department 0

Grand total:

SFR

No. of UG Programs in the Department 1

No. of PG Programs in the Department 0

Description	CAY(2022-23)		CAYm1 (2021-22)		CAYm2 (2020-21)	
Total No. of Students in the Department(S)	396	**Sum total of all (UG+PG) students**	330	**Sum total of all (UG+PG) students**	264	**Sum total of all (UG+PG) students**
No. of Faculty in the Department(F)	22	**F1**	20	**F2**	13	**F3**
Student Faculty Ratio(SFR)	18	**SFR1=S1/F1**	16.5	**SFR2=S2/F2**	20.31	**FR3=53/F3**
Average SFR	17.79	**SFR=(SFR 1+SFR2+SFR3)/3**				
F=Total Number of Faculty Members in the Department (excluding first year faculty)						

Note: All the faculty whether regular or contractual (except Part-Time), will be considered. The contractual faculty (doing away with the terminology of visiting/adjunct faculty, whatsoever) who have taught for 2 consecutive semesters in the corresponding academic year on full time basis shall be considered for the purpose of calculation in the Faculty Student Ratio. However, following will be ensured in case of contractual faculty:

1. Shall have the AICTE prescribed qualifications and experience.
2. Shall be appointed on full time basis and worked for consecutive two semesters during the particular academic year under consideration.
3. Should have gone through an appropriate process of selection and the records of the same shall be

made available to the visiting team during NBA visit

5.1. 1 Provide the information about the regular and contractual faculty as per the format mentioned below:

	Total number of regular faculty in the department	Total number of contractual faculty in the department
CAY(2022-23)	22	0
CAYm1(2021-22)	20	0
CAYm2(2020-21)	13	0

Average SFR for three assessment years: 17.79
Assessment SFR : 20

5.2 Faculty Cadre Proportion (25) Total Marks 22.00

Institute Marks: 22.00

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY(2022-23)	2.00	2.00	4.00	3.00	12.00	17.00
CAYm1(2021-22)	2.00	1.00	4.00	3.00	12.00	16.00
CAYm2(2020-21)	2.00	1.00	4.00	3.00	12.00	9.00
Average Numbers	2.00	1	4.00	3.00	12.00	14

Cadre Ratio Marks [(AF1 / RF1) + [(AF2 / RF2) * 0.6] + [(AF3 / RF3) * 0.4]] * 12.5: 17.71

5.5 Faculty Qualification (25) Total Marks 15.40

Institute Marks : 15.40

	x	y	F	FQ = 2.5 x [(10X + 4Y) / F)]
2022-23(CAY)	5	17	18	16.39
2021-22(CAYm1)	3	17	16.5	14.85
2020-21(CAYm2)	3	10	20.31	8.62

Average Assessment: 13.29

5.4 Faculty Retention (25) Total Marks 25.00

Institute Marks: 25.00

Description	2021-22	2022-23
No of Faculty Retained	12	11
Total No of Faculty	20	20
% of Faculty Retained	92.3	84.61

Average: 88.455
Assessment Marks: 20.00

5.5 Innovations by the Faculty in Teaching and Learning (20) Total Marks 15.00

Institute Marks: 15.00

In recent years, faculty members have shifted their emphasis from a traditional teaching-learning process to a student-centric learning strategy while imparting knowledge to students in lectures.

For effective knowledge transfer and learning, the emphasis is on student engagement and active participation. The faculty member helps students build useful and lifetime skills by giving them a platform to explore on their own, learn from their peers and through self-study. The teaching and learning process at our college was not halted by the lockdown brought on by the COVID 19 outbreak.

When beginning and implementing online instruction, systematic efforts were made. The Google Meet platform was utilized to host various webinars, FDPs, and teaching and learning activities throughout the lockdown.

A list of a few of the department faculty's notable initiatives is shown below. However, it shouldn't be viewed as a definitive list; rather, it should be seen as a step in an on-going process of continual improvement.

Teaching Method	**Description**
Online Course Creation	The Principal of Fr CRCE, Dr. Surendra Singh Rathod, has created more than five video lectures that are available online through Udemy, a platform for massive open online courses. During the Covid -19 pandemic, few teachers videotaped their lectures on YouTube as web-based instruction.
Virtual Teaching	**Google Classroom** Many faculty members are using Google Classroom for organizing and managing online classes. Students are made to join as members of the Google classroom. Lecture materials, Assignments, Quiz questions are posted in the online classroom.
	Google Meet Online classes are delivered using the Google Meet platform. Teachers recorded their lectures and posted them in the classroom for the benefit of the students. Lab experiments are recorded and the demo videos are shared with the students.
	Virtual Labs For some courses like COA, DS, AOA etc. we are using Virtual labs. Through remote experimentation, this would aid in learning both fundamental and sophisticated concepts.
Learning Management System	**Moodie:** Moodie provides the most flexible tool-set to support both blended learning and 100% online courses. Many faculty are using a moodle for sharing notes, quiz assessment etc.
Information and Communication Technologies (ICT)	Since most classes are equipped with LCD projectors and WiFi internet connection, the instructor uses a blackboard or LCD projector judiciously while delivering the lecture.

Enabled Teaching-Learning	
MOOCs	**NPTEL:** Fr. CRCE has established NPTEL Local Chapter in the college from 2017-18. NPTEL (National Programme on Technology Enhanced Learning) is a joint initiative of the IITs and IISc. It offers online courses and certification in Engineering, Sciences & Humanities Streams. Online course: Free for all, Certification exam: For a nominal fee. Approximately 20+ students completed NPTEL courses in last 3 years. **Coursera, EDx and other online learning platform** To help and to minimize the impact of the coronavirus outbreak on students, the Coursera community had launched a global effort to assist universities and colleges to deliver courseware online. As part of this programme Coursera and EDx E-Learning platforms had offered free subscriptions for Faculty and students to enroll for the courses offered under their curriculum. Fr. CRCE entered into a partnership agreement with Coursera and EDx for Enhanced Learning; to make our students more industry ready and skills relevant. Coursera brings to the table more than 4700+ courses from top universities & professors in the world. With more industry relevant partnerships and rigorous surveys with industry on how to continuously upskill our students in domains from Al- Data Analytics or Business i ntelligence to Life Sciences. These courses are certified programs of Basic, i ntermediate and professional level designed in collaboration with foreign universities. Our college had applied and received 800 subscriptions for the Coursera for campus programme and 500 subscriptions as part of EDx programme, which benefited students and faculty in upgrading their knowledge with the latest curriculum in their respective areas. To encourage student participation in the certification programmes they were given considerations while teamwork evaluations. Approximately 150+ students completed online courses in last 3 years.
Project/ Activity Based Learning	Due to the quick development and active changes in the fields of science and technology, it is necessary to go beyond the traditional curriculum and investigate the most recent engineering achievements. Enrolling in numerous technical councils such as Team Robocon, Team Mavericks, TEDxCRCE and Project Cell (E-yantra 11TB initiatives) etc., provides students with opportunities and broad exposure to the dynamic world of practice. Participating in various projects, activities, and events provides students with hands-on learning opportunities. Through additional design-based experiments, lab work, and projects, the existing gap in the traditional education system is filled. Students work on a project over an extended period of time - over two semesters as a part of course "major/mini project" and individual subject mini project - that engages them in solving a real-world problem or answering a complex question. Students acquire a deeper knowledge through active exploration of real- world challenges and problems.

Study of Research Papers	**IEEE xplore, ACM, Springer, Elsevier** Faculty shares the research papers in their respective subject domain, and students read the paper, present their findings through presentations. This activity improves scientific literacy, critical thinking abilities, and knowledge of scientific facts among students.
Flipped Classrooms	In this, teachers share lecture videos with students for viewing, assign and collect work via online learning management systems, and students are required to attend regularly scheduled lectures for discussion and exploration of the topic.
Student Chapter activities	The department has a number of student chapters/clubs, such as CSI, Codelabs, and GDSC, which give the students a strong platform to participate actively in the numerous competitions, seminars, and lectures hosted by the club. The exercises enable the students to demonstrate their abilities in teamwork, communication, target work, and general professional development. Each student chapter has a faculty advisor assigned to it for governance, mentoring, and other duties. Alumni students are invited to give a technical discussion and engage in conversation with the students to inform them of the demands of the modern marketplace.

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

Total Marks 15.00

Institute Marks: 15.00

Name of the faculty	Max 5 Per Faculty		
	2021-22 (CAYm1)	2020-21 (CAYm2)	2019-20 (CAYm3)
Dr. Sujata Deshmukh	5.00	5.00	5.00
Prof. Merly Thomas	5.00	5.00	5.00
Prof. Monica Khanore	0.00	5.00	3.00
Prof. Roshni Suresh Padate	5.00	5.00	5.00
Prof. Kalpana Deorukhkar	5.00	5.00	5.00
Prof. Wagle Kranti Kiran	5.00	3.00	5.00
Prof. Jagruti Nagaonkar	5.00	5.00	5.00
Prof. Ashwini Pansare	5.00	5.00	5.00
Prof. Supriya Kamoji	5.00	5.00	5.00
Prof.Nagdeote Sushma	5.00	0.00	0.00
Prof. Monali Shetty	5.00	5.00	5.00
Prof. Sangeeta Parshionikar	5.00	5.00	5.00
Prof. Heenakausar Pendhari	5.00	5.00	5.00
Prof. Prajakta Dhamnaskar	5.00	5.00	0.00
Prof. Lokhande Unik	0.00	5.00	5.00
Prof. Anika Amburle	0.00	5.00	3.00
Dr. Sunil Surve	0.00	5.00	0.00
Prof. Dipali Koshti	0.00	5.00	5.00
Prof. Swati Ringe	0.00	5.00	5.00
Prof. Parshvi Shah	5.00	0.00	5.00
Prof. Prachi Patil	0.00	5.00	5.00
Sum	70.00	93.00	86.00
RF = Number of Faculty required to comply with 20:1 Student Faculty Ratioas per 5.1	19.25	16.55	13.55
Assessment [3*(Sum / 0.5RF)]	21.82	33.72	38.08

Average assessment over 3 years: 31.21

5.7 Research and Development (30) Total Marks 16.00

5.7.1 Academic Research (10)

Institute Marks: 9.00

Research and development is a process used to generate new or improved technology that can give an organization, industry, or nation an edge over its competitors. It also helps in the overall development of the faculty as well as students.

The institute encourages multidisciplinary quality research related to science, engineering and technology in the domain of Computer Engineering, Al and Data Science, Electronics engineering, Mechanical engineering, Sciences and Humanity. Academic research, funded research projects, and the creation of intellectual property in the engineering and technology domains are all part of the research activities. The institute strives to create a vibrant research environment for faculty and students engaged in emerging areas. A research and development committee is formed to support the research ecosystem and channel the related activities.

The following Table provides an overview of the Departments progress in research and development.

Serial No.	Criteria		Quantity
1	Quality of Publication	No of Papers in	
		SCI/ESCI:	03+
		SCOPUS:	15+
		Non SCI/SCOPUS:	70+
		IEEE conference/ IET conferences :	25+
		Books:	07
		Books Chapter:	02
		Patents/Copyrights :	03
2	Amount of Funded Research Received		Rs. 1,50,000
3	Number of PhD Given		01
4	Number of PhD awarded		0
5	Number of PhD Pursuing		11
6	No. of. Ph.D. Guides available in the Department		03

Papers Published:

Year 2022-23

Sr. No	Paper Publication Details
1	Pranav Gangurde, Melita Japhet. Clafacio Lobo, Nilesh Patil, Prachi Patil, "ResStorage - Blockchain Based Decentralized Resume Storage Application",in 2022 IEEE World Conference on Applied Intelligence and Computing (AIC), August 2022
2	Varad Patil, Dhrumil Shah, Yash Sankpal, Prajakta Dhamanskar, Prajakta Bhangale, " EARTHQUAKE MAGNITUDE PREDICTION USING NEURAL NETWORKS" Volume No. 14, Issue- 5 , October - December 2022 in Samriddhi: A Journal of Physical Sciences, Engineering and Technology, Impact Factor: 6.6, UGC Care Approved, Peer Reviewed and Referred Journal
3	Robin Lobo, Sonali Joshi, Joel Syrus Fernandes, Prajakta Bhangale, Prajakta Dhamanskar, "A COMPUTABLE STUDY ON TACTICS TOWARDS CRIME PREDICTION AND ANALYSIS", Volume No. 14, Issue- 5 , October - December 2022 in Samriddhi: A Journal of Physical Sciences, Engineering and Technology, Impact Factor: 6.6, UGC Care Approved, Peer Reviewed and Referred Journal
4	Tanisha Harry Braganza; Fatima Felix Pereira; Sameeksha Pravin Rane; Kranti Wagle, "Multipurpose Application for the Visually lmpaired",2022 2nd Asian Conference on Innovation in Technology (ASIANCON),26-28 August 2022
5	Sumi! Kothari, Sujata Deshmukh, Samarth Mehta, "Comparison of Age, Gender and Ethnicity Prediction Using Traditional CNN and Transfer Learning", 13th IEEE INTERNATIONAL CONFERENCE ON COMPUTING, COMMUNICATION AND NETWORKING TECHNOLOGIES (ICCCNT) 2022, October 3rd - 5th, 2022
6	"Optimal Hybrid LSTM-RNN for Image Captioning with Deep Features", Kalpana Deorukhkar, Salish Ket, International Conference on Embracing Industry 4.0 Technologies for Sustainable Growth (ICEI 4.0), April 2022.
7	Brendan Lucas, Aditya Mahamuni, Vinyas Kulal, Abhi Gupta, Kalpana Deorukhkar, "Affordable Real-Time Heart Rate, ECG & SpO2 Monitoring System Using Internet of Things (loT)", Volume 10, Issue XI, International Journal for Research in Applied Science and Engineering Technology (IJRASET) Page No: 1852-1858, ISSN: 2321-9653, www.ijraset.com
8	Ron George, Prof. Swati Ringe, Clayton Almeida, Akshay Naphade, "Resolving the Data Imbalance problem in Fraud Detection Using Sampling and Machine Learning Techniques", POSITIF Journal, Vol22 Issue 7 2022, ISSN NO: 0048-4911 https://doi.org/10.37896/psj30.7/1201
9	Thomas, M. and Meshram, B.B. (2023) "ChSO-DNFNet: Spam detection in Twitter using feature fusion and optimized Deep Neuro Fuzzy Network," Advances in Engineering Software [Preprint], (175). Available at: https://doi.org/https://doi.org/10.1016/j.advengsoft.2022.103333.
10	Merly Thomas, B. B Meshram, "Combating the Distributed Network Attacks using A Proposed Progressive Analyzer based on an Ensemble Learning Framework", 13th IEEE INTERNATIONAL CONFERENCE ON COMPUTING, COMMUNICATION AND NETWORKING TECHNOLOGIES (ICCCNT) 2022, October 3rd - 5th, 2022
11	Thomas, M. and Meshram, B.B. (2022) "A Brief Review of Network Forensics Process Models and a Proposed Systematic Model for Investigation," *Intelligent Cyber Physical Systems and Internet of Things, (Chapter 45). Available at: DOI: 10.1007/978-3-031-18497-0*

Year 2021-22

Sr. No	Paper Publication Details
1	Sujata Deshmukh, Bhushan Patil, Ketaki Joshi, Chinmay Gaonkar, Ms. Prerna Pallan, Sumedh Bhatkar, "A Novel Method for IOT Based Smart Traffic System", Industrial Engineering Journal, Vol. XV & Issue No. 06 June - 2022-UGC approved Journal
2	Deshmukh Sujata, Khasgiwala, Y., Castellino, D.T," A Decentralized Federated Learning Paradigm for Semantic Segmentation of Geospatial Data", International conference on intelligent Computing & Optimization. ICO, In: Vasant, P., Zelinka, I., Weber, GW. (eds), 2021. Lecture Notes in Networks and Systems, vol 371. Springer, Cham, 01 January 2022, https://doi.orgl10.10071978-3-030-93247-3_20
3	Sujata Deshmukh, P. Rede, S. Sharma and S. Iyer, "Voice-Enabled Vision For The Visually Disabled," 2021 International Conference on Advances in Computing, Communication, and Control (ICAC3), 2021, pp. 1-6, DOI: 10.1109/ICAC353642.2021.9697125- Scopus indexed
4	Sujata Deshmukh, Candida Noronha, Lizel Farnandes, Gini Chacko,"Virtual E-mail Assistance for The Visually Impaired", IEEE Conference on Technologies for Future Cities 2021 (CTFC 2021), 8th & 9th October 2021.
5	Sujata Deshmukh, Amurto Basu, Sarvesh Kulkarni, Shubham Mishra, Prashant Deshmukh, Bhushan Patil," Disaster Damage Assessment of Satellite Images Using Transfer Learning With Fine Tuning", Journal of Engineering, Project, and Production Management, 2022- Scopus indexed
6	V. Rao, B.T. Patil, V Shaikh, D.S.S Sudhakar, Sujata Deshmukh, "Investigation of Surface Roughness and Cutting Temperature Parameters in Turning AISI 4340 Steel using MQL Mist Technique with Nano-Fluids (n-Al2O3, n-MoS2 & n-GrapheneJ mixed in Edible Vegetable Coconut Oils", Journal of Engineering, Project, and Production Management. 2022-Scopus indexed [Accepted through RGIT ICEl4.0]
7	Dipali Bhise, B.T. Patil, V Shaikh, D.S.S Sudhakar, Sujata Deshmukh, "Comparative Economic Analysis and Investigation of Micro Lubrication Over Conventional Cooling in manufacturing" Journal of Engineering, Project, and Production Management". 2022-Scopus indexed [Accepted through RGIT ICEl4.0]
8	Monali Shelly, S. Shelly, J. Dsouza "Cyberbullying Detection in Native Languages", Springer, international conference on soft computing for security applications,2021
9	Ashwini Pansare, S. I. Amjad Abidi, A. A. Almeida, **L.** G. Soares and "Interactive Map Application For Real-Time Crime Reporting," 2021 International Conference on Advances in Computing, Communication, and Control (ICAC3), 2021, pp. 1-8, doi: 10.1109/ICAC353642.2021.9697179.
10	Supriya Kamoji, Dipali Koshti, Valiant Vincent Dmello, Alrich Agnel Kudel, Nash Rajesh Vaz, "Prediction of Parkinsons Disease using Machine Learning and Deep Transfer Learning from different Feature Sets", 6th International Conference on Communication and Electronics,

	Systems (ICCES), 8-10 July 2021
11	Swati Ringe, Srivastava Mayank, Barboza Devin, Noronha Sanfer, "FoodPal: An in-restaurant food ordering app", 3rd International Conference on Recent Trends in Technology, Engineering and Applied Science - ICRTTEAS 2021, held virtually on 19th and 20th July 2021.
12	Monali Shetty, Shreya Bilonikar, Carol Mendonca, Divita Phadakale,"Blockchain Based Model for Royalty Payments of Artists and Remix-Makers", International Conference on Smart Data Intelligence (ICSMDI 2021), Elsevier publication
13	Ashwini Pansare, Leesa Menezes, Emmima G, Simran Bindra," Early stage stroke prediction " ,2021 IEEE 2nd Global Conference for Advancement in Technology (GCAT), Bangalore, India. Oct 1-3, 2021
14	Ashwini Pansare, Ariane Correa, Kaustubh Shetty, Reyna Binni", "An Image caption generator for the visually CHALLENGED" ,2021 IEEE 2nd Global Conference for Advancement in Technology (GCAT) Bangalore, India. Oct 1-3, 2021
15	Ria Gupta , Dishank Oza and Sunil Chaudhari ," Real time Hand Tracking and Gesture Recognizing Communication System for physically disabled People" Copywrite year 2022, Inventive Communication and Computational Technologies Springer
16	Heenakausar Pendhari, Sushma Nagdeote, Sandeep Rathod, Lubna Khan, Saurabh Vishwakarma, "Compound Emotions: A Mixed emotion detection", International Conference on Computational and Intelligent Data Science,21st May 2022. (In process)
17	Sushma Nagdeote, Heenakausar Pendhari, Omkar Shirsat, Raj Lad, Sujata Chiwande, "Esports Analysis with Data Science", AIP Conference Proceeding, 2022, 24th -25th March 2022 Will be Published in AIP Conference Proceedings (In Process)
18	Kranti Wagle, Himanshu Alwe, "Stroke Awareness ChatBot Assistant with stroke Risk Prediction using Demographic Data", Springer Nature Switzerland AG 2022
19	Monali Shetty, Sakshi Shetty, Jesica Dsouza, Ameaza Rodrigues, "Cyberbullying Detection in JNative Languages", Springer Book, Soft Computing for Seurity Applications, Jan2022
20	Sherwyn Dsouza, Darlene Nazareth, Cassia Vaz, Prof. Monali Shetty, "Blockchain and Al in Pharmaceutical Supply Chain", Elsevier SSRN, international Conference on Smart Data intelligence ICSMDI 2021
21	Mario Dias; Hansie Aloj, Nijo Ninan; Dipali Koshti,"BERT based multiple parallel co-attention model for Visual question answering" , 6th International Conference on Intelligent Computing and Control Systems (ICICCS 2022) held at Madurai, India organized by Vaigai College of Engineering during May 25-27, 2022.
	Ashwini Pansare, Sanath Shetty, Ganesh Reddy, Princely Lopes, " cyber bullying detection System" 4thInternational conference PICET 2022, AIP publishing, Scopus indexed
23	Borgalli, R. A., & Surve, S. (2022). Facial Emotion Recognition Through Detection of Facial Action Units and Their Intensity. Scientific Visualization, 14(1), DOI: 10.26583/sv.14.1.06 http://sv-journal.org/2022-1/06/
24	Borgalli, R. A., & Surve, S. (2022). Compound Facial Expression Recognition and Pain intensity Measurement Using Optimized Deep Neuro Fuzzy Network. International Journal of Swarm Intelligence Research (IJSIR), 13(1), 1-27. DOI: 10.4018/IJSIR.304721
25	Borgalli, R. A., & Surve, S. (2022, March). Deep Learning Framework for Facial Emotion Recognition using CNN Architectures. In 2022 International Conference on Electronics and

	Renewable Systems (ICEARS) (pp. 1777-1784). IEEE, DVD Part Number: CFP22AV8-DVD; ISBN: 978-1-6654-8424-4.
26	Borgalli, M. R. A., & Surve, S. (2022, March). Deep learning for facial emotion recognition using custom CNN architecture. In Journal of Physics: Conference Series (Vol. 2236, No. 1, p. 012004). IOP Publishing. 2nd International Conference on Computational Intelligence & loT (ICCIloT) 2021 organized by Department of Electronics and Communication Engineering North Eastern Regional Institute of Science and Technology (NERIST) Nirjuli, Itanagar, Arunachal Pradesh, India on 23-24 Feb., 2022, Conference Proceedings published in SCOPUS indexed IOPs Journal of Physics.
27	Preeti Jain and Sunil K Surve. Evaluating Resource Centric Behavior of Workloads and Performance Analysis in CMPs due to Shared Resources. In the International Journal of i nnovative Technology and Exploring Engineering. Blue Eyes Intelligence Engineering and Sciences Publication. August 2019.
28	Jain P. N, Gautam D.K, Surve S.K. Resource Based Modelling of Applications on Multi-cores Using Adapted Tilman Model, 4th International Conference on Computing in Engineering, (ICCET2019) Springer, ASIC series.
29	Jain P.N, Surve S K. Resource Centric Characterization and Classification of Applications Using K-Means for Multicores. IEEE 33rd International Conference on Information and Technology (ICOIN). 2019
30	Preeti Jain and Sunil K Surve. Modeling Shared Resource Competition for Multicores Using Adapted Tilman Model. In the International Journal of High Performance Computing and Networking. lnderScience Publications. 2020
31	Preeti Jain and Sunil K Surve. A Review of Shared Resource Contention in Multicores and its Mitigation Techniques. In the International Journal of High Performance Systems Architecture. lnderScience Publications.
32	Kranti Wagle, Himanshu Alwe, Stroke Awareness ChatBot Assistant with Stroke Risk Prediction Using Demographic Data. Part of the book series: Studies in Computational lntelligence,2022 (SCI, volume 1027), http://dx.doi.org/10.1007/978-3-030-96634-8_23, DOI: 10.1007/978-3-030-96634-8_23
33	Supriya Kamoji, S., Koshti, D., Dmello, V. V., Kudel, A. A., & Vaz, N. R. (2021, July). Prediction of Parkinsons Disease using Machine Learning and Deep Transfer Learning from different Feature Sets. In 2021 6th International Conference on Communication and Electronics Systems (ICCES) (pp. 1715-1720). IEEE.
34	Kalpana Deorukhkar, Salish Ket, "A detailed review of prevailing image captioning methods using deep learning techniques", Springer, January 2022, Multimedia Tools and Applications 81(4)
35	Kalpana Deorukhkar, Salish Ket, "Performance evaluation of state of art deep learning techniques for Image Captioning", Conference on Technologies for Future Cities, Pillai College of Engineering, New Panvel Oct 2021.

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1	Swati Ringe, Sharwari Marathe, Rajesh Manjrekar, Raksha Shetty, "Teaching pre-schoolers using VQA: A Web app that answers natural language questions.", Zeichen Journal September 2020, Vol 6, Issue 9
2	Swati Ringe, Vedant Sakhardande, Cajetan Rodrigues, Atharva Aire, "Drone Delivery-Application and Path Optimization", Alochana Chakra Journal, September 2020, Vol 9, Issue 9
3	Roshni Padate, Hazel Lobo, Shreya Raul,, Renita Augustin,, "A Mobile Application for Detection and Classification of facial acne.", Alochana Chakra Journal Volume IX, Issue VI. June 2020,ISSN NO: 2231-3990,Scientific Journal Impact Factor-6.3
4	Roshni Padate , Dhananjay Chobhe ,Davina Pinto ,"Fire Detection System Using Convolutional Neural Network", Alochana Chakra Journal ,Volume IX, Issue XII. June 2020,ISSN NO: 2231-3990.Scientific Journal Impact Factor -6.3
5	Ashwini Pansare, Simran Gadkari, Jnnell Mathians, merlin P, "categorization of diabetic retinopathy and identification of characteristics to assist effective diagnosis" in 3 rd IEEE international conference on" Emerging smart computing and informatics" on 5th-? th March 2021
6	Mahendra Mehra, Steve D'Costa, Ryan D'Mello, Joseph George and Dr. D.R. Kalbande, "Leveraging Deep Learning for Nail Disease Diagnostic", 4th Biennial International Conference on Nascent Technologies in Engineering, IEEE Conference (Scopus indexed) , Jan 2021
7	Mehra Mahendra, Ajani Yameen, Mangalorkar Krish, Nadar Yohann and Kalbande Dhananjay, "College Project Preservation and Emulation using Containerization over Private Cloud", in Fifth International Conference on Information and Communication Technology for Competitive Strategies(ICTCS DEC 2020) Springer LNNS. ISBN Number- 2367-3370 Series
8	Mehra Mahendra, Sahai Vedant, D'Costa Jason, Srivastava Mayank and Dr. Kalbande Dhananjay, "Leveraging Deep Learning and loT for monitoring COVID19 Safety Guidelines within College Campus." 10th International Advance Computing Conference (IACC 2020) Springer CCIS
9	Merly Thomas, Nerissa Pereira, Simran Dabreo, Linnet Rodrigues, "Comparative Analysis of Fake News Detection using Machine Learning and Deep Learning Techniques.", International Journal of Emerging Technologies and Innovative Research (www.jetir.org), ISSN:2349-5162, Vol.7, Issue 4, page no.1379-1385, April-2020, Available :http://www.jetir.org/papers/JETIR2004387.pdf
10	Merly Thomas, Kenrick Fernandes, Jerome Nicholas, "Analysis of Semantic and Stylistic mage Generation", International Journal of Emerging Technologies and Innovative Research (www.jetir.org I UGC and issn Approved), ISSN:2349-5162, Vol.7, Issue 5, page no. pp 632-641, May-2020, Available at: hllp://www.jetir.org/papers/JETIR2005230.pdf
11	Monali Shelly, Sankalp Rane, "Selection of optimal cricket team based on the players performance", IEEE XPLORE ISBN:978-1-7281-5371-1, International Conference on Communication and Electronics Systems 2020 -July 2020
12	Monali Shelly, Christina D, Manthan K, Ofrin Lopes, "Virtual Mouse Using Object Tracking", I EEE Xplore, July 2020
13	Sharwari Marathe, Monali Shelly," Comparative Study of Botnet Detection System using Different Machine Learning Algorithms", SCOPUS UGC-CARE Approved group-II Journal

14	Supriya Kamoji, Dipali Koshti, Joshua Noronha, Smart Street lamps A solution to Urban Pollution 2nd International Conference on Inventive Research in Computing Applications (ICIRCA) 2020 organized by RVS college of Engineering and Technology, Coimbatore, India, on 15-17, July2020
15	K. Hariharan, A. Lobo and S. Deshmukh, "Hybrid Approach for Effective Disaster Management Using Twitter Data and Image-Based Analysis," IEEE-2021 International Conference on Communication information and Computing Technology (ICCICT), SPIT, Mumbai, 2021, pp. 1-6, DOI: 10.1109/ICCICT50803.2021.9510029.
16	Carol Sebastian, Princeton Barello, Sherwin Pillai, Supriya Kamoji ,"Virtual assistance using question generation/ Answering", 4th IEEE Sponsored International Conference on Communication, Information and Computing Technology (ICCICT 2021), June 25-27-2021, Organized by SPIT Mumbai, India
17	Dipali Koshti,, Kevin Cheruthuruthy, Surya Pratap Shahi, Mayank Mishra," A Detection, Tracking and Alerting System for Covid-19 using Geo-Fencing and Machine Learning, IEEE Sponsored 5th International Conference on Intelligent Computing and Control Systems (ICICCS-21), May 6-8-2021, organized by Vaigai College of engineering, Madurai, India.
18	Chaudhari Sunil, Ria Gupta , Dishank Oza ," Real time Hand Tracking and Gesture Recognizing Communication System for physically disabled People"
19	Yameen Ajani, Krish Mangalorkar,Yohann Nadar, Sunil Chaudhari,Mahendra Mehra "Homomorphic encryption for secure conversations with Al bots over cloud to prevent Social Engineering attacks" lnternational Journal of Engineering Research and Applications. ISSN: 2248-9622, pp. 21-27
20	Kalpana Deorukhkar, Kevlyn Kadamala, Elita Menezes, "FGTD: Face generation from Textual description", 5th International conference on Inventive Communication and Computational Technologies ICICCT 2021), June 2021, Scopus Source ID: 21100901469
21	Diabetes and Liver Detection Using Machine Learning Algorithms", SSRN Electronic Journal, Meera Ghaskadvi, Sakshi Khochare, Rozebud Gonsalves, Prajakta Dhamanskar, 22 Jul 2021
22	"Pneumonia and Diabetic Retinopathy Detection Using Deep Learning Algorithm", Advances in Intelligent Systems and Computing, Meera Ghaskadvi, Sakshi Khochare, Rozebud Gonsalves, Prajakta Dhamanskar, 2021
23	Khanore, M., & Unnikrishnan, S., "A Simple and Sturdy Hybrid Interference Canceller for DS-CDMA System in Multipath Environment for Static and Mobile Users", Proceedings of Third international Conference on VLSI, Communication and Signal Processing (VCAS), pp: 145-154, October 2020.
24	Khanore, M., & Unnikrishnan, S., "Interference Canceller for Spread Spectrum Modulation Based Multiple Access Systems", ICTACT International Journal on Communication Technology, pp: 2231-2238, Vol. 12(1), March 2021.
25	Kolhatkar, C., Wagle, K. (2021). "Review of SLAM Algorithms for Indoor Mobile Robot with LIDAR and RGB-D Camera Technology", In: Favorskaya, M.N., Mekhilef, S., Pandey, R.K., Singh, N. (eds) Innovations in Electrical and Electronic Engineering. Lecture Notes in Electrical Engineering, vol 661. Springer, Singapore.
26	Chinmay Kolhatkar, Kranti Wagle. Review of SLAM Algorithms for Indoor Mobile Robot with LIDAR and RGB-D Camera Technology, Part of the Lecture Notes in Electrical Engineering book series 2021 (LNEE, volume 661) pp 397-409 DOI: 10.1007/978-981-15-4692-1_30

Year 2019-20

Sr. No	Paper Publication Details
1	Pradnya Borkar, Merlyn Pulinthitha, Ashwini Pansare "Match Pose - A System for Comparing Poses", International Journal of Engineering Research & Technology (IJERT),ISSN: 2278-0181,Vol. 8 Issue 10, October-2019
2	Mahendra Mehra, Dr. D. R. Kalbande, Shubham Mankar, Sohaa Mutsaddi," Data mining in Educational System for effective Student Mentoring", ICAC319 IEEE Conference, 20-21st December , Mumbai
3	Simran Gadkari, Jenell, Ashwini Pansare," Analysis of pre trained Convolutional Neural Networks to Build a Flower Classification System", IJRASET, Volume 7, Issue XI, Nov 2019, ISSN:2321-9653
4	Monali Shelly, Ashley Lobo, Kartick Hariharan , Suyash Sreekumar ," Time Optimal long distance trip planning for electric vehicles", IEEE 2019 5th International Conference on Computing Communication Control and Automation ICCUBEA- IEEE conference,2019. ISSN: 978-1-7281-4042-1/19.hllp://doi.one/10.1729/Journal.23359
5	Dipali K.Bhise, Bhushan T.Patil, Vasim A.Shaikh, Sujata P.Deshmukh, "Investigating the micro lubrication flow inside the nozzle using computational fluid dynamics", Materials Today: Proceedings, Volume 27, Part 1, 2020, Pages 492-496, ScienceDirect 2020.
6	Preeti Jain, Sunil K Surve "Evaluating Resource Centric Behavior of Workloads and Performance Analysis in CMPs due to Shared Resources" International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249-8958, Volume-8, lssue-6, August 2019. Retrieval Number F8872088619/2019©BEIESP DOI: 10.35940/ijeat.F8872.088
7	Preeti Jain, Sunil K Surve, "Resource Centric Characterization and Classification of Applications Using K-Means for Multicores" 978-1-5386-8350-7/19/$31.00 ©2019 IEEE, ICOIN 2019. DOI: 10.1109/ICOIN.2019.8717981
8	Preeti Jain, Sunil K Surve "Coordination and Synchronization in Multiagent System Based On Tilman Model of Resource Sharing"
9	Preeti Jain, Sunil K Surve, Dinesh Kumar Gautam "Modelling Shared Resource Competition for Multicores Using Adapted Tilman Model" January 2020 DOI: 10.1007/978-981-32-9515-5_38
10	Preeti Jain, Sunil K Surve"A Review of Shared Resource Contention in Multicores and its Mitigating Techniques" lnt. J. of High Performance Systems Architecture, Vol. x, No. x, 2019
11	Mahendra Mehra, Vedant Sahai, Pratik Chowdhury, Elvis Dsouza "Home Security System using IOT and AWS Cloud Services" 2019 IEEE International Conference on Advances in Computing, Communication and Control, 20-21ST December 2019
12	Kamoji S., Koshti D., Peter R. (2020) Analysis of Growth and Planning of Urbanization and Correlated Changes in Natural Resources. In: Raj J., Bashar A., Ramson S. (eds) Innovative Data Communication Technologies and Application. ICIDCA 2019. Lecture Notes on Data Engineering and Communications Technologies, vol 46. Publisher Springer, Cham. Print ISBN: 978-3-030-38039-7, Online ISBN: 978-3-030-38040-3, DOI: https://doi.org/10.1007/978-3-030-38040-3_23
13	Dipali Koshti , Supriya Kamoji, Nehal Kalnad , Sreekumar Suyash, Shreya Bhujbal, , " Video Anomaly Detection using Inflated 3D Convolution Network", 5th IEEE International Conference on Inventive Computation Technologies (ICICT-2020) organized by RVS Technical Campus , 26-28 February 2020 at Coimbatore.

14	Supriya Kamoji, Dipali koshti, Alphaeus Dmonte, Solomon Jose George, Clayton Sohan Pereira, "Vehicle Identification and Speed Measurement",5th IEEE International Conference on Inventive Computation Technologies (ICICT-2020) organized by RVS Technical Campus , 26-28 February 2020 at Coimbatore.
15	Kalpana Deorukhkar, Gauri Jare, Aishwarya Sebin, Wensita Rodrogues," Speech Assistance for the Deaf', Journal of Emerging Technologies and Innovative Research, Volume 7, lsuue 4, March 2020, DOI: http:/ldoi.one/10.1729/Journal.23359
16	Dr Brijmohan Daga, Juhi Checker, Sayali Deo, Anne Rajan," Computer Science Career Recommendation System using Artificial Neural Network", IJCTT, 20 March 2020.
17	Yashom Dhige, Yash Turkar, Cristo Aluckal, Yogesh Agarwadkar, Dr. Sunil Surve, "Dynamic path planning system for UAV remote sensing in urban environments", National Symposium on Innovations in Geospatial Technology for sustainable Development with special emphasis on NER, ISG, ISRS, Shillong, Meghalaya, India, November 20-22, 2019,
18	CristoAluckul, Yash Turkar, Yashom Dhige,, Sumedh Deshpande,, B. K. Mohan, Yogesh Agarwadkar, Sunil Surve, Brijmohan Daga, "Dynamic real- time indoor environment mapping for Unmanned Autonomous Vehicle navigation", IEEE International Conference on Advances in Computing, Communication & Control, Fr. Conceicao Rodrigues College of Engineering, Mumbai, India, December 20-21, 2019.
19	Roshni Padate, Dhanajay Chobhe, Davina Pinto," Fire detection system using convolutional neural network", International Journal Of Scientific & Technology Research, Volume 9, Issue 04, ISSN 2277-8616, APRIL 2020, doi: 10.14445/22312803/IJCTT-V68I3P115
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23	Merly Thomas, Nerissa Pereira, Simran Dabreo, Linnet Rodrigues, "Comparative Analysis of Fake News Detection using Machine Learning and Deep Learning Techniques.", JETIR April 2020, Vol 7, Issue 4
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25	Human Computer Interaction using Hand Gestures and Voice, IEEE Xplore, Prajakta Dhamanskar, Aniket Poojari, Harshita Sarawade, Renita Dsilva, 2019
26	M. Khanore, S. Unnikrishnan, Convergence and BER approximation of HIC detector for DS-CDMA system in Rayleigh fading multipath environment. Int. J. lnnov. Technol. Explor. Eng. (IJITEE) 9(6), 2082-2088 (2020)
27	M. Khanore, S. Unnikrishnan, Hybrid interference cancellation for static and non-static users in OS-CDMA system, in 6th International Conference on Advances in Computing Communication and Control 2019 (ICAC3'19) (2020)
28	SatyaSathvik Kadambari, Gauraang Prabhu, Deep Mistry, Monica Khanore, "Automation of Attendance System Using Facial Recognition", in 6th International Conference on Advances in Computing Communication and Control 2019 (ICAC3'19) (2020)
29	Rochelle Cordeiro, Anol Kurian, Brinel Dsouza, Brijmohan Daga, "Automated training for Job Interviews", International journal of computer trends and technology (IJCTT), 68(3),74-79.March 2020, doi: 10.14445/22312803/IJCTT-V68I3P115

30	Kalpana Deorukhkar, Deljin Jaison, Sanjeev Hippurgikar, Shubham Ambilkar, "Text summarization on Amazon food reviews" , International Journal of Emerging Trends & Technology in Computer Science (IJETTCS), Volume 9, Issue 2, March -April 2020, pp. 010-012

Books Published:

S.No.	Title with page no.	Type of Book & Authors Name	Publisher & ISSN/ ISBN No.	Whether Peer Reviewed	No. of Co-authors and date of public ation	Whether you are the main author	International/ National/ State/ Local publisher
1	Computer Network and Network Design	Technical Prof. Monali Shelly	Techknowledge Publication ISBN - 978-93-90428-23-6	Yes	13/2/2021	Equally contributed	National publisher
2	Advanced System Security and Digital Forensic	Technical Co-author Prof. Monali Shelly	Techknowledge Publication ISBN - 978-93-89503-14-2	Yes	15/7/2019	Equally contributed	National publisher
3	Artificial Intelligence & Soft Computing	Technical Co-Author Dipali Koshti	Techknowledge Publication ISBN: 978-93-89424-35-5	Yes	1 July 2019	Equally contributed	National
4	Neural Network and Fuzzy Logic	Technical Co-Author Dipali Koshti	Techknowledge Publication ISBN: 978-93-89503-34-0	Yes	2 October 2019	Equally contributed	National
5	Mobile Communicati on and Computing	Technical Co-Author Dipali Koshti	Techknowledge Publication ISBN: 978-93-89424-36-2	Yes	1 July 2019	Yes, equally contributes	National
6	2019 international Conference on Advances in Computing, Communicati on and Control (ICAC3 2019)	Dr. Srija Unnikrishnan, Dr. Sunil Surve, Dr. Deepak Bhoir	Institute of Electrical and Electronics Engineers (IEEE) ISBN: 978172812387 5				Curran Associates, Inc. (Jul 2020)
7	2021 international Conference on Advances in Computing, Communicati on, and Control	Dr. Srija Unnikrishnan, Dr. Bhushan Patil, Dr. Jagrut1 Save, Dr. Sujata Deshmukh	Institute of Electrical and Electronics En meers (IEEE) ISBN:				Curran Associates, Inc. (Apr 2022)

	(ICAC3 2021)		978166542635 0				

Book Chapters:

S No.	Title with page no.	Type of Book & Authors Name	Publisher & ISSN/ ISBN No.	Whether Peer Reviewed	No. of Co-author s and date of public ation	Whether y ou are the main author	International/ National/ State / Local publisher
1	Object Oriented Programmin g using Java Edition 6	Technical Addition of a chapter. Prof. Swati Ringe	Tata Mc Graw Hill ISBN:9789353 162344	Yes reviewed by Balagurus wamy	25 March 2019	Addition of New Chapter "Object Oriented Methodology in Java" and corrections in 3 chapters	American educational publishing company
2	Intelligent Cyber Physical Systems and Internet of Things Chapter 45	Chapter Title: A Brief Review of Network Forensics Process Models and a Proposed Systematic Model for Investigation Prof. Merly Thomas	Springer (Verlag) 978-3-031-18496-3 (ISBN)	Yes IColCI 2022	6am. February 2023	Yes	International DOI: 10.1007/978-3-031-18497-0

Patents:

1. Dr. Sujata Deshmukh and team filled a design patent with Application Ref Number-374640-001, cbr Filing Date-25/11/2022 -Indian Patent Office, Article for Printing 3d parts using Electrochemical Deposition
2. Dr. Sujata Deshmukh published a patent with Application Ref Number-202241051449, Filing Date-08/09/2022 -Indian Patent Office, loT and Artificial Intelligence based fruit recognition, calorie estimation and suggestion for healthy life using Deep learning algorithms
3. Prof. Monali Shelly and team published a patent with Application Ref Number-202221060823, Publication date - 18/11/2022 - Indian Patent Office, Blockchain based system for project funding and CSR funding.

List of Faculty Guiding the Ph.D. students

S.No.	Ph. D Student Name	Faculty Name	Research Area	University and Year of Registration / Date of Defense
1.	Mr. Jayen Modi	Dr. Sunil Surve	Congestion mitigation & Alleviation in wireless sensor networks	Mumbai University 24-Sep-18 / Pursuing
2.	Ms. Preeti Jain	Dr. Sunil Surve	Coordination And Synchronization of Shared Resources for MultiAgent Systems	Mumbai University 18-Apr-17 / 2-Mar-22
3.	Mr. Rohan Appasaheb Borgalli	Dr. Sunil Surve	Learning Algorithm for Facial Expression Recognition (FER) System	Mumbai University 7-May-21/Pursuing

List of Faculty Awarded Ph.D.

S. No.	Ph. D. Student's Name	Faculty Name	Research Area	University and Year of Registration / Date of Defense

List of faculty Pursuing Ph.D.

Sr.No	Name of Faculty
1	Prof. Merly Thomas
2	Prof. Monica Khanore
3	Prof. Roshni Suresh Padate
4	Prof. Kalpana Deorukhkar
5	Prof. Ashwini Pansare
6	Prof. Supriya Kamoji
7	Prof. Nagdeote Sushma
8	Prof. Monali Shelly
9	Prof. Sangeeta Parshionikar
10	Prof. Prajakta Dhamnaskar
11	Prof. Lokhande Unik

5.5.1 Sponsored Research (5)

Institute Marks : 0.00

2021-22 (CAYm1)

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

2020-21 (CAYm2)

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

2019-20 (CAYm3)

Project Title	Duration	Funding Agency	Amount
Unmanned Aerial Vehicle - Logistics for medical and food supply	12 months	Mumbai University	30000.00
Smart cradle for reducing risk of SIDS	12 months	Mumbai University	25000.00
Real Time Fire Detection and Suppression System using Al	12 months	Mumbai University	25000.00
Assistant to the Hearing Impaired (Speech Recognition)	12 months	Mumbai University	30000.00
"Audio Classification With Wireless Sensor Networks Using Machine Learning for Home Security"	12 months	Mumbai Univesity	40000.00
			Total Amount(Z): 150000.00

Cumulative Amount(X + Y + Z) = 150000.00

5.5.2 Development Activities (10)

Institute Marks : 7.00

- **Product Development**
  Students work on a project over an extended period of time - over two semesters as a part of course "major/mini project" and individual subject mini project - that engages them in solving a real-world problem or answering a complex question as well as participating in competitions. Some of the student groups carry out product based projects. Product development is the process required to bring a product from concept stage to market, Faculty is providing necessary guidance and training for the students to realize this objective.

Some sample product based projects are discussed here

1. ERP Solutions Using SaaS

Project emphasizes the potential of SaaS-based ERP systems for SMEs through an affordable solution. It is based on the organizations need to become more competitive, efficient, and productive. On cloud computing Small and Medium-sized Enterprises (SMEs) can implement an ERP system in a short time frame in a cost-effective way so that investment and management costs associated with the on-premise model can be reduced.

2. Video Captioning Web Application with the Ability to Read out the Video Captions

Real-world videos often have complex dynamics; and methods for generating open-domain video descriptions should be sensitive to temporal structure and allow both input (sequence of frames) and output (sequence of words) of variable length. Additionally, access to the descriptions of such videos is quite limited. To approach this problem, the project employs an end-to-end sequence- to-sequence model to generate captions for videos. After being trained on video-sentence pairs and learning to associate a sequence of video frames to a sequence of words in order to generate a description of the event in the video clip the model naturally is able to learn the temporal structure of the sequence of frames as well as the sequence model of the generated sentences, i.e., a language model. Further, the text to speech module is used and deploying the working model as a web application.

3. Coconut Harvesting

Coconut harvesting has always been a risky profession being the reason for hundreds of deaths each year. The Robot will then automatically guide itself near the coconuts' branch and then the robotic arm will position itself to cut it. The robot will then climb down the tree.

The robot will climb the tree using a suspension mechanism and high torque motors, by placing the wheels vertically along the bark they will exert a perpendicular force against it and the bot will climb up.

The deep learning models are used to identify the coconut bunch and the branch. It will then use ROS to control the arm, and then it will automatically cut it.

Cheaper alternative to manual climbing. Fulfilling the shortage of manual labor and eventually eliminating it. The robot can work for longer hours as compared to humans. The robot will replace manual climbing and therefore save lives.

The project creates value for the coconut farm owners and firms which need to harvest coconuts by providing a cheaper solution and eliminating the problems caused labor shortage

4. Integrity Verification for Digital Assets

The application implements and develops an audit trail for any input passed to it by using the following steps:-

Here it is to be noted that the input passed to the proposed solution can be any digital assets such as videos, an image, an audio stream and documents like pdf, spreadsheets, etc.

a. The app generates the corresponding hash value of the input digital asset and also watermarks the content piece using a digital signature. Perceptual hash of the video is calculated after converting the frames to grayscale images to reduce the impact of pixel variance on similarity score.

b. This cryptographic hash value is then passed to the decentralized network so that it can be stored on the distributed ledger i.e., blockchain ledger. Now, any duplicate video, audio, or tampered digital document can be simply checked by uploading it on the application. The algorithm checks the authenticity and integrity of the digital asset by verifying the hash value and scrutinizing it against various smart contract constraints.

c. If all the requirements are fulfilled, the application will display a message stating that the integrity of the digital asset is maintained. Likewise, it will also mention if the data is tampered with in case of data integrity being compromised. with and reject it simultaneously.

The application leverages the use of blockchain technology to reliably store confidential information; It automatically logs all interactions taking place within the application as transactions and also writes the identifier-hash mappings on the distributed ledger for each of these log entries.

- **Research Centre/Lab**
  - Department has applied for a PhD research center under Mumbai university and 3 Ph. D Guides are available in Computer Engineering Department
  - Department has Received Grants from MRG and MODROB.
  - Department has advance computing facilities like ML Server, Cloud computing Server, and D Link Kit
  - Department has started offering the Honours courses-Blockchain and cyber security in order to facilitate the students to choose additionally the specialized courses in the emerging areas of their choice and build their competence in such domain.
  - Currently 3 faculty members with PhD Degree and 11 faculty members are pursuing PhD. in different domains Research domains and the facilities in CE department

Research domain	**Description**	Facility

Data Science, Artificial Intelligence and Computing	Machine Learning, Deep Learning, Natural Language Processing, Big Data Analytics, Data and Web Mining, Machine Vision, Cloud Computing	Advanced Computing Lab supported with ML server and Cloud server.
Cyber Physical Systems	Blockchain Technology, Cryptography and Network Security, Cybernetics, Human- Computer Interaction, Robotics, Quantum Computing, Internet of Things	Network and Security Lab supported with D Link DCS wireless kit and switches.
Software and System Engineering	Algorithms, Computer Architecture, Operating system, Database Systems Software Engineering	Programming and Database Lab

Research Lab (508) details are as given below:

Machine Configuration:
Lenovo Neo SOT gen 3(Think Centre) Desktop Tower i3 12th gen/ 1TBHDD / 7200rpm/dos Lenovo 8GB DDR4 Desktop RAM, Lenovo 19 inch monitor 18.5"/46.99cm C 19-10 (D19185AD0) Monitor HDMI, With USB keyboard & Mouse.

No. of Machines - 10
Softwares Installed:

OS - Ubuntu 20.04 (Xubuntu) Programming Languages - GCC9 Java 11 Py1hon 3.8 php 7.4 Scilab R Umb rella IDE **Arduino** Android-Studio Code:Blo cks Eclipse Jupyter Notebook Netbeans IDE 8.1 VScode	Networking - apache ssh ftp gftp Filzilla NS2 **Vmware** Wireshark Cisco PacketTracer 6.3 gns3 **Database-** Mysql-workbench Postgresql-PgAdmin3 Mining, ML and Analytics Weka R-Studio, Python Libraries

Instructional materials

- Instructional materials provide the core information that students will experience, learn, and apply during a course. Such materials, faculty planned, selected, organized, refined carefully and used in a course for the maximum effect. The planning and selection of instructional materials should take into consideration both the breadth and depth of content so that student learning is optimized.

- **Instructional materials include**
  - Print Materials: Readings, Syllabus, Assignments, Lab Manuals, Rubrics Digital Media/Recorded Lectures (Audio or Video)
  - Presentation Materials: Lecture Notes, PowerPoint, Handouts
  - Open Educational Resources (OER): Textbooks, Online Articles, Audio or Video Clips, Links to Online Resources, Databases, Examples; Simulations
  - The faculty provide instructional materials through google classroom or moodle to the students.

Working models/charts/monograms etc.
In every lab appropriate charts are available

5.7.3 Consultancy (from Industry) (5)

Institute Marks : 0.00

2021-22 (CAYm1)

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

2020-21 (CAYm2)

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

2020-21 (CAYm3)

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

5.8 Faculty Performance Appraisal and Development System (FPADS) (30)

Total Marks 25.00

Institute marks: 25.00

FRCRCE established an Internal Quality Assurance Cell (IQAC) that adheres to the detailed standards of the National Assessment and Accreditation Council, an independent organisation created by the UGC. The central administrative framework for the college is developed through the IQACs efforts.

The Internal Quality Assurance Cell of FRCRCE was constituted in 2018. It is performing following tasks on regular basis

1. Improvement in quality of teaching and research by regular inputs to all concerned based on feedback from various stakeholders.
2. Providing inputs for best practices in administration for efficient resource utilisation and better services to students and staff.
3. Providing inputs for Academic and Administrative Audit and analysis of results for improvement in areas found weak.

A. Assessment of the performance:

1. Teaching, learning and evaluation related activities

Teaching: (Classes taught include session tutorials, lab and other teaching related activities): Regular and punctuality to class, remedial teaching, clarifying doubts, counselling and mentoring, additional teaching etc.

2. Examination, Evaluation Activities and Administrative Support & Participation in Students' Research, Co-curricular & Extracurricular Activities:

(a) Administrative responsibilities such as Head, Co-ordinator, Class teacher etc.
(b) Examination and evaluation duties assigned by the University or attending the examination paper evaluation.
(c) Student related co-curricular, extension and field based activities such as students clubs, career counselling, study visits, student's seminars and other events, cultural, sports, NSS and community
services.
(d) Organising seminars/conferences/workshops, other universities activities.
(e) Evidence of actively involved in guiding Ph.D. students.
(f) Conducting minor or major research projects sponsored by national or international agencies.
(g) At least one single or joint publication in peer reviewed or UGC list of Journals.
(h) Presentation of papers and chairing of sessions
(i) Guiding and carrying out research projects and publishing the research output in national and international journals

B. Process followed:

- IQAC prepares self-appraisal form as per UGC guidelines considering following parameters:
- Curriculum Coverage (Theory and practical)
- Development of Course Material
- Students Attendance Register Record
- Academic Results
- Projects Guided
- Mentoring and Student Counseling

- Student Feedback
- Faculty Development
- Interaction with the Outside World
- Courses/Seminars/Conference Organized in College
- Publications
- Faculty members fill a self-appraisal form and evaluate
- Faculty member submits a self-appraisal form in the office.
- Principal announces dates of self-appraisal.
- Panel consisting of Director, Principal and HOD interviews Faculty members.
- Principal and HODs assess the performance of each faculty member.
- The assessment process is transparent and faculty members are informed about the assessment results and the areas of improvements.
- Accordingly, faculty decides the corrective measures to improvise the performance and follows the same in the following year.

C. Impact of self-appraisal

A self-appraisal tool aids faculty in identifying their strengths, flaws, and opportunities for academic progress. To address these challenges, the panel supports faculty growth in all areas. The panel encourages involvement in research and consulting projects in order to fulfil the institutes vision and mission. As a result of this appraisal system, the faculty of the computer department appeared in the PET and GATE exams for further study in order to improve their academic performance. In accordance with the self-evaluation, the majority of the faculty is presently pursuing Ph.D. The faculty achieves promotions and rewards through a self appraisal system.

5.9 Visiting/Adjunct/Emeritus Faculty etc. (10) Total Marks 1.00

Institute Marks : 1.00

The College believes in conveying knowledge through a variety of methods. In addition to regular lectures and labs, students participate in several technical and non-technical committees/councils. They are encouraged to participate in various events such as Hackathon, Robotics, Project Competition, Automobile Design and Manufacturing, Workshops, Guest Lectures by Industry professionals and famous professors, Industrial Visits, etc.

6 FACILITIES AND TECHNICAL SUPPORT (80) Total Marks 69.00

6.1 Adequate and well equipped laboratories, and technical manpower (30)Total Marks 25.00 Institute Marks: 25.00

Sr. No	Name of the Laboratory	Number of students per set up (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
	Database management Lab(603)	20	Lenovo Neo 50T gen3(Think Centre) Desktop Tower i3 12th gen/1TBHDD / 7200rpm/dosLenovo 8GB DDR4Desktop RAMLenovo 19 inch monitor18.5"/46.99cm C 19-10(D19185AD0) MonitorHDM With USS keyboard Mouse.	24	Ajay Kali	Sr. Lab Assistant.	Diploma In Industrial Electronics
2	Analysis of Algorithm (604)	20	Lenovo Neo 50T gen3(Think Centre) DesktopTower i3 12th gen/1TBHDD / 7200rpm/dosLenovo 8GB DDR4Desktop RAMLenovo 19 inch monitor18.5"/46.99cm C 19-10(D19185AD0) MonitorHDM With USS keyboard Mouse.	30	Ajay Koli	Sr. Lab Assistant	Diploma In Industrial Electronics
3	Computer Network & System Security Lab (609)	20	Dell 3020MT Optiplex, Core i3 4th Gen. Intel CPU + M/B, 4GB Ram, 500GB H/D, USB KeyBoad + Optical Mouse, Dell 18.5" LED **TFT** Monitor	22	Pooja Banekar	Lab Assistant	Diploma in Electronics Engineering
4	Web Technology and software engineering Lab (611)	20	HP Desktop 202 G1 MTFOK63AV, Intel i3 4Ghz CPU, 4GB RAM, 500GB HOD, USB Keyboard & Optical Mouse, Compaq 18.5" LED Monitor	26	Pooja Banekar	Lab Assistant	Diploma in Electronics Engineering

5	Computer Programming Lab (710)	50	1. DELL Desktop Optilex 3050MT, Processor i3(7100), 8GB DDR4 RAM, 1TB SATA HOD. 2. Lenovo Desktop V530-10TWA006IH 8th Generation Intel @Core#i3-8100 Processor @ 3.6 GHz, 2400MHz, 6MB Smart Cache, 64 Bit/ 4 GB DDR4 2400RPMRAM 11TB SATAHDD.	26	Jiten Naik	Sr. Lab Assistant.	B.Sc.l.T
6	Advanced Computing & Machine Learning Lab (601)	20	ACER VERITON MT DESKTOP, CORE i3 6100 H110-M4 PROCESSOR, 8GB DDR4 **RAM,** 1TB HOD, Integrated graphics, 19.5" WTFT Display, USB Keyboard & Optical Mouse, Gigabit LAN	28	Pankaj Yadav	Mechanic	CCNA, LLB
7	Distributed Computing Lab(602)	20	LENOVO THINK CENTER E73 DESKTOP, CORE i3, H81 CHIPSET, 4GB DDR3 RAM,500GB SATA HOD, HD GRAPHICS	30	Pankaj Yadav	Mechanic	CCNA, LLB

6.2 Additional facilities created for improving the quality of learning experience in laboratories (25) Total Marks 20.00

Institute Marks: 20.00

Sr. No	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students are expected to have enhanced learning	Relevance to POs/PSOs
1	Machine Learning Server-ThinkSystem SR650 Lenovo	Server: ThinkSystem SR650 RAM: 16GBX4 qty(64GB) Processor: Intel Xeon Silver 4208 8C 85W 2.1GHz GPU: ThinkSystem NVIDIA Tesla V100S 32GB PCIe Passive GPU HDD-3TB	With the rise of big data, Al and machine learning methods have rapidly moved from purely conceptual to powerful business tools. Businesses are producing more data than ever before, all of which will need processing, classification, and analysis. Al and machine learning projects need to process high volumes of unstructured data with sophisticated mathematical models which demand the highest level of computing power and performance. The newly built lab facility with dedicated servers offers the possibility of implementing various Al software solutions to begin Al projects in the cloud. This facility helps accelerating ML projects and ML based applications. It helps to improve research capabilities in the ML domain. It is used to serve the diverse needs of undergraduate classes as well as research workloads.	Research Development and Projects. It will be useful for conducting advanced experiments for course code CSC701(ML),CSC702(BDA), CSDC8011(DL) & ; CSDC8021(Optimization in ML) Also will be useful for Mini Project and B. E Major project implementation.	ML and Al Application Developme nt, Deep Learning based Application s.	PO3, PO5, PSO1

2	Cloud server	Server 3.3 Ghz / 8 mb / 80 w 1xB GB Intel Xenon E3 -1225 v5 3.3 / 5 mb / 1x8 GB DDR 4/ DVD writer 2900ps (S/N G2TY1272)	Cloud Computing is a quickly growing segment of the technology industry and is an incredibly popular and beneficial data storage resource. Cloud computing has made it easier for businesses to access their data and benefit from computing resources without having to buy and maintain physical data centers and servers, as data is stored in the cloud. Businesses have almost reached the point where working within the cloud is a necessity. Be it for data storage, data synchronization, web-based apps, or even cloud-based operating systems, for businesses to keep up with the rapidly changing world around them, they must ride the cloud. However, that doesn't mean you need to depend upon a third-party to host your cloud. This facility is created to eliminate the dependency of third party to host the cloud and for efficient data storage.	Projects and academics. It will be useful for conducting advanced experiments for course code CSL605(CC)	AWS Certification and Advance study in Cloud Computing	PO3.PO5.

6.3 Laboratories: Maintenance and overall ambiance (10) Total Marks 9.00

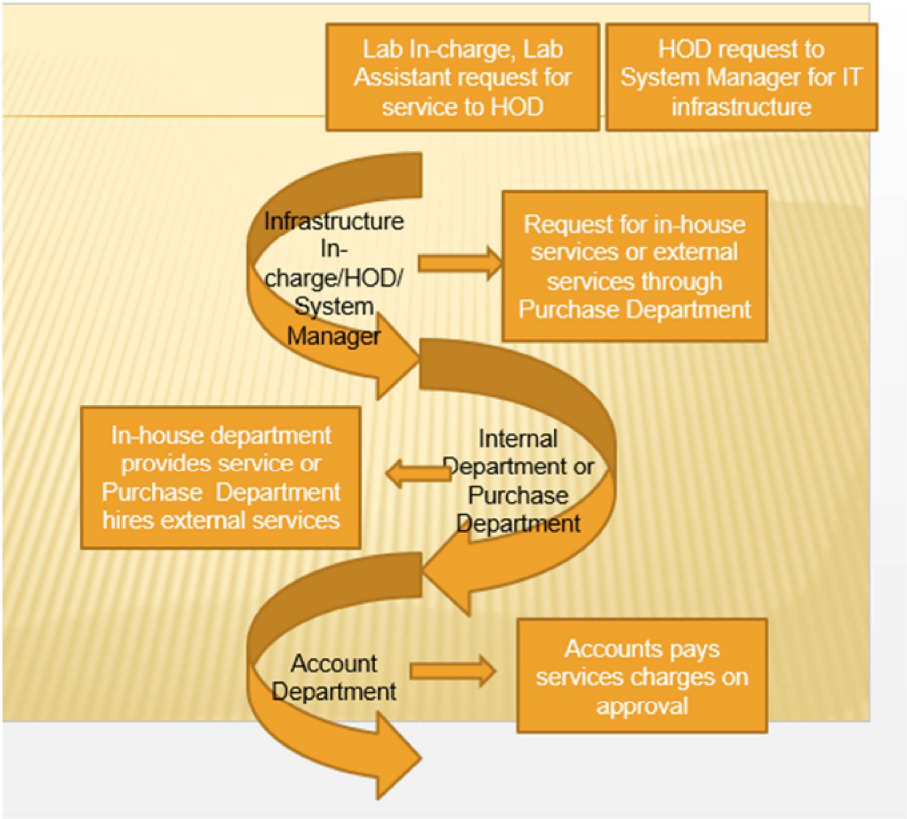
Institute Marks : 9.00

Maintenance

- Department ensures regular maintenance of equipment, systems, software maintenance, electrical accessories, air conditioners, etc.

- Most of the computer related maintenance is done in-house by technical staff.
- In case external service is required, external service providers are called by purchase department.
- Most of the services are available in the campus. Internal services which are available in the campus are availed by internal requests. Major services available in campus are: carpentry, civil, electrical, welding, etc.

- The Institute has well defined process to use internal or external service:
  - For internal services, interdepartmental request can be send. On receiving the request,the concerned department provides service. On completing the work, the concerned department raise the bill which is paid by office.
  - For external service, the request is send to purchase department. Purchase department calls the service provider as per the list available with department. The concerned service provider submits the quotation. If quotation is as per the MOU signed, the work is assigned to the concerned service provider. On completion of the job, concerned service provider raises the bill which is paid by office.



- Institute has Infrastructure In-Charge who is responsible for maintenance of the common infrastructure which includes corridors, washrooms, classrooms, etc.
- A faculty member is appointed as floor in charge who is responsible to identify maintenance requirement for common infrastructure and report to Infrastructure in-charge. Depending on type of maintenance, Infrastructure head hires either internal service or external service following the procedure as described above.
- Institute has appointed external agencies for maintenance of infrastructure, equipment and other facilities such as lifts, fire extinguishers, fire systems, UPS, water purifiers, water coolers, photocopy machines, etc. Some of them are maintained through an annual maintenance contract.
- Housekeeping service is hired for day-to-day cleaning of common facilities such as washrooms, corridors, etc.

Ambiance:

- All laboratories are air-conditioned and have minimum 20 terminals.
- Every student performs practicals independently, i.e., every student uses independent computer for performing practical.
- Internet is available of every system.
- Every lab has white board installed.
- Laboratories are designed such a way that sufficient moving space is available.
- Lab manuals of all experimental procedures for concerned labs are provided.

6.4 Project laboratories (5) Total Marks 5.00

Institute Marks : 5.00

Project Laboratory resources

- Total number of computers: 50
- Mainly used for project work like Mini project, Major project.
- Remote access to Machine Learning server
- Following softwares/tools are available in the Lab:
  - OS: Lubuntu 20.04
  - Compilers: C, C++, JDK 11 , Python 3x, PhP
  - Tools: Network Simulator 2, Wireshark 2.0.2, CISCO packet tracer
  - Database: pgAdmin IV, PostgreSQL 1.22.0
  - IDE: Eclipse Mars Release 4.5, Netbeans 8.0, VS-code, Pycharm, Code Blocks
  - QtOctave 0.10.1, Spyder 2.3.8, SCILAB, QT5, WEKA
  - RStudio 1.0.136
  - UML Tools: Umbrello 2.18.3, Violet UML Editor 2.1,
  - VirtualBox 5
- As per the project requirement, the required open source tools, IDE, libraries are installed.
- Students are allowed to carry their laptops and work in the lab
- All softwares are regularly updated
- Subscribed e-journals available through Institute IP address

Utilization

- Used at least 6 hours per day
- Kept open up to 6 PM everyday
- Students can work late in evening by taking prior permission

6.5 Safety measures in laboratories (10) Total Marks 10.00

Institute Marks: 10.00

Sr. No	Laboratory Name	Safety Measures
	Advanced Computing and Machine Learning Lab	1. Fire extinguisher is available on every floor and refilled regularly. 2. Proper branded MCBs are provided in the lab 3. Structured cabling is provided in the lab. 4. Fire hose pipes for fire protection General Safety Measures in all laboratories. • Triple protection to all electrical accessories • Regular maintenance of electrical network • Fire Extinguishers available near to labs and classrooms and are refilled periodically. • Workshop on Fire and electrical safety conducted periodically • The locations and operating procedures of all safety equipment including first aid kit(s), and fire extinguishers are displayed on notice board.
2	Distributed Computing Lab	1. Proper branded MCBs are provided in the lab 2. Structured cabling is provided in the lab.
3	Database management Lab	1. Proper branded MCBs are provided in the lab 2. Structured cabling is provided in the lab.
4	Analysis of Algorithm Lab	1. Proper branded MCBs are provided in the lab 2. Structured cabling is provided in the lab.
5	Computer Network and Security Lab	1. Proper branded MCBs are provided in the lab 2. Structured cabling is provided in the lab.
6	Web Technology and Software Engineering Lab	1. Proper branded MCBs are provided in the lab 2. Structured cabling is provided in the lab.
7	Computer Programming Lab	1. Proper branded MCBs are provided in the lab 2. Structured cabling is provided in the lab.

7 CONTINUOUS IMPROVEMENT (50) Total Marks 46.00

7.1 Actions taken based on the results of evaluation of each of the POs & PSOs (20)

Total Marks 18.00
Institute Marks: 18.00

POs Attainment Levels and Actions for Improvement- (2021-22)

POs	Target Level	Attainment Level	Observations
PO 1 : Engineering Knowledge			
PO 1	2.7	2.76	Target level has been achieved. However, following observations were made: A competent computer graduate should have a solid foundation of theoretical and practical knowledge of science and mathematics, which they should correlate and apply in their projects and research.
Action 1: Students are encouraged to participate in technical events where their basic knowledge converts to application matching, with defined level of requirements for solving real world problems. Action 2: Incorporation of more numerical problems during the regular lectures and as assignments for subjects like Applied Mathematics, DSGT, including application driven problem solving to strengthen their acquired knowledge. Action 3: Students are encouraged to register for online courses (Swayam, NPTEL, MOOCs) launched by AICTE. Moreover, they are given guidance and motivation for self-study. Action 4: In the course Computer Networks students learn about protocols and algorithms to facilitate communication between devices. But there are no pre-requisite subjects covered in the curriculum which deals with the basic communication elements and methods, so that they will be able to solve problems pertaining to the various protocols. So, in the lesson plan of CN additional lectures are taken to introduce the concepts of bandwidth-delay, multiplexing, and encoding, etc.			
PO 2 : Problem Analysis			
PO2	2.7	2.68	Target level has not been achieved. And the following observations were made: • The problem solving and analyzing skills, though gained through various courses, must be improved. • Research exposure to the students is ess
Action 1: Idea competition held for the students of all semesters to showcase the innovative elements in their project. Algoholic 1.0 is an event conducted to promote out-of- the-box thinking and problem-solving skills of the students. Action 2: SEMI code event is the coding competition that was carried out over several rounds where students try and crack simple coding problems based on data structures and similar topics. Students acquired knowledge about how to find the best solution for the given problem statement by applying the programming and technical skills within the given time window. Action 3: Students are required to do a thorough literature study of the recent researches and publications as a requirement for the Project approval. They are encouraged to publish papers of their project accomplishments.			
PO 3 : **Design/development of Solutions**			
PO 3	2.7	2.76	Target level has been achieved. Many of the projects developed by the student as course projects, Mini projects/ major projects (final year) are considering the social and environmental issues.
Action 1: Conducted Webinars on various topics like "Design Thinking, Critical thinking and innovation Design", "Design Thinking for Web Based Projects" and on "Developing A Corona Virus Tracker Software" for the students to understand the system design components and constraints. Action 2: A workshop on Chatbot Designing was held for the students to learn and implement simulation Software and use open source tools. 'Design thinking for web-based projects' is another event conducted for Project design. Action 3: The various design options and comparative studies are presented for project evaluations and published as research papers also.			

PO 4 : Conduct Investigations of Complex Problems			
PO4	2.7	2.8	Target level has been achieved. However, following observations were made: • Less number of students have taken up research-based projects. Only few projects turned up into research publications. Steps should be taken to inculcate research skills. • Students must analyse and synthesize the data, produce results and derive specific conclusions for complex problems.
Action 1: Students are required to do a thorough literature study of the recent researches and publications as a requirement for the Project approval. They are encouraged to publish papers of their project accomplishments. Action 2: Seminar for final year students on 'Writing Research Paper and Patent application' was organized to promote research publication. Action 3: In the preliminary coding subjects of Java and OSL (Python Programming) as well as in Data Structures and algorithms the students are continually encouraged to write good code which is efficient and robust. Action 4: In the technical events of Synergy and Unscript hackathons, the evaluation criteria include Feasibility, Practicability, Sustainability of the code written by the students.			
PO 5 : **Modern Tool Usage**			
PO5	2.7	2.7	Target level has been achieved. It is observed that knowledge and advanced tool and resources usage are necessary to meet the industry standards and research.
Action 1: Continued association with professional bodies like CSI and Google Developers Student Club (GDSC). CSI and ACM arranged expert talks to create more awareness among the students about professional engineering practice. (For example: Get Started with Deep Learning organised by ACM where Students acquired knowledge about the best platform and prerequisite to get started for ML and Deep Learning and hardware requirement for deploying applications). Action 2: Workshop on Game Development using Java and Unreal Engine where Game Development using Java Programming Language and different packages such as Swing, AWT, Applets, etc. were demonstrated. Action 3: WAMP server downloads and usage was a part of Web Development Design thinking seminar. Moreover, Workshops on Linux Security and Hacking by Mozilla club and Expert talk on Tools like Wireshark, packet analyzer etc. were also conducted. Action 4: Students have taken advanced online courses on the topics like AWS, Blockchain, Sm,art Contracts R programming, Google Data Analytics, Google Machine Learning, .Ethereum & Solidity: The complete developers guide etc. and got certified.			
PO 6 : The Engineer and Society			
PO6	2.7	2.88	Target level has been achieved. However, following observation were made: • Syllabus does not include any course which addresses concerns related with professional engineering practices used to evaluate societal, health, safety, legal, and cultural issues • The students are found to be less aware about the basic health and safety issues with an engineering point of view.

Action 1: Conducted a Webinar on Legal & Ethical Steps to be followed for start-ups. Action 2: To understand the safety concerns and social aspects, industry-visit is planned to expand their practical knowledge with the effect of improved practices in engineering. Action 3: Women Healthcare Awareness programs organized for the overall development of women health. For example: Dr. Pallavi Raut gave a brief introduction 'Polycystic Ovarian Syndrome' a disease that can occur in female reproductive system; its cause, symptoms and how to take proper precautions. Action 4: Plagiarism checks are made mandatory and conducted for Final Year project documentations.			
PO 7 : **Environment and Sustainability**			
PO 7	2.7	2.9	Target level has been achieved. However, following observation were made: • None of the course addresses understanding the impact of professional engineering solutions on society and the environment, as well as the need for sustainable development.
Action 1: Students are encouraged to take up mini projects/projects where societal and environmental issues can be addressed. The environment related projects like MedoNation, Stray animal rescue, Illegal Land acquisition using image processing are done by students. Action 2: National Pollution Control Day is observed under NSS. Other activities like beach clean-up, Blood donation camp instill the sense of social commitment in students.			
PO 8: Ethics			
PO8	2.7	2.57	Target level is not achieved. The curriculum does not cover ethics and accountabilities for engineering practices.
Action 1: Projects and mini projects are scrutinized, code reviews are conducted, plagiarism checks are done to determine the originality of the project to ensure professional ethics. Turnitin reports are mandatory to be attached with their project reports and synopsis. Action 2: Staff members participated in UHV-FDP which prepared the educators to teach the students with holistic value-based education and promoting national development.			
PO 9 : **Individual and Team Work**			
PO9	2.7	2.56	Target level is not achieved. Students are required to inculcate leadership quality, and to improve interpersonal skills to work as a team.
Action 1: Workshop on "Entrepreneurship and Innovation as Career Opportunity" (2021-22) Action 2: To promote team work, projects are evaluated on the basis of individual contribution as well as team coordination. Action 3: Students are encouraged to be the part of various technical and non-technical teams/councils.			
PO 10: Communication			
PO 10	2.7	2.64	Target level is not achieved Students from vernacular medium find it hard to communicate effectively and are timid to express the ideas.

Action 1: Emphasis is given for individual communication and participation in all presentations of their project work. Student seminars are conducted in many subjects as a part of teaching/learning process. Action 2: To enhance the employability skills of the students, training programs conducted on the topics: how to face the interview, GD, career development, higher studies, entrepreneurship development. Action 3: In the event 'Business Model Canvas', students have presented Design models and Business ans for their project ideas and these project ideas have been presented in front of marketing professionals by teams. Action 4: Fr. Conceicao Rodrigues Memorial Debate (CRMD) is a platform where students can improve their communication and interpersonal skills. Students organize, participate and debates on a national relevant topic from multiple perspectives.			
PO 11: Project Management and Finance			
PO11	2.7	2.56	Target level has not been achieved. The Programme includes minimal multidisciplinary approach and no course related to financial management.
Action 1: Students are taught oriented to prepare project proposals, analysis and design documentations as well as timeline projections, with the guidance of faculty for Project work and IRG. Students are asked to maintain logbook to showcase timeline required for smooth functioning of project execution. Action 2: A Workshop on Project Management -A step towards Innovative Product was conducted as part of IIC events.			
PO 12: Life-long Learning			
PO 12	2.7	2.62	Target level has not been achieved. • Internship which promotes life-long learning is not emphasized in the curriculum. Students must be motivated to explore, learn and grow. • Students to be encouraged to improve their own quality of life and sense of self-worth by paying attention to the ideas and goals that inspires thern.
Action 1: Students are encouraged to take up online courses on new technologies which would help them in continuous learning. Students were asked to register for online courses (Swayam, NPTEL, MOOCs) launched by AICTE. Action 2: Students are encouraged to publish research papers in various national and international journals/conferences. Action 3: An E-Symposium on 'Building Innovation Ecosystem in Educational Institutions'- Day 1 (11th Jan 2022) was held to improve innovative thinking. IIC-FrCRCE cell is established as per the guidelines issued by MoE Innovation Cell at the institute. In order to support pre-incubation; IPR cell, Startup cell, E-cell and Student clubs have been set up for facilitating and mobilizing resources from different sources. Action 4: My Story - Motivational Session by Successful Entrepreneurs/Start-up founders, is conducted frequently in the campus to encourage students to think in the direction of becoming an entrepreneur. The NISP team in the campus is formulated to achieve this agenda.			

PSOs Attainment Levels and Actions for Improvement- (2021-22)

PSOs	Target Level	Attainment Level	Observations
PSO 1 : Apply fundamental computer science knowledge to solve real world problems.			
PSO1	2.7	2.42	Target level is not achieved. Students are required to adapt computer engineering fundamentals in depth and apply the same to achieve real-world challenges.
Action **1:** Workshops and technical activities were included for students to acquire the knowledge of real-world design issues. Some examples are El REST API- Technical Webinar for understanding the microservice architectures, as compared to monolithic architectures. Action 2: During the Event 'Proof of Concept' students have presented innovative ideas that formulated problems and designs for solutions with help of all theoretical and literature knowledge. Also identified basic tools required to implement solutions.			
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			
PSO2	2.7	2.41	Target level is not achieved. The Programme includes minimal multidisciplinary approach and hence to design a complex system with multidisciplinary aspects, students are required to acquire core programming and interdisciplinary technical skills.
Action **1:** Workshops and technical activities were included as co-curricular activities to enhance the capability of students to relate it to the classroom lectures. For e.g., Training on Arduino programming Action 2: 'Design Thinking For Web Based Projects' was designed to introduce students to design thinking for web based projects (using CSS and bootstrap). Action 3: 'SEMI code' event is the coding competition that was meant for Students to acquire knowledge about how to find the best solution for the given problem statement by applying the programming and technical skills within the given time window. Action 4: On 'Demo Day' organized by E-cell, students present a working prototype model for technical projects. These projects are implemented by a team of students by using various core technologies, modern tools. These prototypes are presented in front of a panel of entrepreneurs.			

7.2 Academic Audit and actions taken thereof during the period of Assessment (10)

Total Marks 9.00
Institute Marks 9.00

Academic audit is planned at the end of academic year. An expert from academia is invited to conduct academic audit. Auditor verifies and discusses the teaching plan, its execution and outcome evaluation.

Process for Academic Audit:

- IQAC prepares academic audit form considering following parameters:
- Teaching Plan
- Content quality and depth
- Delivery mechanism

- Content beyond syllabus
- Quality of lab manuals, newly added experiments
- Evaluation methods, Assessment rubrics and assessment analysis
- CO-PO mapping
- Knowledge of tools used
- Identification of weak and bright students
- Help rendered to student
- Collaboration with colleagues
- Projects guided
- Head of the department appoints external auditor.
- HOD circulates external audit form among faculty members
- HOD announces dates of the external audit.
- Faculty member presents their course files to external auditor.
- External auditor assesses the course files and assigns marks as per audit form, puts appropriate remarks.
- External auditor gives suggestion to concerned faculty member.
- Based on the feedback from external auditor, faculty member takes remedial actions if necessary.

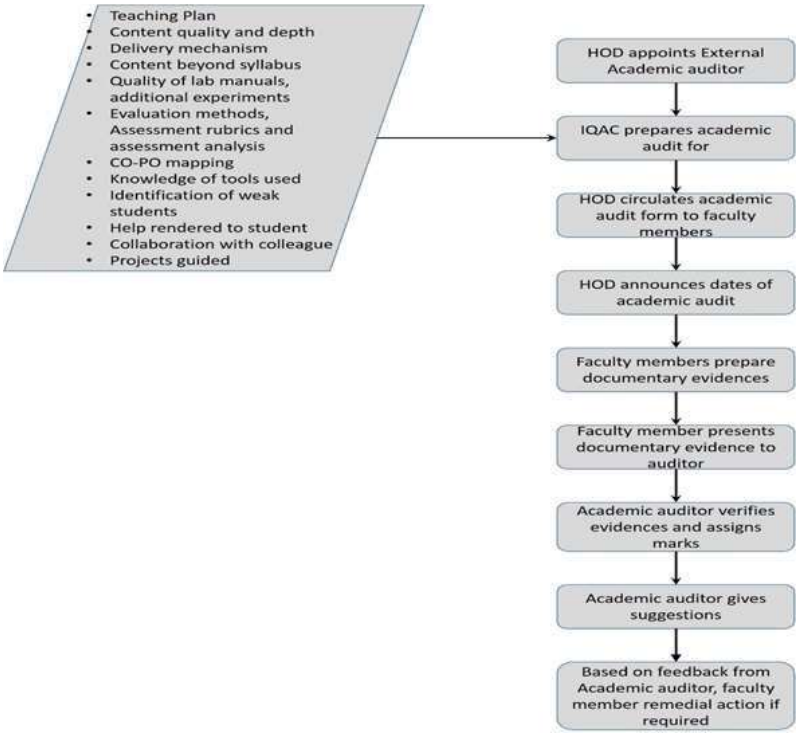


Fig: Academic Audit Process

Observations/suggestions reported by the External Auditor (CAY 2021 - 22):

1. Provide additional resources to the students
2. Need improvement in the content beyond syllabus
3. CO-PO mapping justification needs refinement
4. Incorporate more innovative teaching-learning methods
5. Invite industry expert for mini-project evaluation

6. Include End Semester Exam paper solution in course file
7. Include innovative experiments

Observations /suggestions reported by an External Auditor (CAY 2020 - 21):

1. In some of the cases the target level needs to be revised at program level, if they are attained.
2. The question paper quality for term test is good. Some of the faculty members are doing exceptionally well.
3. Paper publication should be increased in quality journals/conferences.
4. Faculty members are aware of the processes and what they need to do.
5. In few cases, asked to revise CO-PO mapping.

Observations /suggestions reported by an External Auditor (CAY 2019 - 20):

1. Help rendered to students with respect to career/skill development /mentoring need to be improved.
2. Need to share additional online **TL** resources with students w.r.t subjects taught
3. Moodie platform can be adopted for the conduct of Tests and examinations.
4. More Guest Lectures can be conducted.
5. Track of weaker students & their progress is missing.
6. CO-PO mapping is to be assessed by PAC.
7. Some of the faculty members need to adapt process to identify weak students.
8. Attainment analysis needs to be improved.

Following actions are taken in the current academic year:

IQAC has formulated processes to improve the learning experience of the students which includes the following:

- Identification of innovative and appropriate teaching method/tool for each topic in the syllabus must be implemented and documented accordingly.
- Interact and take regular feedback from the students to judge the impact of the various tools
- Process has been formulated to identify the weak and strong students based on various assessment parameters.
- Research policies has been revised and is being followed from the current academic year.

Department Quality Assurance Committee (DQAC) review Process:

- Department Quality Assurance Committee (DQAC) reviews COs and mappings and give feedback to the concerned faculty member.
- New exam reform policy has been followed from current academic year with PO relevant competency and their appropriate performance indicators (Pl).
- The quality, mapping and difficulty level of the question papers is verified by the DQAC members.
- DQAC analyzes PO and CO attainment levels to identify program level curriculum gap or course level gap.
- DQAC suggested remedial measures to bridge program level gaps

Faculty Members follows some processes for maintaining continuous improvement in the quality.

- Google classroom was used to upload the learning resources and conduct online evaluation of tests and assignments
- Golab platform was used to write and execute python code through the browser during online practical sessions
- Target Levels have been revised from the current academic year (2022-23).

- Guest lectures are conducted for content beyond syllabus to provide a wide aspect of course subject from the application point of view.
- Faculty paper publications have been increased with quality. More papers are published in Scopus indexed journals, IEEE Explore and UGC care journals.

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

Total Marks 10.00
Institute Marks 10.00

Many multinational and well-known Indian companies regularly visit our campus for their requirements. Morgan Stanley, JP Morgan, IBM, Capgemini, ATOS, Amazon, Quantiphi, Jio Digital, Infosys, Amdocs are to name few. Also core industries like Tech Mahindra, L & T, Godrej, Selec Control, Johnson control are recruiting our students. Most of the eligible students get placement through campus recruitment drive. About 20% students opt for higher education immediately after graduation while almost 80% students pursue for higher studies after one- or two-years of industrial experience. Students get admitted to reputed universities like the University of Texas, Georgia Tech, Arizona State University, Clemson University, Boston University, Northern Illinois, SUNY Buffalo etc.

The statistics for past three years is as follows:

Academic year 2021 - 22:

- Total number of Final Year Students: 72
- Number of students placed in companies or government sector . 49
- 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.): 18
- Number of students turned entrepreneur/technology: 1

Academic year 2020 - 21:

- 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

Academic year 2019 - 20:

- Total number of Final Year Students: 78
- Number of students placed in companies or government sector: 47
- Dual or more placements: 62
- Minimum Salary: 3.00 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.): 18 Placement Statistics:
-

	2022 -23	2021 -22	2020 - 21	2019 -20
Total No. of Students.	142	72	77	78
No. of Eligible students	141	70	77	47
No. of Eligible and registered students	105	49	60	47
No. of Students placed	95	48	60	41
No. of Students Opting for Higher studies	29	18	15	18
No. of students opting for other career options	7	4	2	0

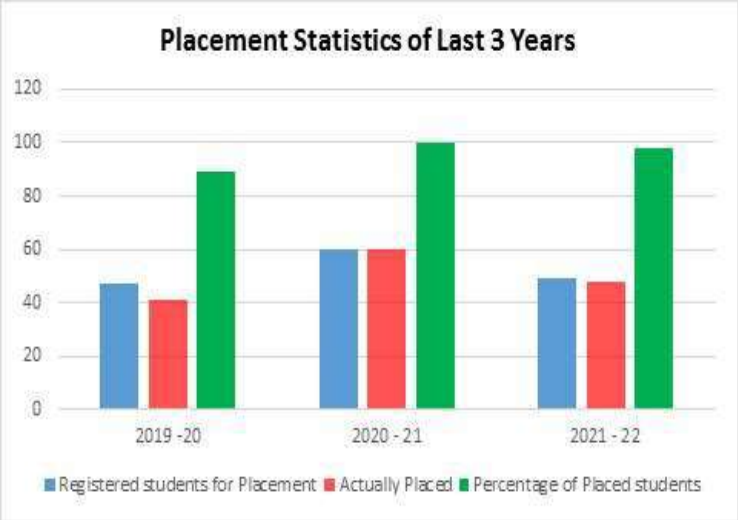


Fig: Placement Statistics of Last 3 Years

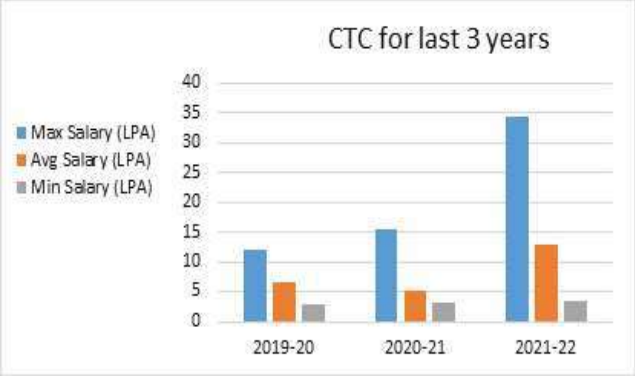


Fig - Placement statistics showing last 3 years in terms of CTC (in lakhs)

List of Entrepreneurs:

Ritika Rumde	Co-founder	Game developers association	2024
Bariq Wani	Founder & CEO	Foodhung	2023
Vedant Sahai	CTO, Co-Founder	DataCertus	2021
Shantanu Iyengar	CEO/Founder	Siti Solutions	2019
Shantanu Iyengar	Co-Founder/Technical Lead	Rent Pe	2019
Manpreet Krishan	Founder/Tech Head	Solo Tech	2018
Abhishek Kateliya	Co-founder	StockUp	2018
Abhishek Kateliya	Founder	Third Block Community	2018
Sumeet Darade	Entrepreneur, CTO	The Contrast India	2015
Gaurav Sen	Founder & Managing Partner	InterviewReady	2014
Darpan Negandhi	Entrepreneur, Founder	BehindBars	2011
Tanmay Shah	Co-Founder	Sphinx Systems	2011
Prashant Borana	Co-Founder & Partner	Invizio Solutions LLP	2009
Mihir karkare	Co founder and Evp	Mirum India	2007
Lester Fernandes	Founder & Managing Director	Cloud native Startup	1998
Vipul Rajdev	Founder & Managing Partner	SatvaSys Solutions	1996
Parag Gadhia	Founder, Director	LEGO SERIOUS PLAY Facilitator	1996
Parag Gadhia	Personal Leadership & Accountability Coach	DEEP ABILITY CONSULTING	1996

7.6 Improvement in the quality of students admitted to the program(10) Total Marks 9.00

Institute Marks : 9.00

Item		2022-23	2021-22	2020-21
National Level Entrance Examination	No of students admitted	5	3	7
	Opening Score/Rank	95	88	95
JEE Main	Closing Score/Rank	85	83	69
State/ University/ Level Entrance Examination/ Others	No of students admitted	123	127	122
	Opening Score/Rank	99	98	98
MH CET	Closing Score/Rank	90	81	76
Name of the Entrance Examination for Lateral Entry or lateral entry details	No of students admitted	12	12	13
	Opening Score/Rank	92	97	94
DSE	Closing Score/Rank	84	95	84
Average CBSE/Any other board result of admitted students (Physics, Chemistry & Maths)		261	268	229

8 FIRST YEAR ACADEMICS (50) Total Marks 46.18

8.1 First Year Student-Faculty Ratio (FYSFR) (5) Total Marks (4)

Please provide First year faculty information considering load for the particular program

Name of the faculty member	PAN No.	Qualification	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining	Teaching load (%)			Currently Associated (Yes / No)	Nature Of Association (Regular / Contract)	Date Of leaving(In case Currently Associate is 'No')
							CAY	CAYm1	CAYm2			
Mr. Dileep Cha	AEYPN2392G	M.Sc	22/04/1996	Electronics	Assistant Professor	22/12/1997	100	100	100	Yes	Regular	
Dr. Hemant Ma	AJGPK4849J	M,Sc, and PhD	27/12/2001	Chemistry	Assistant Professor	21/12/2000	100	100	100	Yes	Regular	
Dr. Sunil Shripa	ABZPY1509L	M,Sc, and PhD	10/02/2012	Organic Chemistry	Assistant Professor	01/04/2013	100	100	100	Yes	Regular	
Mr. Prasad Nar	ACCPL8232B	M.Sc	06/11/2006	Mathematics	Assistant Professor	01/07/2004	64	25	25	Yes	Regular	
Mr. Pradeep Vi	BOOPS9671C	M.Sc	15/05/2004	Mathematics	Assistant Professor	17/07/2006	0	75	75	Yes	Regular	
Miss Aastha Bh	DKWPB1442J	MA	14/07/2015	English	Assistant Professor	12/09/2022	50	0	0	Yes	Regular	
Anant Namdeo	ACFPT6518F	M.E/M.Tech	01/11/2008	ME Production	Assistant Professor	16/01/2012	0	81	100	Yes	Regular	
Mrs, Archana F	ACSPL4613L	M,E/M,Tech	30/09/2009	Electronics	Assistant Professor	07/08/2009	0	28	0	Yes	Regular	
Dr. Bhushan Tr	AGSPP9212H	ME/M. Tech and PhD	06/03/2014	Production	Professor	01/04/2014	100	75	71	Yes	Regular	
Mrs. Dipali Yog	AZDPS1967L	M.E/M.Tech	10/12/2010	Computer Engineering	Assistant Professor	05/07/2005	0	0	53	Yes	Regular	
Mrs, Gauree U	AMAPJ9254B	M,Sc	30/04/2013	Pure Mathematics	Assistant Professor	10/10/2022	50	0	0	Yes	Regular	
Mrs, Monali Nit	BCRPS5046Q	M,E/M,Tech	04/08/2012	Network Security	Assistant Professor	20/02/2006	0	0	53	Yes	Regular	
Dr. Sunil Kuma	AHTPD5110G	ME/M. Tech and PhD	02/09/2020	Six Sigma Operational Quality Performance	Associate Professor	27/07/1999	33	0	0	Yes	Regular	
Mrs. Sangeeta	BBMPS8352R	M.E/M.Tech	15/06/2015	Electronics	Assistant Professor	09/07/2007	0	71	38	Yes	Regular	
Mr. Saurabh At	BKGPK5917B	M.E/M.Tech	01/06/2013	CAD CAM with Specialisation	Assistant Professor	02/07/2012	0	62	44	Yes	Regular	
Mrs. Shilpa Jite	AANPP6418J	M.E/M.Tech	31/03/1996	Power System	Assistant Professor	16/01/1996	67	28	38	Yes	Regular	
Mrs. Supriya S	AROPK1602K	M.E/M.Tech	31/12/2012	Computer	Assistant Professor	05/07/2005	0	0	53	Yes	Regular	
Dr. Vedavyasra	ADKPJ8809M	ME/M. Tech and PhD	17/07/2017	Job Shop scheduling problems	Associate Professor	01/08/1995	43	0	0	Yes	Regular	
Dr. Vasim Abdu	FTCPS3412L	ME/M. Tech and PhD	17/08/2013	Materials Science and Engineering	Associate Professor	01/10/2015	40	0	0	Yes	Regular	
Dr. Surendrasir	AGUPR6242D	ME/M. Tech and PhD	12/11/2011	VLSI Design	Professor	01/07/2022	100	0	0	Yes	Regular	
Mrs. Archana F	ADFPJ8586J	M.Sc	02/12/1998	Mathematics	Assistant Professor	01/08/2003	0	75	75	No	Regular	04/07/2022
Mr. Hitendra B	AGUPV6868M	M.E/M.Tech	15/07/2013	Robotics	Assistant Professor	13/07/2015	0	43	50	No	Regular	06/06/2022
Dr. Vijay Santu	AEZPB8642J	ME/M. Tech and PhD	14/06/2014	Operation Management	Professor	14/08/1995	0	38	79	No	Regular	17/11/2022

Ms. Dipali Kisa	ARPPB4156J	M.E/M.Tech	07/07/2015	CAD CAM	Assistant Professor	02/01/2015	0	50	44	Yes	Regular	
Mr. Sudhakar S	AHEPD3979L	M.E/M.Tech	08/08/2003	Design in Mechanical Engineering	Associate Professor	01/09/1994	75	69	85	Yes	Regular	
Mr. Narayanan	AAMPK1958M	M.E/M.Tech	14/12/1997	Electrical Engineering	Associate Professor	27/08/1987	60	14	0	Yes	Regular	
Mr. Sunil Dilip (	AKWPC0981C	M.E/M.Tech	15/09/2010	Wireless Communication	Assistant Professor	20/07/2009	0	30	0	No	Regular	26/05/2022
Mr. Akshay Pra	FXCPS9098Q	M.E/M.Tech	06/10/2021	Energy Engg	Assistant Professor	16/07/2022	69	0	0	Yes	Regular	
Mrs. Prajakta M	ASOPD7928C	M.E/M.Tech	17/07/2013	Information Technology	Assistant Professor	09/07/2012	0	28	0	Yes	Regular	
Mr. Veerabhadı	AJEPM3761H	M.E/M.Tech	15/07/2011	Manufacturing Engg	Assistant Professor	02/01/2013	33	42	44	Yes	Regular	
Dr. Joseph Roc	AGOPR5840D	MA	09/03/2013	English Communication skills	Assistant Professor	02/05/2016	50	50	50	Yes	Regular	
Ms. Deepika Si	BRSPS7329L	M.E/M.Tech	31/12/2011	Design Engineering	Assistant Professor	01/04/2014	44	13	71	Yes	Regular	
Mrs. Parshvi Z	BUNPS5891K	M.E/M.Tech	24/01/2015	Electronic Engineering	Assistant Professor	18/09/2006	0	50	100	Yes	Regular	
Mr. Anant Nam	ACFPT6518F	M.E/M.Tech	01/11/2008	Production	Assistant Professor	16/01/2012	0	81	60	Yes	Regular	
Mrs. Binsy Jos	AIOPJ4444P	M.E/M.Tech	08/09/2005	Power Electronics	Assistant Professor	27/02/2006	56	34	83	Yes	Regular	
Ms. Prachi Kun	AIKPC6786H	M.E/M.Tech	31/05/2012	Computer	Assistant Professor	10/07/2006	0	0	53	Yes	Regular	
Mr. Jayen Suni	AOIPM6979E	M.E/M.Tech	28/02/2005	Electronics Instrumentation	Assistant Professor	01/04/2014	0	22	0	Yes	Regular	
Dr. Dipak Anan	BGZPB7080B	M.Sc. and PhD	07/01/2016	Material Science	Assistant Professor	01/08/2018	100	100	100	Yes	Regular	
Ms. Prahelika F	FIQPP3025M	MA	30/05/2018	English	Assistant Professor	01/07/2021	0	50	0	No	Contractual	30/06/2022

Year	Number of Students (approved intake strength) N	Number of Faculty members (considering fractional load) F	FYSFR (N/F)	*Assessment= (5*20)/FYSFR (Limited to Max.5)
2020-21(CAYm2)	300	13.36	22.45	4.45
2021-22(CAYm1)	300	13.02	23.03	4.34
2022-23(CAY)	300	14.74	20.35	4.91
Average	300	13.7	21.94	4.57

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

Total Marks 3.00

Institute Marks: 3.00

Year	x (Number of Regular Faculty with Ph.D)	y (Number of Regular Faculty with Post graduate Qualification)	RF (Number of Faculty Members required as per SFR of 20:1	Assessment of Faculty Qualification [(5x + 3y) / RF]
2020-21 (CAYm2)	6	17	15	5.4
2021-22 (CAYm1)	7	23	15	6.93
2022-23 (CAY)	10	18	15	6.93

Average Assessment: 6.42

8.3 First Year Academic Performance (10) Total Marks 9.18

Institute Marks: 9.18

Academic Performance	2021-22	2020-21	2019-20
Mean of CGPA or mean percentage of all successful students(X)	9.14	9.71	8.83
Total Number of successful students(Y)	114.00	129.00	129.00
Total Number of students appeared in the examination(Z)	130.00	129.00	129.00
API [X*(Y/Z)]	8.02	9.71	8.83

Average API[(AP1+AP2+AP3)/3] : 8.853

Assessment [1.5 • Average API] : 13.28

8.4 Attainment of Course Outcomes of first year courses (10) Total Marks: 10.00

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: 5.00

The process to Measure CO attainment

- Faculty member identifies tools required to measure CO attainment for each CO.
- Faculty member assigns weightage for each tool.
- Faculty member formulates equation to calculate attainment.

- Faculty member sets target level for CO attainment.
- DQAC verifies the method/tools/target value of CO attainment calculation and suggests tools, target values, etc. if required.
- Based on feedback from DQAC, faculty member makes appropriate changes.
- Faculty member collects the data throughout the semester as per the tools selected for measuring CO attainment.
- Faculty member organizes data.
- Faculty member calculates CO and PO attainments for said course.
- Faculty member analyzes CO attainment to identify remedial actions if necessary.
- DQAC verifies attainment and suggests remedial action.
- Faculty member implements remedial measures the following year to improve CO attainment or set new target value.

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 topics assigned to them. Assessment of the presentation is done in accordance with the rubrics provided.

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

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

8.4.2 Record the attainment of Course Outcomes of all first year courses (5)

Institute Marks : 5.00

Target Range		
>=80%	High	3
70-80 %	**Medium**	2
60 - 70 %	**Low**	1
<60%	Not Attended (N.A.*)	
*** Action Plan required**		

CO Attainment: First Year Engineering, Semester I, 2021-22

Course	CO	Attainment
FEC 101: Engineering Mathematics I	FEC101.1	3
	FEC101.2	3

	FECl01.3	3
	FEC101.4	3
FEC 102: Engineering Physics I	FEC102.l	3
	FEC102.2	3
	FEC102.3	3
	FEC102.4	3
	FEC102.5	3
FEC103: Engineering Chemistry I	FEC103.1	2.4
	FEC103.2	2
	FEC103.3	2
	FEC103.4	2.16
	FEC103.5	2.56
FEC104: Engineering Mechanics	FEC104.l	2.95
	FEC104.2	3
	FEC104.3	2.92
	FEC104.4	3
	FEC104.5	3
	FEC104.6	2.91
FEC105: Basic Electrical and Electronics Engineering	FEC105.1	3
	FEC105.2	3
	FEC105.3	3
	FEC105.4	2.8
	FEC105.5	3
FEL105: Basic Workshop Practice I	FEL105.1	2.9
	FEL105.2	2.9
	FEL105.3	2.9
	FEL105.4	2.9
	FEL105.5	2.9
	FEL105.6	2.9
	FEL105.7	2.9
	FEL105.8	2.9
	FEL105.9	2.9
	FEL105.10	2.9

CO Attainment: First Year Engineering, Semester 2, 2021-22

Course	CO	Attainment
FEC201: Engineering Mathematics II	FEC201.1	2.52
	FEC201.2	2.6
	FEC201.3	3
	FEC201.4	3
FEC202: Engineering Physics II	FEC202.1	3
	FEC202.2	3
	FEC202.3	3
	FEC202.4	3
	FEC202.5	3
	FEC202.6	3
FEC203: Engineering Chemistry II	FEC203.1	2.5
	FEC203.2	2.8
	FEC203.3	2.85
	FEC203.4	2.1
	FEC203.5	2.3
FEC204: Engineering Graphics	FEC204.I	2.15
	FEC204.2	2.15
	FEC204.3	2.07
	FEC204.4	2.15
	FEC204.5	2.15
	FEC204.6	2.13
FEC205: C - Programming	FEC205.1	3
	FEC205.2	2.76
	FEC205.3	2.76
	FEC205.4	3
	FEC205.5	3
FEC206: Professional Communication and Ethics I	FEC206.1	3
	FEC206.2	3
	FEC206.3	3
	FEC206.4	3
	FEC206.5	3
FEL206: Basic Workshop Practice II	FEL206. 1	2.9
	FEL206.2	2.9
	FEL206.3	2.9

	FEL206.4	2.9
	FEL206.5	2.9
	FEL206.6	2.9
	FEL206.7	2.9
	FEL206.8	2.9
	FEL206.9	2.9
	FEL206.10	2.9

8.5 Attainment of Program Outcomes from first year courses (20) Total Marks 20.00

8.5.1 Indicate results of evaluation of each relevant PO and/ or PSO, if applicable (15)

Institute Marks: 15.00

POs Attainment:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEC101	3	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEC102	3	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEC103	2.39	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEC104	2.97	2.96	2.95	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEC105	2.96	3	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEL105	2.9	PO2	2.9	PO4	2.9	2.9	PO7	PO8	2.9	PO10	PO11	PO12
FEC201	2.78	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEC202	3	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEC203	2.39	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FEC204	2.13	2.13	2.13	PO4	PO5	PO6	PO7	PO8	PO9	2.13	PO11	PO12
FEC205	2.9	2.88	2.88	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2.9
FEC206	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	3	PO11	PO12
FEL206	2.9	PO2	2.9	PO4	2.9	2.9	PO7	PO8	2.9	PO10	PO11	PO12

PO Attainment Level

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Direct Attainment	2.78	2.74	2.75	0	2.9	2.9	0	0	2.9	2.57	0	2.9
CO Attainment	2.78	2.74	2.75	0	2.9	2.9	0	0	2.9	2.57	0	2.9

PSOs Attainment:

Course	PSO1	PSO2
	PSO1	PSO2

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

Institute Marks : 5.00

POs Attainment Levels and Actions for Improvement- (2021-22)

POs	Target Level	Attainment Level	Observations
PO 1 : Engineering Knowledge			
PO 1	3	2.78	Attainment is moderate due to lower performance in Engineering Chemistry I (FEC103), Engineering Chemistry II (FEC203), and Engineering Graphics

			(FEC204)
Tutorial sessions need to be conducted in Engineering Chemistry I and II (FEC103 and FEC203). More drawing practice sessions must be conducted for Engineering Graphics (FEC204).			

PO 2 : **Problem Analysis**

PO 2	3	2.74	Attainment is moderate due to lower performance in Engineering Graphics (FEC204).
More drawing practice sessions must be conducted for Engineering Graphics (FEC204).			

PO 3 : **Design/development of Solutions**

PO 3	3	2.75	Attainment is moderate due to lower performance in Engineering Graphics (FEC204).
More drawing practice sessions must be conducted for Engineering Graphics (FEC204).			

PO 4 : Conduct Investigations of Complex Problems

P04	3	0	Not applicable.
Not applicable			

PO 5 : Modern Tool Usage

PO 5	3	2.9	Attainment is satisfactory.
Not applicable			

PO 6 : The Engineer and Society

PO 6	3	2.9	Attainment is satisfactory.
Not applicable			

PO 7 : **Environment and Sustainability**

PO 7	3	0	Not applicable.
Not applicable			

PO 8: Ethics

PO 8	3	0	Not applicable.
Not applicable			

PO 9 : Individual and Team Work

PO 9	3	2.9	Attainment is satisfactory.
Not applicable			

PO 10: Communication

P010	3	2.57	Attainment is moderate due to lower performance in Engineering Graphics (FEC204)
More drawing practice sessions must be conducted for Engineering Graphics (FEC204).			

PO 11 : Project Management and Finance

PO 11	3	0	Not applicable.
Not applicable			

PO 12 : Life-long Learning

PO 12	3	2.9	Attainment is satisfactory.
Not applicable			

PSOs Attainment Levels and Actions for Improvement- (2021-22)

PSOs	Target Level	Attainment Level	Observations

PSO 1 : Apply fundamental computer science knowledge to solve real world problems.

PSO1	3	0	Not applicable.
Not applicable			

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

PSO2	3	0	Not applicable.
Not applicable			

9 STUDENT SUPPORT SYSTEMS (50) Total Marks 44.00

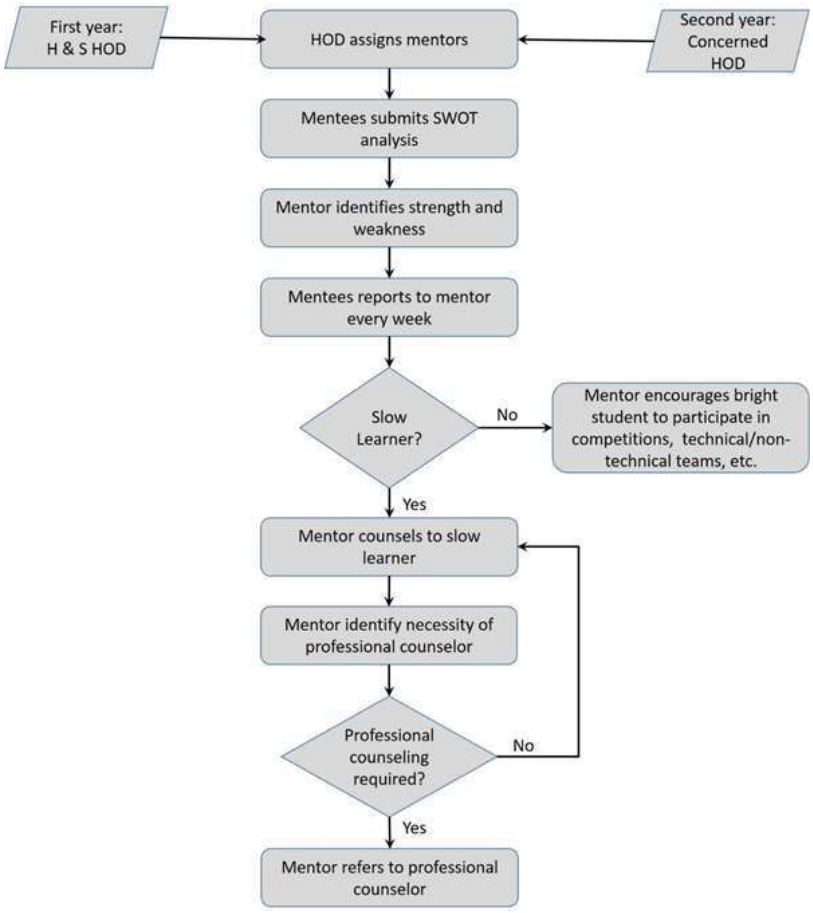
9.1 Mentoring system to help at individual level (5)

Total Marks 4.00
Institute Marks: 4.00

The teacher mentors guide the students (mentees) to make correct career choices. The mentoring process starts in the first year with 20 students allotted to one mentor teacher who guides them throughout the year.

Mentoring process

- At entry, the head of the department of Humanities and Science assigns mentors to mentees (Approximately 20 students are assigned to one mentor).
- During the third semester, the concerned HOD assigns mentors to mentees (Approximately 6 students are assigned to one mentor). The mentor continues mentoring till the students successfully graduate.
- If any faculty member resigns/retires, HOD reassigns mentors to respective students.
- Mentees report to mentors once a week.
- Mentees submit SWOT analysis to mentors.
- Mentor identifies the weakness and strengths of the student and accordingly guides the student.
- Mentor counsels the slow learner to enhance performance. If a mentor finds the need for professional counseling, then he directs the student to a professional counselor.
- Mentor encourages fast learners to participate in various competitions and technical/non-technical councils/teams.
- Mentor continuously monitors the performance of the mentee and takes remedial measures if necessary.



Type of mentoring: All-round development Career advancement

Number of faculty mentors: 03 per class

Number of students per mentor: 20

Frequency of meeting: Once a week

Every year the college conducts an Induction Programme for first-year students which serves as a series of reliable experiences for the holistic development of students such as; Universal Human Values, Creativity and Innovation, and Career Guidance, to mention a few. The aforesaid sessions were conducted by eminent personalities from the relevant fields.

The alumni committee of the college has organized various events such as career guidance sessions, Spotlight Series, and Webinars which help to nurture the students of CRCE (Alumni I CRCE (frcrce.ac.in) (https://alumni.frcrce.ac.in/)).

9.2 Feedback analysis and reward /corrective measures taken, if any (10) Total Marks 9.00

Institute Marks : 9.00

- Feedback collected for all courses: YES;
- Feedback collection process:
- The mid-term feedback serves as a pivotal step towards enriching the teaching-

learning process. The feedback is collected by the head of the department (HOD) from a few students in each class. The feedback is then discussed with the teacher and the HOD takes corrective measures, if required.

- The students are provided with a link which enables them to give end-semester feedback for the concerned faculties.
- The feedback is further communicated to the individual teachers for necessary action to be taken. At the end of the academic year, a faculty appraisal meeting is held with the HOD and Principal to reflect upon the areas of improvement.
- Average Percentage of students who participate: 20%

Feedback analysis process:

- The parameters for grading the faculty members include Subject knowledge, Communication abilities, Punctuality, Unbiased approach, ability to hold attention etc., on a scale of 0-5.
- Self-corrective measures from faculty members are expected if the average grade is less than 3 in any of the above parameters.
- Basis of reward / corrective measures, if any: The college focuses on open door policy where both appreciation and constructive criticisms are discussed for enhanced teaching- learning.
- Feedback from Students, Alumni, Teachers and Parents are analyzed by the respective departments. The detailed analysis is available on the following link.

  https://drive.google.com/drive/folders/1TpF4HfrXex2KYKs9DjRap7Klzu0lnTki (https://drive.google.com/drive/folders/1TpF4HfrXex2KYKs9DjRap7Klzu0lnTki)

9.3 Feedback on facilities (5) Total Marks 4.00
Institute Marks: 4.00

Feedback on facilities was collected from Students.

The suggestion box placed near the office facilitated the suggestions from the students on the facilities. The Principal and HODs also collect informal feedback from their interactions with the students and alumni.

The suggestions given by the Local-Inquiry Committee of Mumbai University are implemented from time to time. The feasible suggestions given by the other stakeholders are implemented from time to time.

Sample feedbacks are shown below:

STUDENTS FEEDBACK ANALYSIS -YEAR 2021-2022

Sr. No	Topic	Excellent	Good	Satisfactory	Not Quite Satisfactory	Poor	Total
1	Curriculum covers different subject areas of your degree discipline to prepare a sound knowledge and foundation (Subjects including Basic sciences, Humanities, Discipline Core, Departmental Level Elective, Institute Level Elective, Project Work, Internships etc.	**31**	**41**	**18**	**4**	**0**	**94**
2	Planning and execution of academic calendar to prepare you for End Semester exams and internal/external assessments.	**35**	**41**	**16**	1	1	**94**
3	Course Coverage by the faculty members in the class	**33**	**48**	**12**	1	**0**	**94**
4	Usage of Interactive tool such as PPTs, MOOCs, video lectures, online tutorials. etc. to facilitate teaching-learning process	**47**	**33**	**12**	**2**	**0**	**94**
5	Opportunities for out of class room learning (Guest lectures, Seminars, workshops, value- added programs, competitions, Industrial/Field visit etc.	**27**	**24**	**28**	**11**	**4**	**94**
6	Adequacy of laboratory facilities, computer resources, laboratory manuals etc. to conduct practical experiments/ exercises as per syllabus prescribed by university	**43**	**37**	**9**	**5**	**0**	**94**
7	Facilities for aptitude classes, personal and professional grooming and preparation for placement process	**35**	**30**	**23**	**5**	1	**94**
8	Teaching and mentoring process in the institution to facilitate your cognitive and emotional growth	**32**	**36**	**21**	**4**	1	**94**
9	Academic support facilities like Library, Seminar Halls, Auditorium, Internet, Wi-Fi, Computer Center, Communication Skill Labs etc.	**36**	**34**	**19**	**3**	**2**	**94**
10	Amenities and Assistance provided at the college [Sports ground]	**7**	**9**	**25**	**2**	**9**	**94**
11	Amenities and Assistance provided at the college [College ambiance]	**20**	**35**	**20**	16	3	**94**
12	Amenities and Assistance provided at the college [Class room-Infrastructure]	**20**	**29**	**30**	9		**94**
13	Amenities and Assistance provided at the college [Washroom Cleanliness and maintenance]	**30**	**25**	**25**	25	6	**94**
14	Amenities and Assistance provided at the college [Admission procedure]	**28**	**35**	**23**	7	1	**94**
15	Amenities and Assistance provided at the college [Canteen facilities]	**12**	**21**	**28**	15	18	**94**
16	Amenities and Assistance provided at the college [Drinking water facility]	**29**	**25**	**24**	7	9	**94**
17	Amenities and Assistance provided at the college [Hostel facility]	**14**	**21**	**21**	18	20	**94**

The feedback obtained from the students was carefully studied and the following amendments are done in the infrastructure:

- Interactive boards are installed in all classrooms.

- LCD projectors are installed in the laboratories for presentations.
- WiFi is installed in the staffrooms, library, the internet center, office floor and some laboratories.
- A contract is made with a house-keeping agency for regular cleaning and maintenance of washrooms, classrooms, and corridors.

9.4 Self-Learning (5)

Total Marks 4.00
Institute Marks: 4.00

1. The institution provides infrastructure, technical guidance, and financial assistance to support activities such as an annual inter-collegiate technical festival, CRESCENDO, an annual inter- collegiate technical paper presentation and project competition, TECHNOMANIA, inter-collegiate coding competitions, HACKATHON.
2. The Institute support students to participate in various competitions such as hackathon, code competitions, debate, etc.
3. The institute also encourages students to participate in inter-disciplinary competitions through teams such as Robocon, Vayushastra, Team Abada, etc. As members of such teams, students learn technical and management skills.
4. Many technical chapters are in existence, which are responsible to organize workshops, technical events on advanced technologies.
5. The students learn management skills through the annual cultural festival EUPHORIA and Sports.
6. The library is well-equipped with reference books, and journals. A cell is dedicated to online courses such as NPTEL. The college has a tie-up with Coursera for online courses and membership with 11TB.
7. The course material made available to students through Google classrooms, MOODLE.
8. The expert talks are arranged in diverse fields.
9. The institute provides a wired internet facility on all computers in the laboratories apart from campus-wide Wi-Fi connectivity to mobile devices.

Sr. No.	Name of the event	Duration	Achievements	Link
1	BRAINWRECK-ROBOCON		First place as National Winners Awarded Best Circuit Design	https://roboconcrce.org/achievements
2	ROBOCON	2020	Secured AIR 11 in stage 1 of the competition successfully implemented Try Robot and Pass Robot Successfully done passing and receiving of rugby ball by the bots. Achieved a kicking range of 15 m with Try robot.	https://roboconcrce.org/achievements
3	Maverick UAS	2019	Sumedh Deshpande,	

	team		Karan Rao, Yashom Dighe, Christo Thomas, Yash Turkar (Maverick UAS team) received the Just joe sportsmanship award ($500.00) in 17th annual Student Unmanned Air Systems Competition held at Webster field, St Inigoes, Maryland USA, 12 -15 June 2019	https://mavericks-7734b.firebaseapp.com/#achievements
4	All India level coding Competition by ICPC Foundation	26-28 December 2019	Nehal Kalnad, Ashley Lobo and Kartick Hariharan (Final Year) selected for Final round of Prestigious all India level coding Competition by ICPC foundation, 26-28 December 2019	https://crceiic.github.io/events.html
5	TSEC 36 Hours CodeStorm Hackathon on "Blockchain & Social Courses"	20-21 September, 2019	Pranay Lobo, Pranay Bagrecha and Sahil Gupta (Third year) secured First position at TSEC 36 Hours CodeStorm Hackathon on "Blockchain & Social Courses", 20-21 September 2019, project Firestation.	https://crceiic.github.io/events.html
6	India Singapore Hackathon 2019	28-30th September	Vedant Sahai (Third Year), Team TEACH-AI in "Singapore India Hackathon 2019", 28-30 September won the prize of ($2000). Secured 5th Position out of 20 teams in India Singapore Hackathon 2019	https://crceiic.github.io/events.html
7	Hackathon, St. John Engineering College, Palghar	Jan, 2020	Pranay Lobo, Pranay Bagrecha and Sahil Gupta (Third year) won the Most Innovative Idea award at Hackathon, St. John Engineering College, Palghar in January 2020	https://crceiic.github.io/events.html
8	DMCE Navi Mumbai Hackathon,	Jan 2020	Pranay Lobo, Pranay Bagrecha and Sahil Gupta (Third year) won First prize at DMCE Navi Mumbai Hackathon, Jan 2020.	https://crceiic.github.io/events.html

9	Synergy hackathon	31st August,2019	First Place in Synergy hackathon, 31st August,2019 at FR. CRCE Bandra. Darlene Nazareth, Dishank Oza, Abhishek Kollat (Android domain) Mehek Male, Sherwin Pillai, Cassia Vaz (Web domain)	https://crceiic.github.io/events.html
10	Cyber Security Hackathon	31st Jan-1st Feb 2020	Darlene Nazareth, Elita Menezes, Sherwyn D'souza, Kevlyn Kadamala (Third year) won first prize in Cyber Security Hackathon on 31st Jan-1st Feb 2020 at SPIT, Mumbai	https://crceiic.github.io/events.html

9.5 Career Guidance, Training, Placement (10)

1. Induction Programme has been conducted since 2019 as per the norms laid down by Mumbai University and AICTE for the first-year engineering students. The sessions on universal human values, creativity, personality, development and career guidance are conducted as a part of this program.
2. For the final and pre-final year students, the Career Guidance sessions and sessions to guide students for international exams such as GRE, GMAT are conducted regularly by the respective departments in association with the training and placement cell.
3. Our alumni are invited for career guidance sessions.

Training

Soft skill development and technical skill development training are 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.

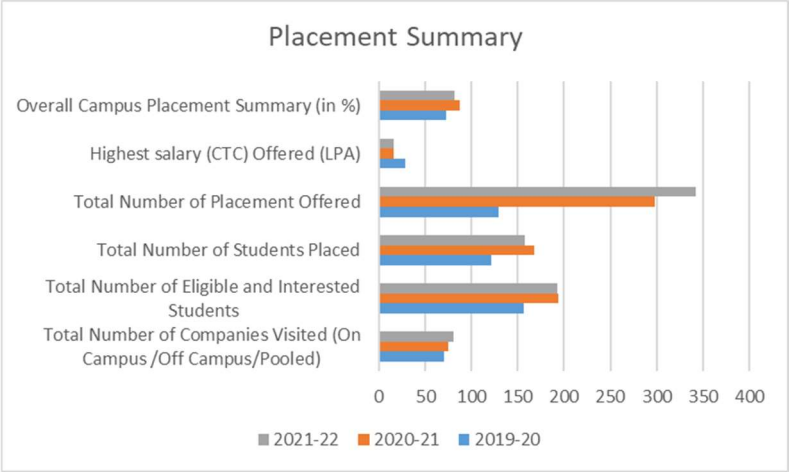
Technical Skills:- To enhance the technical skills of the students, aptitude test training and mock tests are conducted by professionals. Respective departments and technical societies organize workshops/courses on latest technologies to enhance technical skills.

Placement

Placement Process

1. Principal formulates a Training and placement team consisting of a Training and Placement Officer (TPO), one faculty member from each department, and two student representatives from each third-year.
2. End of the sixth semester, faculty representatives collect data about the interest of the students like whether they are interested in placement or higher studies or other.
3. TPO sends a request to submit the profile of interested students.

4. Students submit their profiles to TPO through faculty representatives.
5. TPO approaches different industries and negotiates dates of a campus visits.
6. TPO announces placement process dates for a particular industry.
7. TPO announces company criteria and asks for the list of students interested in that industry.
8. Student submits his/her response through the student representative.
9. Students attend the placement process on a scheduled date.
10. Industry conducts placement processes as per schedule.
11. Industry announces results at the end of the process.
12. Steps 6 to 10 are repeated for different industries.



Link for the Company information: Our Recruiters (frcrce.ac.in)
(http://frcrce.ac.in/index.php/students/placements/our-recruiters)

Website link: Overview- Campus Placements (frcrce.ac.in)
(http://frcrce.ac.in/index.php/students/placements/campus-placement-overview)

9.6 Entrepreneurship Cell (5) Total Marks 4.00

Institute Marks: 4.00

E-Cell started with the intention of inculcating entrepreneurship culture among the students to look into avenues that 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-exhibition, Internship fair, and Idea generation workshop.

9.7 Co-curricular and Extra-curricular Activities (10)

Total Marks 10.00
Institute Marks: 10.00

Activities in the year 2022-23

Sr. No.	Name of the Activity	Duration	Link
1	Fr, Conceicao Rodrigues Memorial Debate	October 07-08, 2022	
2	Session on fire safety and first aid	October 19, 2022	
3	A session on Jagrut Mumbaikar	October 01, 2022	
4	A session on financial literacy	October 01, 2022	
5	Workshop on Research, Funding and IPR	October 15, 2022	
6	One-day workshop on teaching learning practices and examination reforms	August 20, 2022	
7	Interactive session Swami Sachidanand Bharathi	July 13, 2022	
8	Rotaract Club: Beach Clean Up	9th October,2022	https://www.rotaractcrce.com/events.html
9	IIC-WRO Regional meet	1st August, 2022	https://www.agnelashram.org/images/Agnel_Ashram_News_PDF/Fr_Agnel_Ashram_News_September_22_Issue.pdf
10	Intra-college Sports Events Table Tennis Carom Badminton Football	 September 10, 2022 September 10, 2022 September 25, 2022 October 01-02, 2022	

Activities in the year 2021-22

Sr. No.	Name of the Activity	Duration	Link
1	NSS Refurbishing college stairs Tree plantation Tree plantation in St. Joseph's college Peace day Cardiac arrest Dog safety webinar Marine pollution Eco friendly diwali COVID 19 documentary Sustainable living Road safety Importance of mangroves Say no to smog Social activism Art of living Bhajan sandhya Say no to drugs Azadi ka amrit mahotsav (Surya Namaskar) Youth's choice, Global voice NSS orientation Small industry day Teacher's day Poster making Ganesh utsav Old age home Nature trails Article writing Blood donation	 February 22, 2022 February 15, 2022 March 12, 2022 September 21, 2022 September 26, 2021 October 04, 2021 October 13 and 16, 2021 November 04-05, 2021 November 18, 2021 December 17, 2021 December 21, 2021 January 19, 2022 February 03, 2022 February 27, 2022 August 24-26, 2021 October 02, 2021 January 07, 2022 March 06, 2022 February 25, 2022 August 21, 2021 August 30, 2021 September 04, 2021 September 18, 2021 November 13, 2021 December 11, 2021 January 23, 2022 February 17, 2022	
2	Conceicao Rodrigues Memorial Debate	October 08-10, 2021	
3	International Conference on Advances in Computing, Communication and Control (ICAC3'21)	3rd and 4th December 2021	
4	Fragmag (College Magazine)		http://www.frcrce.ac.in/index.php/students/students-council/fragmag-2022 (http://www.frcrce.ac.in/index.php/students/students-council/fragmag-2022)
5	TEDxCRCE First event - Sharing idea and experiences with fellow youth Resume building workshop (Internship Expo event) Annual conference Bounce Back	 October 23, 2021 January 17, 2022 April 10, 2022	 Failing is not wrong, repeating the same mistakes is | Lakshay Narula | TEDxCRCE (https://youtu.be/9G4FmS1yARk?list=PLFgTdxXPndPT1v2BFtRqUbqbj-4MmYjko)
6	ACM-CRCE UNSCRIPT 2K22 Fr. Conceicao Rodrigues Memorial Hackathon	January 22-23, 2022	http://frcrce.acm.org/ (http://frcrce.acm.org/)
7	Debsoc – The Debate Society, FR. CRCE		

8	Rotaract Club of CRCE Cleanliness Drive Treks Open Mic Awareness programs	Foot Slog 12 feb 22 Micdrop AL-Fresco 13-14 Mar 2022	https://www.rotaractcrce.com/events.html (https://www.rotaractcrce.com/events.html)
9	Technical teams Team Abadha Formula Racing SAE Aero team		https://teamabadhaofficial.web.app (https://teamabadhaofficial.web.app/) https://instagram.com/teamabadha?igshid=YmMyMTA2M2Y= (https://instagram.com/teamabadha?igshid=YmMyMTA2M2Y=) https://docs.google.com/document/d/1zgpurnf_6XcysWT_XF4vTM-OhK3Jc0gWetORddwuH-o/edit (https://docs.google.com/document/d/1zgpurnf_6XcysWT_XF4vTM-OhK3Jc0gWetORddwuH-o/edit) https://www.sae.org/attend/student-events/sae-aero-design-west/awards-results (https://www.sae.org/attend/student-events/sae-aero-design-west/awards-results)
10	The Alumni Association of Fr, Conceicao Rodrigues College of Engineering Alumni Meet	February 26, 2022	
11	Team Vaayushastra A face of FR, CRCE in SAE Aero design competition		
12	Convocation Ceremony	February 19, 2022	
13	Insignia - Ceremony of Students Council	October 02, 2021	
14	Institute Innovation Council (IIC) (57 events)	Throughout the academic year	
15	ASME Electric Vehicles – Your opportunity to grow Webinar on Project Management Crescendo How it works (a weekly series of 15 episodes of Engineering and Technology related Items/ components)	 November 12, 2021 November 13, 2021 March 17, 2022	

10. GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES (120)

Total Marks 117.00

10.1 Organization, Governance and Transparency (40) Total Marks 40.00

10.1.1 State the Vision and Mission of the Institute (5) Institute Marks 5.00

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 & teachers; 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.

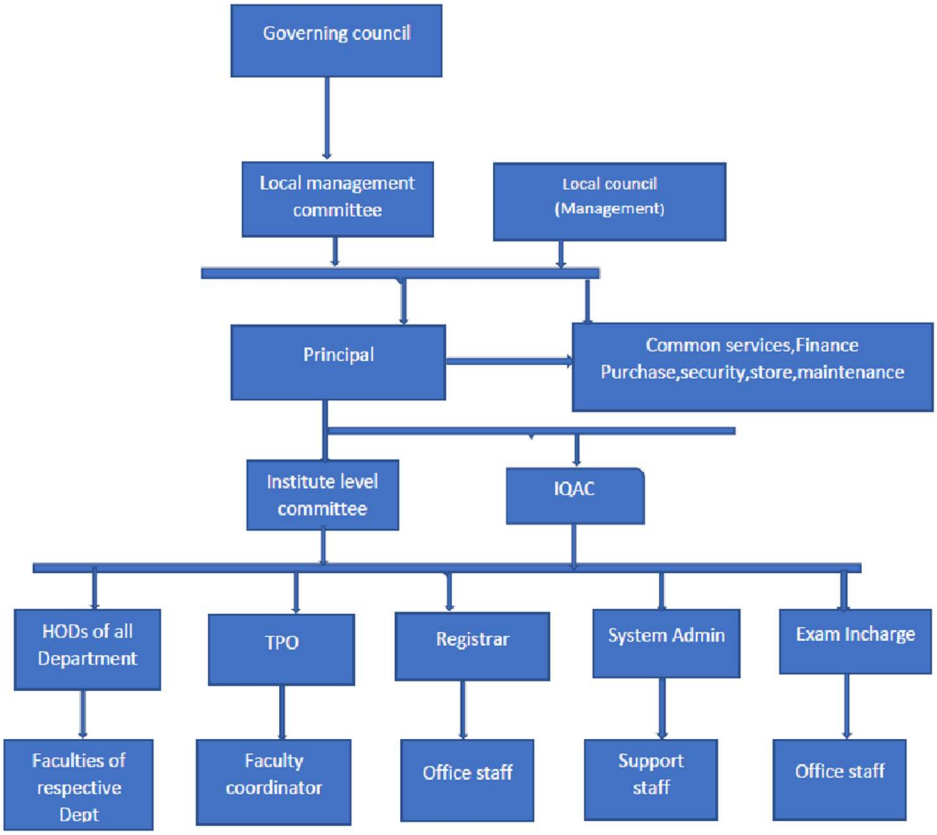
10.1.2 Governing body, administrative setup, functions of various bodies, service rules, procedures, recruitment and promotional policies (10)

Institute Marks : 10.00

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), a Local Management Committee (as per the guidelines of Mumbai University), and Local Council Management (as per the guidelines of the Trust).

Administrative Set Up

The following figure illustrates the administrative setup of the institute.



Functions of various bodies:

Sr. No	Committee	List of Members	Functions & Responsibilities
1	Governing Council (GC)	1. Chairman- 1. Rev. Fr. Saturnine Almeida Chairman of the Society/ Trust. 2. Two members nominated by the Registered Society/ Trust (02 in number)- 2. Rev. Fr. Valerian DSouza. Director of Agnel Technical Education Complex *I* Trustee of the Society/Trust. Dr. S.M. Khot, Principal. Fr. Conceicao Rodrigues Institute of Technology, Vashi, Navi Mumbai. 3. Nominee of the All India Council for Technical Education - Regional Officer (Ex-Officio)- 4. Regional Officer, Western Region, AICTE, Mumbai. 4. An Industrialist/ Technologist/ Educationist from the Region to be nominated by the concerned Regional Committee as nominee of the Council, out of the panel approved by the Chairman of the Council - 5. Mr. P.N. Jumle. Director	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

		Board of Apprenticeship Training, Western Region, Ministry of HRD, Govt. of India 5. Nominee of the Affiliating Body/ University/ State Board of Technical education - 6. Dr. Deven Navinchandra Shah, Principal Shree LR. Tiwari College of Engineering Mira Road (E), DIST. THANE 401 107. 6. Nominee of the State Government - Director of Technical Education (Ex-officio) -7. Director of Technical Education, Maharashtra State. 7. An Industrialist/ Technologist/ Educationist from the Region nominated by the State Government - 8. Dr. R.S. Iyer, Director SP Jain Institute of Management & Research & Retired Principal of Fr CRCE, Bandra. 8. Principal Director of the concerned technical Institution (as a nominee of the Society/Trust) - Member Secretary - 9. Dr. Surendra Rathod, Principal of Fr CRCE, Sandra. 10. Two Faculty members to be nominated from amongst the regular staff one at the level of Professor and one at the level of Assistant Professor - 10. Dr. D.V. Bhoir, Professor Electronics & Computer Science Dept. 11. Mr. D.S.S. Sudhakar Associate Professor Mechanical Engineering Dept. 11. The number of members can be increased equally by adding nominees of the registered Society and by adding an equal number of educationists from the Region keeping in view the interest of the Technical Institution. The total number of members of a Governing Body shall, however not exceed 21 12. Mr. Suresh Ramanan, ZS Associates, World Trade Centre, Kharadi, Pune-411014. 13. Mr. Paresh Shelly, President, Sales - CtrlS Datacenters.	

2.	College Development Committee (CDC)	1. Chairman - Rev, Fr. Satumino Almeida 2. Director - FR. CRCE, Bandra / Secretary of the Management - Fr. Valerian DSouza. 3. Special Invitee - Fr. Eleuterio Fernandes and Fr. Trevor Pereira. 4. HOD, Nominated by the Principal - Dr. Sapna Prabhu. 5. Representative of the Teachers - Dr. Jagruti Save, Ms. Garima Tripathi and Dr. Sunil K. Surve. 6. Representative of the Non-Teaching Staff - Mr. Deepak Gaikwad. 7. Local member from field of Education - Dr. Shubha Pandit. 8. Local member from the field of Industry - Mr. James Maslamani. 9. Local member from field of Research - Dr. Kushal Tuckiey. 10. Local member from the field of Social Service - Fr. Joe Pereira. 11. Co-ordinator, Internal Quality Assurance Committee - Dr Bhushan Patil. 12. President of the College Students Council - Mr. Ninad Shetty. 13. Secretary of the College Students Council - Mr. Taransingh Rajpal. 14. Principal - Dr. Surendra Rathod.	CDC 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
3.	Local Committee Meeting (LCM)	1. Local Superior of Agnel Technical Complex, Bandra -Fr. Valerian DSouza. 2. Assistant Director of Agnel Technical Complex, Bandra - Fr. Eleuterio Fernandes. 3. Administrator, Balbhavan & Fr. Agnel School (Fr. Agnel Ashram) - Fr. Trevor Pereira 4. Financial Controller - Ms. Christina Simon. 5. In-charge, Samadhi Seva & Hospitality - Bro. Edison Pereira. 6. Principal (Fr. CRCE) - Dr. Surendra Rathod. 7. In-charge Principal, Polytechnic -Mr. Mangesh Mohan. 8. Principal, ITI - Mr. Mushtaq Malgundkar.	LCM meets to process and approve the proposals from different units of the complex. All major policy decisions are reviewed and approved by LCM
		1. Member of the Management - Fr. Valerian Dsouza 2. Chairman - Dr. Surendra Rathod. 3. Member (Teaching) - Prof. Shilpa Patil 4. Member (Teaching) - Prof. Kranti Wagle 5. Member (Teaching) - Prof. Garima Tripathi	Development and application of quality benchmarks. Parameters for various academic & administrative activities of the institution.
4.	Internal Quality Assessment Cell (IQAC)	6. Member (Teaching) - Dr. D.V. Bhoir 7. Member (Teaching) - Dr. V.S. Jorapur 8. Member (Teaching) - Dr. Bhushan Patil 9. Senior Administrative Office - Dr. Sapna Prabhu 10. Senior Administrative Officer - Dr. B.S. Daga	Collection and analysis of feedback from all stakeholders on quality- related institutional processes.

		11. Senior Administrative Officer - Dr. Jagruti Save 12. Nominee of the students - Mr. Taransingh Rajpal 13. Alumni - Mr. Mihir Karkare. 14. Employers Nominee - Mr. James Maslamani 15. Nominee from Industry - Mr. Lester Fernandes 16. Stakeholders Nominee (Parent) - Mr. Vikram Dingra 17. Co-ordinator - Dr. Sunil K. Surve.	Preparation and submission of the Annual Quality Assurance Report (AQAR) as per the guidelines and parameters of the NAAC
5	Institute level Committee (ILC)	1. Local Superior of Agnel Technical Complex, Bandra -Fr. Valerian DSouza. 2. Assistant Director of Agnel Technical Complex, Bandra - Fr. Eleuterio Fernandes. 3. Principal (Fr. CRCE) - Dr. Surendra Rathod. 4. Financial Controller - Ms. Christina Simon. 5. Dr. Sapnu U. Prabhu (Department of Electronics & Computer Engineering) 6. Dr. Sujata Deshmukh (Department of Computer Engineering) 7. Dr. Bhushan Patil (Department of Mechanical & Production Engineering). 8. Dr. Jagruti Save (Department of Artificial Intelligence & Data science). 9. Mr. Dileep C.C. (Department of Humanities and Science). 10. Mr. Mahesh Sharma - System Administrator. 11. Registrar - Mr. C.B. Shetty. 12. Sr. Clerk / Asst. Accountant - Robert Luzar.	ILC meets to process and approve the proposals of the institution. All major policy decisions are reviewed and approved by ILC.

10.1.3 Decentralization in working and grievance redressal mechanism (10)
Institute Marks: 10.00

The Head of Departments are as follows:
Dr. Sapna U. Prabhu (Department of Electronics & Computer Science)
Dr. Sujata Deshmukh (Department of Computer Engineering)
Dr. Bhushan Patil (Department of Mechanical Engineering)
Dr. Jagruti Save (Department of Artificial Intelligence & Data science)
Mr. Dileep C.C. (Department of Humanities and Science).

The following faculty are entrusted with additional responsibilities:
lncharge - Examination Cell: **Dr. Dipak Bhoir.**
lncharge - Student Affairs: **Dr. S. S. Sudhakar.**
NBA & NAAC Coordinator - **Dr. Sunil Surve.**
Head Consultancy & Revenue Generation: **Dr. V. S. Jorapur**
In-charge - Research & Development: **Dr. Ketaki Joshi.**
In-charge - Infrastructure: **Mr. Mahesh Sharma.**
In-charge - Ambience: **Mrs. Monica Khanore.**
In-charge - Public Relations: **Mr. Jayen Modi.**

Re-constitution of Internal Complaints Committee (ICC) (Gender Sensitisation Prevention

and Prohibition of Sexual Harassment of Women Employees and Students and Redressal of Grievances in Technical Institutions)

Ref.: 1. NCTE Notification No.F-AICTE/WH/2016/01 dated 10.06.2016
2. University of Mumbai Circular No.CONCOU24/of 2014-15 dt. 12.11.2014

In compliance with the above referred AICTE Notification and the Circular received from University of Mumbai, the management has formulated Internal Complaints Committee under the above Act.

Internal Complaints Committee

Internal Complaints Committee has been constituted in the college for the sexual harassment of women at the workplace (prevention, prohibition, and redressal) and University of Mumbai Circular No. CONCOU24/ of 2014-15 dated 12/11/2014.ICC is headed by a senior female faculty of the institute. ICC meets on a need basis to address any complaints from students, teaching and nonteaching members and takes necessary action. The College has a zero-tolerance policy towards any such transgression. The college is committed to providing a safe and conducive work and academic environment to students and its employees and is extremely alert to matters pertaining to any kind of harassment and gender sensitivity. Posters are displayed at strategic places within the campus to communicate the philosophy of the institute in such matters.

Sr. No	Name of the Member	Designation	Contact Nos.	Email Address
1	Prof. Merly Thomas Associate Professor — Computer Engg.	Presiding Officer	9820755087	merly@frcrce.ac.in
2	Prof. Binsy Joseph Associate Professor- Electronics Engg	Member Faculty	9833503363	binsy_joseph@frcrce.ac.in
3	Prof. Sarika Davare Assistant Professor- Info. Tech. Dept.	Member Faculty	9969935306	sarika.davare@frcrce.ac.in
4	Mr. Robert Dias, Office Superintendent	Member NonTeaching	9730943327	dias@frcrce.ac.in
5	Mrs. Jyoti Kargutkar, Lab. Technician	Member Non-Teaching	9867724555	jyoti@frcrce.ac.in
6	Mr. Tarasingh Ragpal	Member Student	9082343049	Taranrajpa111@qmail.com
7	Nangani Anthony Benno	Member Student	9137811659	bennoanthony4@gmail.com
8	Ms. Sachi Verma	Member Student	7506054956	sachiverma00@gmail.com
9	Rev, Fr. Joe H. Pereira Founder & Managing Trustee - Kripa Foundation, Bandra	Member - NGO	9820199298	kripabandra@gmail.com

Women Development Cell

In an effort to promote the well being of the girl students, Teaching and Non-Teaching Women Staff of the Institute, to deal with the cases/ complaints of sexual harassment and to implement the womens' policies in general, a Womens Development Cell has been reconstituted in the College. This is in compliance with the decision of the Supreme Court of India. The College Womens Development Cell shall consist of the following members:-

Sr. No.	Name of the Member	Designation	Contact Nos.
1	Dr. Surendrasingh S. Rathod	President	99202 28275
2	Dr. Sapna Prabhu	Co-ordinator	9833545743
3	Dr. Jagruti Save	Member	9869621900
5	Mrs. Sushma Nagdeote	Member	8879626260
6	Mrs. Yvonne Fernandes	Member	98921 18413
7	Ms. Neha Prakash	NGO Representative	8419996979
8	Ms. Palak Joseph	Students Representative	9130006547

Functions & Responsibilities:

1. To create social awareness about the problems of women and in particular regarding gender discrimination.
2. To develop the self-confidence of female students, teaching and non-teaching women staff of the College.
3. To prevent sexual harassment and to promote general well-being of female students, teaching women staff of the College.
4. To organize seminars, workshops relating to women development.
5. To organize awareness programmes, skill development programmes, inspirational and motivational lectures and personality development programmes for stakeholders.

Anti-Ragging Squad & Anti-ragging Comittee

Anti-Ragging Committee to ensure compliance with the provisions of Regulations as well as the provisions of any law for the time being in force concerning ragging; and also, to monitor and oversee the performance of the Anti-Ragging Squad in prevention of ragging in the institution.

Roles and responsibilities

Any act of Indiscipline, Teasing or Handling with Rudeness.

- Any act that Prevents, Disrupts the Regular Academic Activity. (https://www.ipeindia.org/)
- Any activity which is likely to cause Annoyance, hardship, Psychological Harm or creates Fear or Apprehension.
- Any Act of Financial Extortion or Forceful Expenditure.
- Any Act of Physical Abuse causing Assault, Harm or danger to Health.
- Any Act of abuse by spoken words, emails, SMS or public insult etc.
- Any Act of Wrongful Confinement, Kidnapping, molesting or committing unnatural

offenses, use of criminal forces, trespass or intimidation.
- Any unlawful assembly or conspiracy to ragging.

<u>Anti Ragging Squad:</u> Anti Ragging Squad consists of the following members of the faculty :

Dr. V.S. Jorapur -Associate Professor - Production Engg. Dept. (9869288147) - Coordinator
Dr. Sapna Prabhu - Professor- Electronics and Computer Science Engineering Department (9833545743).
Dr. B.S. Oaga -Associate Professor - Computer Engineering Department (9869776377)
Merly Thomas -Associate Professor - Computer Engineering Department (9820755087).

<u>Anti Ragging Committee:</u> Anti Ragging Committee will consist of the following members of the faculty and students:

Dr. Surendrasingh S. Rathod - Head of the Institution (9869005457)
Ms. Pallavi Kulkarni - Representative of Civil & Police Administration (8689888655)
Mr. Amit Kocharekar - Representative of Local Media (9820500110)
Ms. Juhi Chaudhari - Representative of Non-Government Organisation (9137630073)
Dr. Jagruti K. Save - Representative of Faculty Member (9869621900)
Dr. Bhushan Patil - Representative of Faculty Member (98203 69797)
Dr. Sapna Prabhu - Representative of Faculty Member (98335 45743)
Dr. Dr. B. S. Oaga - Representative of Faculty Member (87796 48719)
Ms. Rajeshwari Iyer - Representative of Parents (9987263283)
Ms. Vishakha Fernandes - Representative of Parents (9819624346)
Mr. Taransingh Rajpal Representative of Students (90823 43049)
Ms. Nicole Dias - Representative of Students (9892093890)
Mr. Vallance Alvares - Representative of Students (7045633289)
Mr. C.B. Shetty - Representative of Non Teaching Staff (99872 88538).

10.1.4 Delegation of financial powers (10)

Institute Marks : 10.00

1. Management/ Director initiates the process of annual budgeting by calling a meeting of Principal, HODs, Unit Heads and Financial Controller.
2. Principal has powers for purchase/ spending for infrastructure development related to academic activity.
3. Heads of Departments scrutinize proposals received from the staff members and the lab-in-charges based on the need and merit and forward them to the Principal for approval.
4. The Coordinators of various student related activities, Librarian, Hostel wardens etc. have powers for spending money pertaining to their activities after obtaining the approval from the Principal.

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

Institute Marks : 5.00

- 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 the 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 website.
- Mandatory disclosure is made available on the website as per AICTE norms.

10.2 Budget Allocation, Utilization, and Public Accounting at Institute level (30) Total Marks 30.00

10.2.1 Adequacy of budget allocation (10)

Institute Marks: 10.00

Approximately 10% of planned expenditure is allocated for improving the Institutes infrastructure and approximately 20% is used for the institutes recurring expenses.

In order to prepare the budget, indicative figures from the previous three years expenses are gathered, which serve as the baseline for the aforementioned expense heads. While preparing the budget, expenses anticipated to be incurred for the proposed development activities as well as due to inflation adjustments are taken into account.

Department heads propose a departmental budget for the fiscal year, in consultation with faculty members. Estimated expenses for student activities are prepared by the Principal after deliberating with the faculty in-charge of various activities.

The recurring expenditure is estimated and budgeted in accordance with the estimates. By consulting the department heads and based on the departments' needs, the non-recurring component of the budget is prepared. Distribution of the non-recurring procurement funds is done based on need and priority.

The proposed budget is discussed and finalized in the Institute Level Committee meeting. The budget is then submitted for approval to the Local Council Management, Local Management Committee, and Governing Council.

Previous years budgeted and actual expenditure figures show that the budgetary provisions for various heads were sufficient.

Average budget allocated for past three years is as follows:

Items	Percentage of the budget
Infrastructure built-up	14.33
Library	0.14
Laboratory equipment	4.11
Laboratory consumables	0.18
Teaching and non-teaching staff salary	76.72
Maintenance and spares	3.32
R&D	0.78
Training and Travel	0.37

Miscellaneous expenses	0.05
Others	0.00
Total	**100**

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

Institute Marks : 5.00

Audited statements for the financial years 2019-20, 2020-21, and 2021-22 are available on the college website. Link: http://www.frcrce.ac.in/index.php/audited-statements

10.2.2 Utilization of allocated funds (15)

Institute Marks : 15.00

The budgetary allocations are made after careful consideration of the institute's future needs. Every year, the recurring expenses budget is met. Capital investments are made concurrently with infrastructure readiness. A portion of the capital budget is set aside as carry forward resources for the purchase of equipment and machinery once the infrastructure is in place. A well-defined procurement process is in place, in accordance with industry best practices.

However, due to Pandemic during the academic year 2019-20, 2020-21 the budgeted amount was not be utilized. Also, due to shortage of computer parts the vendors were unable to supply the required computers/equipment.

Summary of current financial year's budget and actual expenditure incurred (for the institution exclusively) in the three previous financial years

Total Income at Institute level: For CFY, CFYm1, CFYm2 & CFYm3 CFY: (Current Financial Year),
CFYm1: (Current Financial Year minus 1), CFYm2: (Current Financial Year minus 2) and CFYm3: (Current Financial Year minus 3)

Table 1 - CFY 2022-23

Total Income 22,55,52,334.42				Actual expenditure (till...): 20,25,12,751.98			Total No. of Students 1324
Fee	Govt. 0	Grants	Other sources(specify) Others	Recurring including salaries	Non Recurring	Special Projects/Any other, specify	Expenditure per student
20,05,63,439.75		0	2,49,88,894.67	18,17,25,954.98	1,51,86,797	0	1,52,955.25

Table 2 - CFYm1 2021-22

Total Income		Actual expenditure (till. .): 16,40,82,916.52	Total No. of

20,49,39,739.44							Students 1274
Fee	Govt. 0	Grants	Other sources (specify) Others	Recurring including salaries	Non Recurring	Special Projects/Any other, specify	Expenditure per student
18,29,86,326.50		0	2,19,53,412.94	16,10,20,296.92	30,02,619.60	0	1,28,746.40

Table 3 - CFYm2 2020-21

Total Income 19,37,65,484.12				Actual expenditure (till ..): 13,84,26,513.37			Total No. of Students 1251
Fee	Govt. 0	Grants	Other sources (specify) Others	Recurring including salaries	Non Recurring	Special Projects/Any other, specify	Expenditure per student
17,43,75,232		0	1,93,90,252.12	13,82,74,887.37	1,51,626	0	1,10,652.69

Table 4 - CFYm3 2019-20

Total Income 17,83,49,279.93				Actual expenditure (till ..): 15,73,90,254.57			Total No. Of Students 1127
Fee	Govt.	Grants	Other sources (specify) Others	Recurring including salaries	Non Recurring	Special Projects/Any other, specify	Expenditure per student
15,28,58,177.75	0	0	2,54,91,102.18	15,46,44,703.12	27,45,551.45	0	1,39,654.17

Items	Budgeted in CFY	Actual expenses in CFY	Budgeted in CFY*m1*	Actual Expenses in CFY*m1*	Budgeted in CFY*m2*	Actual Expenses in CFY*m2*	Budgeted in CFY*m3*	Actual Expenses in CFY*m3*
	2022-23	2022-23	2021-22	2021-22	2020-21	2020-21	2019-20	2019-20
Infrastructure Built-Up	54,01,000.00	87,32,895.00	45,86,000.00	0.00	24,75,500.00	0.00	33,28,000.00	15,64,898.00
Library	3,00,000.00	2,48,817.00	3,00,000.00	40,054.60	2,71,000.00	2,630.00	2,00,000.00	81,536.25
Laboratory equipment	39,99,000.00	62,05,085.00	17,67,600.00	11,21,665.00	76,53,500.00	3,22,137.00	51,38,000.00	0.00
Laboratory consumables	3,00,000.00	2,46,379.88	3,00,000.00	51,693.54	3,50,000.00	15,661.56	3,50,000.00	2,44,201.24
Teaching and non-teaching staff salary	*15,88,00,000.00*	*14,78,30,957.15*	*15,65,00,000.00*	*13,52,47,479.85*	*15,67,00,000.00*	*11,89,56,157.55*	*13,02,00,000.00*	*12,48,31,329.61*
Maintenance and spares	58,00,000.00	1,11,19,042.26	60,00,000.00	45,85,884.44	78,00,000.00	17,38,421.50	60,00,000.00	50,51,765.53
R & D	15,00,000.00	19,11,036.00	15,00,000.00	16,12,111.50	15,00,000.00	15,95,334.00	14,00,000.00	4,82,218.00
Training and Travel	10,50,000.00	2,69,999.00	10,50,000.00	44,126.00	10,50,000.00	14,613.00	7,00,000.00	1,52,801.00
Miscellaneous expenses	1,00,000.00	60,465.00	1,00,000.00	23,595.00	1,00,000.00	14,212.00	1,00,000.00	64,933.00
Others, specify	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**17,72,50,000.00**	**17,66,24,676.29**	**17,21,03,600.00**	**14,27,26,609.93**	**17,79,00,000.00**	**12,26,59,166.61**	**14,74,16,000.00**	**13,24,73,682.63**

10.3 Program Specific Budget Allocation, Utilization (30) Total Marks 27.00

Institute Marks:

Total Income at Institute level: For CFY, CFYm1, CFYm2 & CFYm3 CFY: (Current Financial Year), CFYm1: (Current Financial Year minus 1), CFYm2: (Current Financial Year minus 2) and CFYm3: (Current Financial Year minus 3)

Table 1: CFY 2022-23

5221666.68		Actual expenditure (till. ..): 3643027.23		Total No. of Students 424
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
1620000.00	36,01,600.00	12,71,785.00	60,75,324.00	17328.00

Table 2 : CFYm1 2021-22

4956666.67		Actual expenditure **(till** ..): 4335274.22		Total No. of Students 355
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
1320000.00	36,36,600.00	1564182.00	27,71,092.00	12212.00

Table 3 : CFYm2 2020-21

4151483.34		Actual expenditure **(till.** .): 1357156.68		Total No. of Students 292
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
838150.00	33,13,300.00	1052.00	13,56,100.00	4650.00

Table 4 : CFYm3 2019-20

4585000.01		Actual expenditure **(till** ..): 2745280.02		Total No. of Students 226
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
915000.00	36,69,900.00	55330.00	26,89,900.00	12147.00

Items	**Budgeted in 2022-23**	**Actual Expenses in 2022-23 till**	**Budgeted in 2021-22**	**Actual Expenses in 2021-22 till**	**Budgeted in 2020-21**	**Actual Expenses in 2020-21 till**	**Budgeted in 2019-20**	**Actual Expenses in 2019-20 till**
Laboratory equipment	1500000.00	1172258.00	1200000.00	1548160.00	729750.00	0.00	835000.00	22715.00
Software	0	0	0	0	0	0	0	0
Laboratory consumable	425000.00	868200.00	425000.00	73600.00	608300.00	50700.00	591600.00	326400.00
Maintenance and spares	1933300.00	3483500.00	1966600.00	1312100.00	1500000.00	554100.00	1900000.00	1694500.00
R&D	600000.00	764400.00	600000.00	644900.00	600000.00	641600.00	560000.00	192900.00
Training and Travel	43300.00	15300.00	45000.00	8285.00	45000.00	8500.00	58300.00	20551.00
	720000.00	1043300.00	720000.00	748100.00	668400.00	102250.00	640000.00	488200.00
Total	5221600	7346958	4956600	4335145	4151450	1357150	4584900	2745266

10.3.1 Adequacy of budget allocation (10)

Institute Marks : 9.00

Laboratory upgradation happens once in five to six years with latest hardware. Allocated budget is sufficient to enable development of at least two labs each year. Faculty members, in consultation with laboratory staff develop the labs. In the last two years, we have added a Machine Learning server, and upgraded Distributed Computing Laboratory, Database Management Laboratory, Web Technology, and Software Engineering Laboratory. Also, we use open-source software to fulfill academic requirements. So, we do not need to budget for software.

Academic Year	2022-23		2021-22		2020-21	
Items	Budgeted (in Lacs)	Actual Expenses (in Lacs)	Budgeted (in Lacs)	Actual Expenses (in Lacs)	Budgeted (in Lacs)	Actual Expenses (in Lacs)
Laboratory Equipment	15	17.3	12	15.48	7.3	0
Laboratory Consumables	4.25	3.51	4.25	0.74	6.08	0.5
Maintenance and Spares	19.33	6.18	19.67	13.12	15	5.54
R&D	6	6.24	6	6.45	6	6.42

As shown in above table, adequate funds are budgeted for lab development sufficient. On an average 1O lakhs are budgeted for lab up-gradation. Budget for non-recurring expenses is also allocated sufficiently

10.3.2 Utilization of allocated funds (20)

Institute Marks : 18.00

The budgeted funds are utilized for the specified purposes in the same financial year. Latest hardware is procured to keep abreast with the industry requirements. Latest open- source softwares are used as required for the laboratory experiments. Laboratories are maintained and upgraded regularly.

Table 1: Budget and Expenditure for the last three years

Year	Budgeted Amount (In Lacs)	Actual Expenditure (In Lacs)
2022-23	52.22	36.43
2021-22	49.57	43.35
2020-21	41.51	13.57

10.4 Library and Internet (20) Total Marks 20.00

10.4.1 Quality of learning resources (hard/soft) (10)

Institute Marks: 10.00

- The Library is situated on the first floor of the college building.
- The total number of books available is 32270, which are from renowned publishers like Tata McGraw Hill, Pearson education, Wiley, Springer. Elsevier. PACKT, etc.
- Library has approximately 49 Indian Journals.
- Every year there is an addition of 720 books, 240 new titles,130 new editions.
- Textbooks and Reference books prescribed by the University are available.
- E books are also available

- International Journals and 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.
- Anti Plagiarism Software" Turnitin" is subscribed in the library.
- 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 (Web OPAC)
- Students can access DELNET through the worldwide web at http//delnet.nic.in.
- Students can access IEEE Xplorer and ASME Digital library. * Knimbus ebook Virtual Library - Engineering collection has been added to the E- resources. The number of resources incorporated in the Knimbus e book engineering collection are:

1	E- Journals	1574
2	E- Books	906
3	E- Magazines	14
4	Case Reports	229
5	Conference proceedings	125

- Institute provides book bank facility
- Institute has IIT (Bombay) library membership for students and staff.

Support to students for self-learning activities

1) Availability of digital library content: NPTEL Video courses/E- journals with 220 CD's are available for 27 subjects (Production, Electronics, Computer, Information Technology)
2) Reference books, handbooks, conference and workshop proceedings are available.
3) 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 login. Online access for NPTEL courses is provided in the library.
4) Reference books, handbooks, workshop and conference proceedings are available.
5) Library facilities are extended beyond college hours for self-study.
6) Purchased new Anti Plagiarism software "Turnitin"
7) Library is a member of NDLI CLUB (National digital library)

10.4.2 Internet (10)

Institute Marks : 10.00

Name of the Internet provider	ISP 7Star operated by OmSai
Available band width	100 MBPS (1:1) Leased Line, 150 MBPS broadband
WiFi availability	Yes at strategic locations
Internet access in labs, classrooms, library and offices of all Departments	Yes
Security arrangements	UTM appliance, Caching service

Annexure I

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

(B) PROGRAM SPECIFIC OUTCOME (PSOs)

PSO1	Develop Artificial Intelligence and Machine Learning systems.
PSO2	Apply cyber security mechanisms to ensure the protection of information technology assets.

Declaration

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

I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines inforce as on date and the institutes hall fully abide by them.
It is submitted that information provided in this Self Assessment Report is factually correct.
I understand and agree that an appropriate disciplinary action against the Institute willbe initiated by the NBA. In case, any false statement/information is observed during pre-visit, visit, postvisit and subsequent to grant of accreditation.

Head of the Institute
Name: Dr. S. S. Rathod
Designation. Principal
Signature:

Seal ofThe Institution:

Place: Mumbai
Date: 23-12-2022 14:04:06