

**Part B**[Back To Content Page](#)**1 Vision, Mission and Programme Educational Objectives (75)****Total Marks : 75.00****1.1 Mission and Vision (5)**

1.1.1 State the Vision and Mission of the institute and department (1)

(List and articulate the vision and mission statements of the institute and department)

**Vision of the Institute:****"Developing into a world-class, pace-setting Institute of Engineering and Technology with distinct identity and character, meeting the goals and aspirations of society."**

The vision statement of our institute reflects a commitment to achieving excellence and making a positive impact on society through engineering and technology. Lets analyze the key components:

- World-Class Institute: The aspiration to become a world-class institute suggests a commitment to achieving high standards in education, research, and overall institutional excellence.
- Pace-Setting: The term "pace-setting" implies that the institute aims not just to follow existing trends but to set new benchmarks and lead in various aspects of engineering and technology.
- Distinct Identity and Character: Developing a distinct identity and character suggests that the institute aims to be unique and recognizable. This could involve focus on specific fields or areas of expertise.
- Meeting the Goals and Aspirations of Society: This emphasizes the institutes commitment to serving the broader community. It suggests that the educational and research programs are designed to meet the needs and challenges of society.

Overall, the vision statement indicates a strong commitment to excellence, innovation, uniqueness, and societal relevance in the field of engineering and technology. A clear and inspiring vision guides the direction of the institution.

**Mission of the Institute:****1. To maintain a conducive infrastructure and learning environment for world class education.****2. To nurture a team of dedicated, competent and research-oriented faculty.****3. To develop students with moral & ethical values, for their successful career by offering a variety of programmes and services.**

Our institutes mission statements reflect a commitment to provide a high-quality learning environment, fostering a dedicated and research-oriented faculty, and developing well-rounded students.

**To maintain a conducive infrastructure and learning environment for world-class education:**

This mission emphasizes the importance of creating an environment that supports world-class education. It involves providing state-of-the-art infrastructure and a conducive learning atmosphere.

**To nurture a team of dedicated, competent, and research-oriented faculty:**

This mission underscores the significance of the faculty in the educational process. It aims to cultivate a team of educators who are not only dedicated but also competent and research-oriented.

**To develop students with moral & ethical values, for their successful career by offering a variety of programs and services:**

This mission statement focuses on the holistic development of students. It acknowledges the importance of instilling moral and ethical values in addition to academic knowledge.

In summary, our institutes mission statements emphasize the importance of infrastructure, faculty quality, and the holistic development of students, including their moral and ethical values.

**Department of Computer Applications****Vision of Department:****"To emerge as a centre of excellence in the field of computer education with distinct identity and quality in all areas of its activities and develop a new generation of computer professionals."**

The vision statement for our department outlines a comprehensive and ambitious set of goals. Lets analyze the key components:

Centre of Excellence in Computer Education:	This part of the vision suggests a commitment to providing high-quality education in the field of computer science. Being a "centre of excellence" implies a focus on academic rigor, cutting-edge research, and a commitment to staying at the forefront of developments in computer science education.
Distinct Identity and Quality in All Areas of Activities:	The desire for a distinct identity signals an aspiration to be recognized and distinguished among other institutions. The emphasis on quality across all activities, whether it be teaching, research, or other initiatives, reinforces a commitment to maintaining high standards.
Develop a New Generation of Computer Professionals:	The vision focuses on producing a new generation of professionals in the field of computer science. This likely involves not only imparting technical skills but also fostering qualities such as critical thinking, problem-solving, and adaptability that are crucial for success in the rapidly evolving field of technology.
Leadership, Commitment, and Moral Values:	This part of the vision speaks to the broader development of students beyond technical skills. It indicates a commitment to nurturing qualities such as leadership and instilling a sense of commitment, responsibility, and moral values among students. This holistic approach aims to produce well-rounded professionals who can contribute positively to society.

In summary, our departments vision is comprehensive, encompassing excellence in education, the development of distinct identity, and a focus on producing competent and responsible computer professionals.

**Missions of Department:****M1. Provide quality education in Computer Applications and bridge the gap between the academia and industry.**

**M2. Promoting innovation research and leadership in areas relevant to the socio-economic progress of the country.****M3. Develop intellectual curiosity and a commitment to lifelong learning in students, with societal and environmental concerns.**

Our departments mission statements outline a clear focus on providing quality education in Computer Applications, fostering innovation research, leadership, and insti

Provide quality education in Computer Applications and bridge the gap between academia and industry (M1)	This mission highlights the commitment to delivering quality education in the field of Computer Applications. The emphasis on bridging the gap between academia and industry indicates a practical and applied approach, suggesting a desire to equip students with skills and knowledge that are directly applicable in real-world professional settings.
Promoting innovation research and leadership in areas relevant to the socio-economic progress of the country (M2)	This mission focuses on promoting innovation, research, and leadership. It suggests a commitment to advancing knowledge and contributing to the socio-economic progress of the country. This could involve encouraging faculty and students to engage in cutting-edge research and projects that address real-world challenges.
Develop intellectual curiosity and a commitment to lifelong learning in students, with societal and environmental concerns (M3)	This mission underscores the importance of holistic student development by fostering intellectual curiosity and a commitment to lifelong learning. The inclusion of societal and environmental concerns suggests a broader perspective, encouraging students to be socially responsible and environmentally conscious in their approach to education and beyond.

In summary, our departments mission statements articulate a commitment to quality education, applied learning, research, leadership, and the holistic development of consciousness.

Institute Vision	Correlation & Justification	Department Vision
Developing into a world-class, pace-setting Institute of Engineering and Technology with distinct identity and character, meeting the goals and aspirations of the society.	HIGH (3)	To emerge as a centre of excellence in the field of computer education with distinct identity and quality in all areas of its activities and develop a new generation of computer professionals with proper leadership, commitment and moral values.
<b>JUSTIFICATIONS</b>		
We strive to develop a distinct identity and character, setting the benchmark for excellence in education, research, and community impact.	HIGH (3)	We aspire to cultivate a unique identity marked by exceptional quality across all facets of our activities, encompassing teaching, research, and community engagement.
The institute's goal is to shape a new generation of engineers and technologists who not only excel in their fields but also embody leadership, commitment, and ethical values.	HIGH (3)	The department's vision is to empower a new generation of computer professionals who stand out for their technical prowess, innovative thinking, and problem-solving skills.
Meeting and exceeding the aspirations of the society we serve.	HIGH (3)	Beyond technical expertise, we are committed to nurturing leadership qualities, unwavering commitment, and strong moral values in our students, ensuring their holistic development and contribution to the ever-evolving world of technology.

Table 1.1: Institute Vision- Department Vision- Justification

Institute Missions	Correlations & Justifications	Department Missions
To maintain a conducive infrastructure and learning environment for world-class education.	HIGH (3) Both statements emphasize the commitment to quality education and creating an environment that aligns with world-class standards. The departments focus on	Provide quality education in Computer Applications and bridge the gap between academia and industry (M1).

	bridging the gap between academia and industry directly contributes to the institutes goal of providing a conducive learning environment by ensuring practical and industry-relevant education.	
To nurture a team of dedicated, competent, and research-oriented faculty.	HIGH (3) Both statements emphasize the importance of dedicated and research-oriented faculty. The departments mission aligns with the institutes goal by focusing on promoting innovation, research, and leadership, contributing to the development and competence of faculty members as envisioned by the institute.	Promoting innovation research and leadership in areas relevant to the socio-economic progress of the country (M2).
To develop students with moral & ethical values, for their successful career by offering a variety of programs and services.	HIGH (3) Both statements emphasize the holistic development of students. The departments mission aligns with the institutes goal by focusing on intellectual curiosity, lifelong learning, and a commitment to societal and environmental concerns, contributing to the overall development of students with moral and ethical values.	Develop intellectual curiosity and a commitment to lifelong learning in students, with societal and environmental concerns (M3).

Table 1.2: Institute Mission- Department Mission- Justification

In this mapping, each institute mission statement is paired with the department mission statement(s) that align closely with the overarching goals. This highlights how

#### 1.1.2 Indicate how and where the Vision and Mission are published and disseminated (2)

(Describe in which media, e.g. websites, curricula books, the vision and mission are published and how these are disseminated among stakeholders)

The Vision & Mission are publicized and distributed in printed form at various locations within departments as well as in electronic form on websites and campus soft

1. Faculty includes the Vision & Missions in their Course file and the same is communicated to the students in the first class of the semester conducted by the concern
2. The Vision & Missions are clearly mentioned on the website of the institute.
3. The Vision & Missions are also mentioned at the entrance of the department, Students' Notice Boards, Faculty Notice Boards, HOD's Office, Class rooms and Com
4. Vision & Missions are available in students login of campus software "Etlab".
5. In addition, Vision & Missions are disseminated through student induction programs, parent-teacher meetings, faculty workshops, student awareness workshops, fac Vision & Missions are made accessible to all stakeholders of the programme.

Venue	Details
College Website	<a href="https://sjcetpalai.ac.in/mcahome/">https://sjcetpalai.ac.in/mcahome/</a>
CampusManagement Software "Etlab"	<a href="https://sjcetpalai.etlab.in/student/">https://sjcetpalai.etlab.in/student/</a>
HoD Room	Room no: 316
Classrooms	Room No. 307, 308, 310, 311
Tutorials Rooms	Room No. 301,302
Computer Lab	Room no: 117

Department Library	Room no: 318
Faculty Room	Room no: 315
Research Room	Room No. 303
Seminar Hall	Room No. 309
Conference Room	Room no: 317
Course Diary	Printed copy of Vision & Mission statements kept in the subject files of individual faculty. It can also be downloaded from ETLab software.
Official email	Email signature
Newsletter	Printed

Table 1.3: Vision Mission Publication details

## 1.1.3 Mention the process for defining Vision and Mission of the department (2)

(Articulate the process involved in defining the vision and mission of the department from the vision and mission of the institute)

The articulated process involved in defining the vision and mission of the department, drawing inspiration from the vision and mission of the institute includes:

Alignment Assessment	Begin by thoroughly reviewing the vision and mission statements of the institute. Understand the overarching goals, values, and aspirations that the institute aims to achieve.
Stakeholder Consultation	Engage with key stakeholders, including faculty, staff, students, and industry partners. Gather insights and perspectives on how the department can contribute to and align with the broader vision and mission of the institute.
SWOT Analysis Integration	Conduct a SWOT analysis specific to the department, considering its strengths, weaknesses, opportunities, and threats. Identify areas where the department can leverage its strengths to contribute to the institutes vision and address any weaknesses.
Collaborative Workshops	Facilitate collaborative workshops or retreats involving departmental stakeholders. Encourage discussions on how the department can align its objectives with the institutes vision and mission. This process fosters a collective understanding and commitment.
Identification of Core Values	Identify core values that resonate with both the institutes and the departments aspirations. Ensure that these values align with the principles outlined in the institutes mission, fostering consistency and coherence.
Drafting Vision Statement	Craft a departmental vision statement that reflects the overarching vision of the institute while specifying how the department uniquely contributes to it. Ensure that the vision is aspirational, forward-looking, and aligned with the institutes long-term goals.
Mission Statement Development	Develop a mission statement that outlines the specific purpose, goals, and activities of the department. Align each aspect of the mission with the corresponding elements in the institutes mission, ensuring synergy and complementarity.
Cross-Referencing	Cross-reference the drafted vision and mission statements with those of the institute. Verify that there is consistency and alignment in language, tone, and objectives to ensure a seamless integration.
Feedback and Iteration	Share the preliminary vision and mission statements with stakeholders for feedback. Incorporate constructive input to refine and enhance the statements. This iterative process ensures that the final versions resonate with the entire department community.
Leadership Approval	Seek approval from departmental leadership and other relevant decision-makers, ensuring their endorsement and alignment with the institutes overarching goals.
Communication and Implementation	Communicate the finalized vision and mission statements to all stakeholders. Implement strategies and initiatives that actively contribute to the institutes vision, integrating these elements into the departments daily activities and long-term plans.
Regular Review and Adaptation	Periodically review the departmental vision and mission, ensuring that they remain aligned with any updates or changes in the institutes vision. Adapt as needed to maintain cohesion and relevance.

By following this process, the department can ensure that its vision and mission are not only aligned with the institutes overarching goals but also uniquely contribute

The Vision and Mission of the department is defined by the following process:

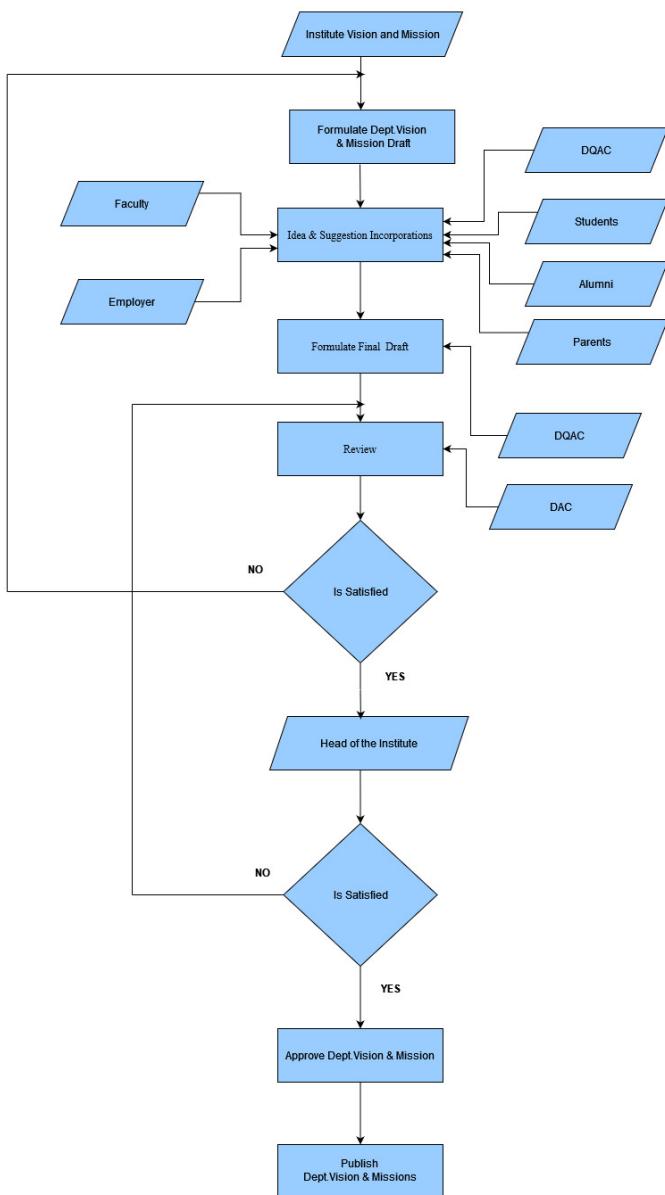
Step 1: Department Quality Assurance Committee prepares an initial draft copy of Vision and Mission of the department by considering the Vision and Mission stater

Step 2: DQAC considers all the inputs from step 1 , formulate the final draft and submit it to the Department Advisory Committee for review.

Step 3: If satisfied, the Department Advisory Committee forwards the final draft to the Head of the Institution for Approval.

If not satisfied, the process repeats from Step 1.

Step 4: After the final approval, the Vision and Mission of the Department is disseminated to the stakeholders of the programme.



*Fig 1.1 : Department Vision-Mission Formation process*

## 1.2 Programme Educational Objectives (10)

**Total Marks : 10.00**

1.2.1 Describe the Programme Educational Objectives (PEOs) (1)

Institute Marks : 1.00

(List and articulate the programme educational objectives of the programme being considered for accreditation)

The PEOs of Master of Computer Applications (MCA) programme are as follows:

PEO1. MCA Graduates will be able to progress career productively in software industry, academia, research, entrepreneurship pursuits, government, consulting firms and other IT enabled services.

PEO2. MCA Graduates will be able to achieve peer-recognition as an individual or in a team by adopting ethics and professionalism, and communicate effectively to excel well in crisis and interdisciplinary teams.

PEO3. MCA Graduates will be able to continue life-long professional development in computing and in management that contributes in self and societal growth.

### Description

The Program Educational Objectives (PEOs) for your departments Master of Computer Applications (MCA) program are well-defined and articulate the intended outcomes for graduates. Heres a summary of each PEO:

PEO1: Career Progression	Objective: MCA Graduates will be able to progress productively in various career paths.  Intended Outcomes: Successful careers in the software industry, academia, research, entrepreneurship pursuits, government, consulting firms, and other IT-enabled services.
PEO2: Professional Recognition and Effective Communication	Objective: MCA Graduates will achieve peer-recognition by adopting ethics and professionalism, demonstrating effective communication, and excelling in crisis and interdisciplinary teams.  Intended Outcomes: Recognition as individuals or team members with a strong commitment to ethics and professionalism.  Effective communication skills to excel in crisis situations and interdisciplinary team settings.
PEO3: Life-long Professional Development	Objective: MCA Graduates will continue life-long professional development in computing and management.  Intended Outcomes: Demonstrated commitment to continuous learning and professional development.  Contributions to self and societal growth through ongoing learning in computing and management.

These PEOs collectively aim to prepare MCA graduates not only for successful careers in diverse fields but also to instill a commitment to ethics, effective communication, and life-long learning, contributing to both personal and societal growth.

#### 1.2.2 State how and where the PEOs are published and disseminated (1)

Institute Marks : 1.00

(Describe in which media, e.g. websites, curricula books, the PEOs are published and how these are disseminated among stakeholders)

The Programme Educational Objectives (PEOs) are publicized and distributed in printed form at various locations within departments as well as in electronic form on websites and campus software in order to make every stakeholder aware of them. Here are the specifics:

1. Faculty includes the PEOs in their Course file and the same is communicated to the students in the first class of the semester conducted by the concerned faculty.
2. The PEOs are clearly mentioned on the website of the institute.
3. The PEOs are also mentioned at the entrance of the department, Students' Notice Boards, Faculty Notice Boards, HOD's Office, Class rooms and Computer Labs etc.
4. PEOs are available in students login of campus software "Etlab".
5. In addition, PEOs are disseminated through student induction programs, parent-teacher meetings, faculty workshops, student awareness workshops, faculty meetings and alumni interaction.

PEOs s are made accessible to all stakeholders of the programme.

Venue	Details
College Website	<a href="https://sjcetpalai.ac.in/mcahome/">https://sjcetpalai.ac.in/mcahome/</a>
Faculty Room	Room no: 315
Campus Management Software "Etlab"	<a href="https://sjcetpalai.etlab.in/student/">https://sjcetpalai.etlab.in/student/</a>
Computer Lab	Room no: 117
Department Library	Room no: 318
Class Rooms	Room No. 307,310
Tutorials Rooms	Room No. 308,311
Seminar Hall	Room No. 309
HoD Room	Room no: 316
Course Diary	Printed copy of PEO statements kept in the subject files of individual faculty. It can also be downloaded from ETLab software.
Conference room	Room no: 317
Staff Room	Room No. 315
Newsletter	Printed

Table 1.4: Department PEO Publication details

1.2.3 List the stakeholders of the programme (1)

(List stakeholders of the programme under consideration for accreditation and articulate their relevance)

Institute Marks : 1.00

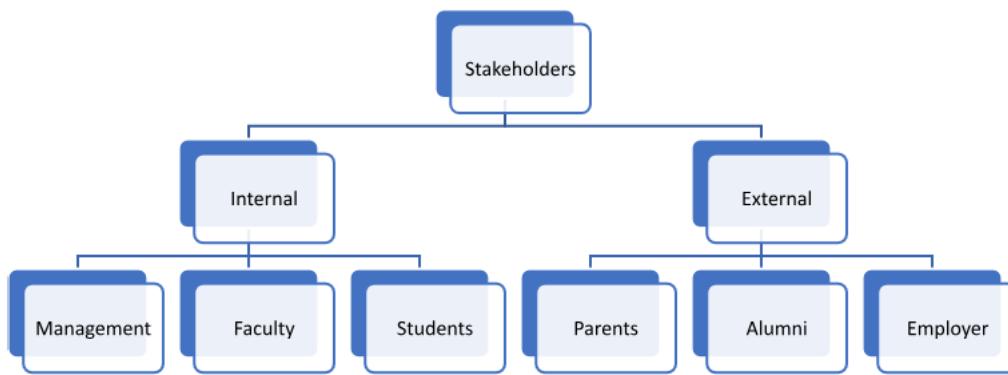


Fig 1.2: List of stakeholders

**Management:** Leadership and administrators overseeing the MCA program.**Faculty:** Professors, instructors, and teaching staff involved in the MCA program.**Students:** Current MCA students enrolled in the program.**Parents:** Parents/Guardians of MCA students who have an interest in their academic progress.**Alumni:** Graduates of the MCA program.**Employers:** Companies and organizations that hire MCA graduates.

These stakeholders collectively contribute to the success, development, and impact of the MCA program. Effective engagement and collaboration with each group are essential for program excellence.

1.2.4 State the process for establishing the PEOs (3)

Institute Marks : 3.00

(Describe the process that periodically documents and demonstrates that the PEOs are based on the needs of the programme's various stakeholders.)

#### **The Programme Educational Objectives (PEOs) of the department are defined by the following process:**

Step 1: The Vision and Mission statements of the institute and the department, the inputs from the stakeholders and Graduate Attributes are consolidated by the DQAC and prepare a draft copy of PEOs of the department.

Step 2: Department Quality Assurance committee considers all the inputs from step 1, formulate the final draft and submit it to the Department Advisory Committee for review.

Step 3: If satisfied, the Department Advisory Committee forwards the final draft to the Head of the Institution for Approval. If not satisfied, the process repeats from Step 1.

Step 4: After the final approval, the PEOs of the Department are disseminated to the stakeholders of the programme.

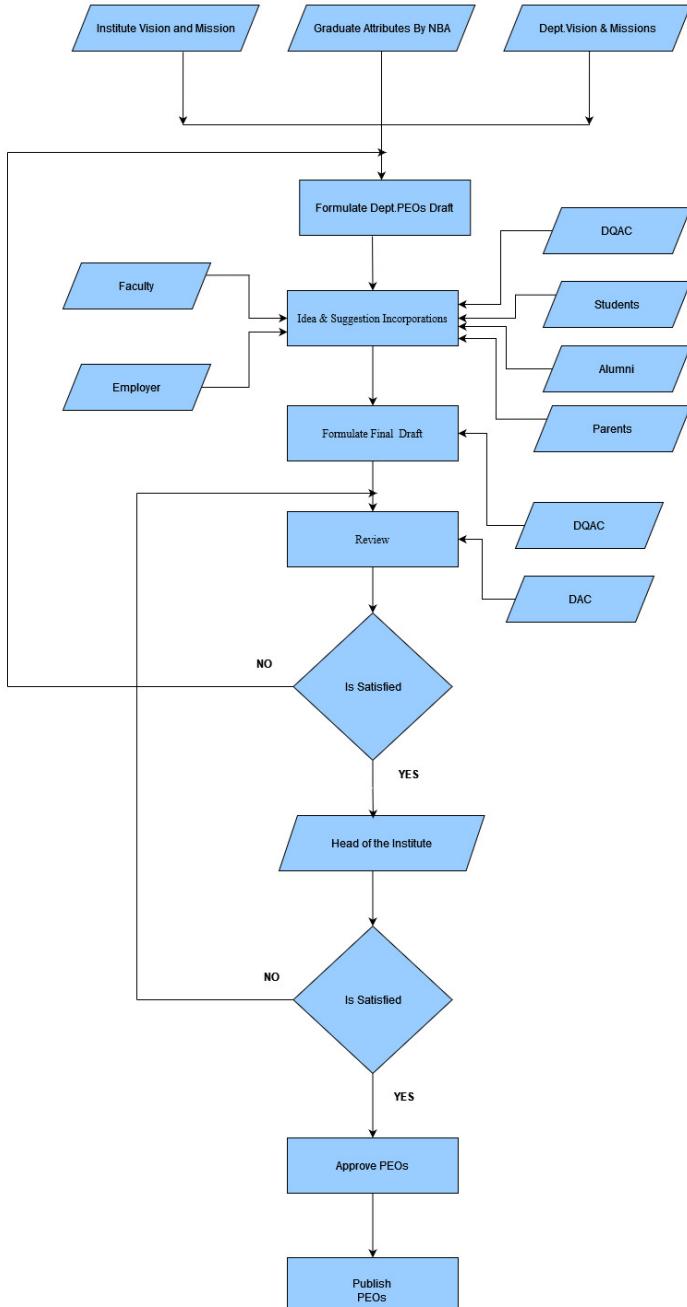


Fig 1.3: Department PEO formation process

<b>Process for Aligning PEOs with Stakeholder Needs</b>	The process of periodically documenting and demonstrating that Program Educational Objectives (PEOs) are aligned with the needs of the programs various stakeholders involves systematic assessment, feedback collection, and continuous improvement. Heres a detailed description of the process.
Establish a Review Schedule	Define a regular review schedule, typically conducted at predetermined intervals (e.g., annually or biennially), to assess the alignment of Program Educational Objectives (PEOs) with the needs of stakeholders.
Identify Stakeholders	Clearly identify and categorize the programs stakeholders, including students, faculty, employers, alumni, and any other relevant groups. Understanding their perspectives is crucial for assessing PEO alignment.
Collect Stakeholder Feedback	Develop surveys, interviews, or other feedback mechanisms to systematically collect input from stakeholders. These tools should be designed to elicit feedback on the relevance, effectiveness, and alignment of the PEOs with their expectations and needs.
Analyze Feedback	Review and analyze the collected feedback to identify patterns, common themes, and specific suggestions from stakeholders. Look for areas where PEOs may need adjustment or enhancement to better meet the needs of the stakeholders.
Assess External Factors	Consider external factors such as industry trends, technological advancements, and changes in societal needs. This assessment ensures that PEOs remain relevant and responsive to broader contextual changes.
Conduct Program Assessment	Evaluate the programs curriculum, teaching methodologies, and resources to determine how well they align with the identified needs and expectations of stakeholders. Identify areas where adjustments may be necessary.
Review PEOs	Revisit and review the existing PEOs in light of the collected feedback, external factors, and program assessment results. Assess whether the PEOs adequately reflect the current and future needs of stakeholders.
Update PEOs as Needed	Modify and update the PEOs based on the analysis of stakeholder feedback, program assessment, and changes in external factors. Ensure that the revised PEOs align with the evolving expectations of stakeholders.

Communicate Changes	Clearly communicate any updates or changes made to the PEOs to all relevant stakeholders. Transparency in the process fosters understanding and ownership of the programs goals.
Implement Changes	Integrate the revised PEOs into the programs curriculum, assessment strategies, and other relevant components. Ensure that faculty and students are aware of and aligned with the updated objectives.
Monitor Progress	Establish metrics and key performance indicators to monitor the progress of the program in achieving the revised PEOs. Regularly assess and adjust strategies based on ongoing feedback and outcomes.
Repeat the Process	Establish a continuous improvement loop by repeating the entire process periodically. This ensures that PEOs remain dynamic and responsive to the evolving needs of stakeholders over time.

By following this systematic and iterative process, the MCA program can demonstrate a commitment to continuous improvement, ensuring that its PEOs effectively address the needs and expectations of various stakeholders.

#### 1.2.5 Establish consistency of the PEOs with the Mission of the institute (4)

Institute Marks : 4.00

(Describe how the Programme Educational Objectives are consistent with the Mission of the department.)

PEOs/Mission correlation	M1. Provide quality education in Computer Applications and bridge the gap between academia and industry.	M2. Promoting innovation research and leadership in areas relevant to the socio-economic progress of the country.	M3. Develop intellectual curiosity and a commitment to lifelong learning in students, with societal and environmental concerns.
PEO1 : Career Progression	3(High)	3(High)	3(High)
PEO2 : Professional Recognition and Effective Communication	3(High)	2(Medium)	2(Medium)
PEO3: Life-long Professional Development	3(High)	3(High)	3(High)

Table 1.5: Department PEO-Mission correlation

The PEOs and Missions of the department are aligned with each other in a consistent manner eventually leading to the achievement of the department goals and empowering the stakeholders.

The goals are achieved with the help of the following entities:

Achieving Program Educational Objectives (PEOs) typically involves a combination of strategic elements, resources, and collaborative efforts. PEOs are accomplished through various key factors:

#### **Curriculum Design and Development:**

Description: A well-designed curriculum is fundamental to achieving PEOs. Add-on courses are provided for achieving the PEOs.

Role: It provides the necessary knowledge, skills, and experiences that align with the programs objectives.

#### **Teaching and Instruction:**

Description: Effective teaching methods and instructional strategies are crucial.

Role: Engaged and skilled faculty facilitate the learning experiences required to meet PEOs.

#### **Assessment and Evaluation Practices:**

Description: Regular assessment of student performance and program outcomes.

Role: Evaluation ensures that students are progressing toward achieving the specified objectives.

#### **Co-curricular and Extracurricular Activities:**

Description: Involvement in activities beyond the classroom, such as projects, competitions, and industry collaborations.

Role: These activities enhance practical skills, teamwork, and application of knowledge.

#### **Industry Internships and Placements:**

Description: Practical exposure through internships and placements.

Role: Real-world experience helps students apply theoretical knowledge, contributing to career readiness.

#### **Research Opportunities:**

Description: Participation in research projects and activities.

Role: Involvement in research fosters critical thinking, innovation, and a deeper understanding of the subject matter.

#### **Professional Development Programs:**

Description: Workshops, seminars, and training sessions for skill enhancement.

Role: Continuous professional development ensures graduates remain updated and relevant in their fields.

#### **Effective Mentorship and Advising:**

Description: Guidance and mentorship from faculty and industry professionals.

Role: Personalized support aids students in setting and achieving career and academic goals.

#### **Communication and Soft Skills Training:**

Description: Training programs focusing on effective communication and soft skills.

Role: Improved communication skills contribute to successful teamwork, leadership, and professional recognition.

#### **Alumni Engagement:**

Description: Involvement of alumni in mentoring, networking, and sharing experiences.

Role: Alumni contributions provide insights into the industry and help current students understand the practical application of their education.

#### **Continuous Feedback and Improvement Processes:**

Description: Regular feedback mechanisms from stakeholders.

Role: Feedback helps identify areas for improvement, ensuring the program remains responsive to the evolving needs of students and industry.

#### **Strategic Partnerships with Industry:**

Description: Collaborations with industry partners for joint initiatives.

Role: Industry partnerships provide opportunities for real-world exposure, internships, and a curriculum that aligns with industry demands.

PEOs are not achieved by a single factor but through a holistic and integrated approach that combines educational strategies, practical experiences, and engagement with stakeholders to prepare graduates for successful careers and lifelong learning.

Factors for Achieving PEOs	Description
CurriculumDesign (M1)	A well-designed curriculum aligned with industry needs, technological advancements, and program goals.
TeachingMethodologies (M1,M2,M3)	Innovative and effective teaching practices that engage students in both theoretical and practical learning.
Assessment Strategies (M3)	Robust formative and summative assessments measuring knowledge and skill acquisition.
Industry Collaboration (M1)	Collaboration with industry for internships, projects, and guest lectures to provide real-world exposure.
FacultyDevelopment (M2,M3)	Continuous professional development for faculty to stay updated on the latest trends and teaching methodologies.
Student Engagement (M2)	Active involvement in extracurricular activities, research projects, and industry interactions.
Ethics and Professionalism Integration(M3)	Emphasis on ethical behavior and professionalism in the curriculum.
EffectiveCommunication Skills (M1,M2)	Programs focusing on enhancing written and verbal communication skills.

Table 1.6: Factors for Achieving PEOs

### **1.3 Attainment of Programme Educational Objectives (25)**

1.3.1 Justify the academic factors involved in achievement of the PEOs (15)

(Describe the broad curricular components that contribute towards the attainment of the Programme Educational Objectives)

The academic factors mentioned play a crucial role in the achievement of Program Educational Objectives (PEOs) by contributing to the holistic development & justification for how each of these factors significantly supports the attainment of PEOs:

SI.	Academic factors involved in achievement of the PEOs	Justifications
1	Curriculum and Syllabi	<p>The prescribed curriculum ensures that students are exposed to a well-structured set of courses covering fundamental and advanced concepts in computer applications. A curriculum aligned with industry standards and technological advancements prepares students for real-world challenges.</p>
2	Assignments/Tutorials:	<p>Assignments and tutorials serve as practical exercises that reinforce theoretical knowledge. They encourage students to apply what they have learned in class, promoting a deeper understanding of the subject matter and fostering problem-solving skills.</p>
3	Laboratories/Practical:	<p>Practical classes complement theoretical concepts by providing hands-on experience. This practical application helps students bridge the gap between theory and practice, enhancing their ability to implement what they have learned in a concrete manner.</p>
4	Research:	<p>Faculty engagement in research projects introduces students to cutting-edge technologies and encourages a culture of continuous learning. Research-oriented activities contribute to the development of critical thinking skills and expose students to the latest trends in the field.</p>
5	Industry Interactions and Visits	<p>Industry interactions and visits connect students with real-world applications of their academic knowledge. Exposure to industry practices and discussions with professionals help students understand the practical implications of their studies, aligning with PEOs related to professional competence and adaptability.</p>
6	Project Work	<p>Assigning projects fosters creativity, teamwork, and practical problem-solving skills. Project work encourages students to explore innovative solutions and apply their technical knowledge to real-world scenarios, contributing to PEOs related to leadership and professional competence.</p>
7	Invited Talks, Faculty Development Programs, Seminars & Workshops	<p>Professional interactions, guest lectures, and development programs expose students to diverse perspectives and industry insights. These activities contribute to leadership development, effective communication skills, and awareness of current industry trends.</p>
8	Quiz, Online Aptitude Tests & Internal Exams	<p>Regular assessments, both online and offline, evaluate students' understanding of the subjects. These assessments contribute to PEOs by ensuring that students acquire the necessary knowledge and skills to excel in their academic and professional pursuits.</p>

9	Student Feedback	Continuous feedback from students helps in evaluating the effectiveness of the curriculum and teaching methods. This feedback loop supports the ongoing refinement of the academic approach to better align with the achievement of PEOs.
10	Skill-Enhancement Sessions	Skill development courses enhance students practical skills, making them more employable and industry-ready. These sessions contribute to the development of skills vital for professional competence and leadership.
11	Remedial Classes	Innovative teaching techniques and remedial classes cater to diverse learning needs, ensuring that all students have the opportunity to grasp fundamental concepts. This inclusive approach supports PEOs related to continuous learning and adaptability.

In summary, these academic factors collectively contribute to the comprehensive development of students, aligning with the Program Educational Objectives and preparing them for the field of computer applications.

#### Detailed Mapping of courses with PEOs

Sl	COURSE CODE	COURSE	PEO1	PEO2	PEO3
1	20MCA101	Mathematical Foundations for Computing	3	1	2
2	20MCA102	Advanced Database Management Systems	3	2	3
3	20MCA103	Digital Fundamentals & Computer Architecture	3	2	3
4	20MCA104	Advanced Computer Networks	3	2	3
5	20MCA105	Advanced Data Structures	3	2	3
6	20MCA107	Advanced Software Engineering	3	2	3
7	20MCA131	Programming Lab	3	2	3
8	20MCA132	Object Oriented Programming Lab	3	2	3
9	20MCA133	Web Programming Lab	3	2	3
10	20MCA134	Advanced DBMS Lab	3	2	3
11	20MCA135	Data Structures Lab	3	2	3
12	20MCA136	Networking & System Administration Lab	3	2	3
13	20MCA172	Advanced Operating Systems	3	2	3
14	20MCA192	IPR and Cyber Laws	2	3	3
15	20MCA192	Business Management	2	3	3
16	20MCA201	Data Science & Machine Learning	3	2	3
17	20MCA203	Design & Analysis of Algorithms	3	2	3
18	20MCA241	Data Science Lab	3	2	3

19	20MCA242	Comprehensive Viva	3	3	3
20	20MCA243	Mobile Application Development Lab	3	2	3
21	20MCA244	Seminar	3	3	3
22	20MCA245	Mini Project	3	3	3
23	20MCA246	Main Project	3	3	3
24	20MCA263	Cyber Security & Cryptography	3	2	3
25	20MCA283	Deep Learning	3	2	3
26	20MCA283	Bio informatics	3	2	3
27	20MCANC1	Entrepreneurship & Innovations in Technology	3	3	3
28	20MCANC2	Industrial Readiness Training	3	3	3
29	20MCANC3	Domain Expertise Workshops	3	3	3

Table 1.7: Course - PEO mapping

Justifications for PEO mapping

1. <b>Mathematical Foundations for Computing (20MCA101)</b>	<p>PEOs: PEO 1 (Professional Competence)</p> <p>Mapping: Develop a strong foundation in mathematical concepts to enhance problem-solving skills and analytical thinking.</p>
2. Advanced Database Management Systems (20MCA102)	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Acquire advanced skills in database management systems to analyze, design, and implement innovative solutions to</p>
3. Digital Fundamentals & Computer Architecture (20MCA103)	<p>PEOs: PEO 1 (Professional Competence)</p> <p>Mapping: Understand digital fundamentals and computer architecture to develop a strong understanding of hardware and sys</p>
4. Advanced Computer Networks (20MCA104)	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Gain expertise in advanced computer networks to ensure proficiency in designing and managing network solutions.</p>
5. Advanced Data Structures (20MCA105)	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Develop advanced data structure skills for efficient algorithm design and problem-solving.</p>
6. Advanced Software Engineering (20MCA107)	<p>PEOs: PEO 2 (Leadership and Communication), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Enhance leadership and communication skills while applying advanced software engineering principles.</p>
7. Programming Lab (20MCA131)	<p>PEOs: PEO 1 (Professional Competence)</p> <p>Mapping: Apply programming skills in a practical environment to reinforce theoretical knowledge.</p>

<b>8. Object-Oriented Programming Lab (20MCA132)</b>	<p>PEOs: PEO 1 (Professional Competence)</p> <p>Mapping: Apply object-oriented programming concepts in a hands-on setting.</p>
<b>9. Web Programming Lab (20MCA133)</b>	<p>PEOs: PEO 1 (Professional Competence)</p> <p>Mapping: Develop practical skills in web programming for effective application development.</p>
<b>10. Advanced DBMS Lab (20MCA134)</b>	<p>PEOs: PEO 1 (Professional Competence)</p> <p>Mapping: Apply advanced database management concepts in practical scenarios.</p>
<b>11. Data Structures Lab (20MCA135)</b>	<p>PEOs: PEO 1 (Professional Competence)</p> <p>Mapping: Implement data structures in a lab setting to reinforce theoretical concepts.</p>
<b>12. Networking &amp; System Administration Lab (20MCA136)</b>	<p>PEOs: PEO 1 (Professional Competence)</p> <p>Mapping: Apply networking and system administration skills for practical implementation.</p>
<b>13. Advanced Operating Systems (20MCA172)</b>	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Understand and apply advanced concepts in operating systems to enhance professional competence and adaptability.</p>
<b>14. IPR and Cyber Laws (20MCA192)</b>	<p>PEOs: PEO 2 (Leadership and Communication), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Develop leadership skills and an understanding of legal aspects related to technology, promoting continuous learning.</p>
<b>15. Business Management (20MCA192)</b>	<p>PEOs: PEO 2 (Leadership and Communication)</p> <p>Mapping: Gain insights into business management for effective communication and leadership in professional settings.</p>
<b>16. Data Science &amp; Machine Learning (20MCA201)</b>	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Acquire skills in data science and machine learning to stay updated with industry trends and enhance professional competence.</p>
<b>17. Design &amp; Analysis of Algorithms (20MCA203)</b>	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Develop proficiency in designing and analyzing algorithms to enhance problem-solving skills and continuous learning.</p>
<b>18. Data Science Lab (20MCA241)</b>	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Apply data science concepts in practical scenarios for hands-on experience and continuous learning.</p>
<b>19. Comprehensive Viva (20MCA242)</b>	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Demonstrate comprehensive knowledge and adaptability through oral assessments.</p>

20. Mobile Application Development Lab (20MCA243)	<p>PEOs: PEO 1 (Professional Competence)</p> <p>Mapping: Develop practical skills in mobile application development for professional competence.</p>
21. Seminar (20MCA244)	<p>PEOs: PEO 2 (Leadership and Communication), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Enhance communication and leadership skills through seminar presentations.</p>
22. Mini Project (20MCA245)	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Apply theoretical knowledge in a practical setting to enhance professional competence.</p>
23. Main Project (20MCA246)	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Demonstrate advanced skills and continuous learning through the completion of a comprehensive main project.</p>
24. Cyber Security & Cryptography (20MCA263)	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Acquire skills in cybersecurity and cryptography for enhanced professional competence and adaptability.</p>
25. Deep Learning (20MCA283)	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p> <p>Mapping: Develop expertise in deep learning for advanced problem-solving and continuous learning.</p>
26. Bioinformatics (20MCA283)	<p>PEOs: PEO 1 (Professional Competence), PEO 3 (Continuous Learning and Adaptability)</p>

### Mapping: Apply computational techniques in bioinformatics for enhanced professional competence and adaptability.

1.3.2 Explain how administrative system helps in ensuring the Achievement of the PEOs (10)

(Describe the committees and their functions, working process and related regulations)

In:

Our administrative system plays a crucial role in ensuring the achievement of Program Educational Objectives (PEOs) in our educational institution. The administration encompasses various processes, policies, and practices that facilitate the effective management and governance of academic programs. Here's how our administrative system contributes to the fulfillment of PEOs:

Curriculum Review and Approval	<p><b>Role:</b> The administrative system oversees the design of add-on courses, review, and approval of the curriculum and academic schedule.</p> <p><b>Contribution:</b> Ensures that the curriculum is aligned with the PEOs and department goals, and that it includes the necessary courses and components to achieve the specified PEOs.</p>
Faculty Recruitment and Development	<p><b>Role:</b> Manages the recruitment and professional development of faculty members.</p> <p><b>Contribution:</b> Ensures that the faculty possesses the necessary expertise and qualifications to deliver the curriculum effectively, contributing to the achievement of PEOs.</p>
Resource Allocation	<p><b>Role:</b> Manages the allocation of resources, including infrastructure, laboratories, and technology.</p> <p><b>Contribution:</b> Ensures that students have access to the necessary resources for practical learning experiences, supporting the attainment of PEOs related to hands-on skills and application of knowledge.</p>
Assessment and Evaluation Practices	<p><b>Role:</b> Implements assessment and evaluation practices for both students and faculty.</p> <p><b>Contribution:</b> Facilitates the measurement of student learning outcomes, helping identify areas for improvement in the curriculum and teaching methods to better align with PEOs.</p>
Accreditation and Quality Assurance	<p><b>Role:</b> Manages accreditation processes and quality assurance initiatives like academic auditing.</p> <p><b>Contribution:</b> Ensures that the academic programs meet national and international standards, validating the credibility of the institution and enhancing the achievement of PEOs.</p>
Student Support Services	<p><b>Role:</b> Provides support services such as counseling, career guidance, and academic advising.</p> <p><b>Contribution:</b> Supports students in understanding and working toward achieving PEOs by offering guidance on course selection, internships, and career paths.</p>
Industry Collaboration and Partnerships	<p><b>Role:</b> Establishes and maintains collaborations with industries and other educational institutions.</p>

	<b>Contribution:</b> Facilitates opportunities for students to engage in real-world projects, internships, and industry interactions, contributing to the practical application of knowledge and the achievement of PEOs.
Feedback Mechanisms	<b>Role:</b> Implements systems for collecting and analyzing feedback from various stakeholders, including students and employers. <b>Contribution:</b> Provides valuable insights for continuous improvement, allowing the institution to make data-driven decisions to better align with PEOs.
Documentation and Reporting	<b>Role:</b> Maintains comprehensive records and generates reports on various aspects of the academic program. <b>Contribution:</b> Facilitates evidence-based decision-making and demonstrates compliance with accreditation requirements, ensuring the alignment with PEOs.
Professional Development Opportunities	<b>Role:</b> Provides opportunities for faculty and staff professional development. <b>Contribution:</b> Enhances the competence of faculty, ensuring they stay updated on industry trends and pedagogical advancements, directly impacting the achievement of PEOs.

In summary, our administrative system establishes a framework for efficient program management, quality assurance, and continuous improvement. It ensures that the academic program is structured, faculty is qualified, resources are adequate, and assessment practices are robust—ultimately contributing to the successful achievement of Program Educational Objective:

Smooth working of the department requires constituting various roles at both departmental and Institute level and under the direction of the department head, the departmental heads carry out their responsibilities.

- To provide an ambient environment for promoting teaching and learning.
- To encourage self learning among students.
- To provide pragmatic knowledge to students so as to enable them to be successful in their professional environment.
- To keep records of previous activities / events.

**Various administrative roles are as follows:**

<b>1. Examination In-charge</b>	<p><b>Functions:</b> Ensure the smooth conduction of internal and external examinations. Collaborate with the centralized examination team. Uphold examination integrity and security.</p> <p><b>Working Process:</b> Develop examination schedules and procedures. Coordinate with faculty members for question paper setting and evaluation. Implement and monitor examination regulations.</p> <p><b>Related Regulations:</b> Adherence to the institutions examination policies and guidelines. Compliance with national or regional examination board regulations.</p>
<b>2. Time Table In-charge</b>	<p><b>Functions:</b> Create and maintain records of the timetable for the MCA program. Allocate teaching loads to faculty members. Ensure a balanced and efficient schedule.</p> <p><b>Working Process:</b> Collaborate with department heads to gather faculty availability. Develop a timetable considering class requirements and faculty availability. Regularly update and communicate the timetable.</p> <p><b>Related Regulations:</b> Adherence to academic calendar requirements. Compliance with faculty workload policies.</p>
<b>3. Web Content Management In-charge</b>	<p><b>Functions:</b> Ensure the institutions web portal is updated with accurate and timely information. Provide content related to the MCA program for various publications.</p> <p><b>Working Process:</b> Regularly review and update website content. Coordinate with various departments for relevant information. Monitor and maintain the consistency and quality of information.</p> <p><b>Related Regulations:</b> Compliance with the institutions web content policies. Adherence to copyright and intellectual property regulations.</p>
<b>4. Disciplinary Action Committee</b>	<p><b>Functions:</b> Ensure a ragging-free environment within the institute. Enforce disciplinary measures to maintain a conducive learning atmosphere.</p>

	<p>Address and resolve disciplinary issues among students.</p> <p><b>Working Process:</b></p> <ul style="list-style-type: none"> <li>Investigate reported disciplinary incidents.</li> <li>Conduct hearings and interviews.</li> <li>Implement appropriate disciplinary actions.</li> </ul> <p><b>Related Regulations:</b></p> <ul style="list-style-type: none"> <li>Adherence to anti-ragging policies.</li> <li>Compliance with student conduct and disciplinary regulations.</li> </ul>
<b>5. SMASH (MCA Student Association) Committee</b>	<p><b>Functions:</b></p> <ul style="list-style-type: none"> <li>Explore and encourage hidden talents among MCA students.</li> <li>Organize and promote extracurricular activities and events.</li> <li>Foster a sense of community and collaboration among MCA students.</li> </ul> <p><b>Working Process:</b></p> <ul style="list-style-type: none"> <li>Plan and execute events, competitions, and workshops.</li> <li>Facilitate student participation and engagement.</li> <li>Support and empower student initiatives.</li> </ul> <p><b>Related Regulations:</b></p> <ul style="list-style-type: none"> <li>Adherence to student association guidelines.</li> <li>Compliance with event management and safety regulations.</li> </ul>
<b>6. Alumni In-charge</b>	<p><b>Functions:</b></p> <ul style="list-style-type: none"> <li>Adopt core values of excellence, lifelong relationships, lifelong learning, inclusiveness, and diversity.</li> <li>Engage with alumni for networking and collaboration.</li> <li>Organize alumni events and activities.</li> </ul> <p><b>Working Process:</b></p> <ul style="list-style-type: none"> <li>Maintain an alumni database.</li> <li>Plan and execute alumni reunions, seminars, and networking events.</li> <li>Facilitate communication between alumni and current students.</li> </ul> <p><b>Related Regulations:</b></p> <ul style="list-style-type: none"> <li>Adherence to alumni association guidelines.</li> <li>Compliance with privacy and data protection regulations.</li> </ul>
<b>7. Student Grievance Committee</b>	<p><b>Functions:</b></p> <ul style="list-style-type: none"> <li>Conduct welfare activities for students.</li> <li>Address and resolve general grievances raised by students.</li> <li>Ensure a supportive and responsive environment for student concerns.</li> </ul> <p><b>Working Process:</b></p> <ul style="list-style-type: none"> <li>Receive and document student grievances.</li> <li>Investigate and resolve grievances through a fair and transparent process.</li> <li>Communicate resolutions to students.</li> </ul> <p><b>Related Regulations:</b></p> <ul style="list-style-type: none"> <li>Adherence to the institutions grievance resolution policies.</li> <li>Compliance with student rights and support regulations.</li> </ul>

**These committees/ In-Charges play vital roles in different aspects of the department administration, ensuring the smooth functioning of various processes specific areas of concern. They contribute to creating a positive and conducive environment for both students and faculty members.**

The structure and functional units of our MCA (Master of Computer Applications) department in our educational institution include various components that contribute to the effective administration, teaching, and learning within the department. Below is an outline of the structural and functional units in our department.

### **Structural Units:**

Structural Units:	Responsibilities
<b>Department Head:</b>	<ul style="list-style-type: none"> <li>Provide overall leadership and direction to the department.</li> <li>Coordinate with other departments and administration.</li> </ul>

	Represent the department in administrative matters.
<b>Faculty Members:</b>	Deliver lectures and conduct practical sessions. Guide students in academic and research activities. Engage in professional development and research.
<b>Non-Teaching Staff:</b>	Assist in Lab sessions. Support faculty and students with administrative needs. Assist in organizing events and activities.

**Functional Units**

Functional Units	Functions
<b>Student Affairs Unit</b>	Student admissions and orientation. Extracurricular activity coordination. Student welfare and counseling.
<b>Research and Development Unit</b>	Encouraging and supporting faculty research. Provide direction and assistance for department research centre operations. Organizing research seminars and conferences. Integrating research findings into the curriculum.
<b>Examination Unit</b>	Conducting internal and external examinations. Ensuring examination integrity and security. Handling result processing and publication.
<b>Quality Assurance Unit</b>	Ensuring compliance with accreditation standards. Conducting internal and external quality assessments. Implementing continuous improvement initiatives.
<b>Web Content Management Unit</b>	Managing and updating the departments web portal. Providing content for publications and newsletters. Promoting the department through online platforms.
<b>Time Table Unit</b>	Developing and maintaining the timetable. Allocating teaching loads to faculty members. Ensuring a balanced and efficient schedule.
<b>Disciplinary Action Unit</b>	Ensuring a disciplined environment within the department. Handling disciplinary issues among students. Implementing and enforcing disciplinary measures.
<b>Alumni Relations Unit</b>	Engaging with alumni for networking and collaboration. Organizing alumni events and activities. Maintaining communication with former students.
<b>Student Grievance Unit</b>	Handling and resolving student grievances. Conducting welfare activities for students. Promoting a supportive environment for student concerns.
<b>SMASH (MCA Student Association) Unit</b>	Organizing and promoting extracurricular activities. Fostering community and collaboration among MCA students. Discovering and showcasing hidden talents.

**Collaboration Units:**

	<b>Functions:</b> Establishing partnerships with industries. Facilitating internships and placements for students. Organizing industry interaction events.
<b>Industry Collaboration and Placement Unit:</b>	

These units work in synergy to create a dynamic and supportive environment for both faculty and students within the department.

**1.4 Assessment of the attainment of Programme Educational Objectives (30)****1.4.1 Indicate tools and processes used in assessment of the attainment of the PEOs (5)**

Describe the assessment process that periodically documents and demonstrates the degree to which the Programme Educational Objectives are attained. Also, include  
 a) Listing and description of the assessment processes used to gather the data upon which the evaluation of each programme educational objective is based. Examples committee meetings, or other processes that are relevant and appropriate to the programme;  
 b) The frequency with which these assessment processes are carried out.

a) We are using Alumni Tracking and Employability Data for the assessment of the attainment of PEOs of our MCA Programme.

**Description:** Alumni tracking is a systematic process of monitoring and collecting data on the career trajectories of graduates from a specific academic program. This undertake after completing the program. The purpose is to gain valuable insights into the success and achievements of alumni in the workforce.

**Application to PEOs:** Alumni tracking serves as a powerful tool for assessing the attainment of Program Educational Objectives (PEOs) by providing real-world evid

**1.Demonstrating Professional Competence:**

**How it Works:** Tracking alumni employment and job roles provides evidence of their professional competence and the practical application of the knowledge and skills learned.

**Application to PEOs:** Alumni success in their chosen professions serves as a direct indicator of the program's effectiveness in preparing graduates with the necessary skills.

## 2. Validating Career Readiness:

**How it Works:** Data on alumni career paths, including the industries they enter and the roles they assume, help validate the program's effectiveness in making graduates employable.

**Application to PEOs:** By aligning alumni achievements with the program's career readiness objectives, we can gauge the extent to which PEOs related to professional development are met.

## 3. Assessing Lifelong Learning and Continued Education:

**How it Works:** Tracking alumni engagement in further studies, certifications, or professional development activities post-graduation provides insights into their commitment to lifelong learning.

**Application to PEOs:** PEOs often include goals related to fostering a commitment to continuous learning. Alumni pursuing additional education or certifications indicate their desire to stay updated in their field.

## 4. Informing Program Improvements:

**How it Works:** Analyzing alumni feedback and experiences can identify areas of strength and areas for improvement in the program.

**Application to PEOs:** By understanding how alumni perceive the program's impact on their careers, we can refine and enhance the curriculum, teaching methods, and support services offered.

In summary, alumni tracking serves as a dynamic and tangible method for assessing the long-term impact of our academic program. It provides institutions with actionable insights to inform program improvements.

### Evaluation Method

#### Alumni Survey :

Conduct a comprehensive alumni survey together to gather feedback on various aspects related to PEOs, including employment status, pursuit of higher studies, and entrepreneurship.

Here's a breakdown of how this evaluation process works:

#### Ranking Scale:

Ranking Scale	Percentage of students obtained the evaluation parameter
3	$\geq 60$
2	$< 60 \text{ and } \geq 50$
1	$< 50 \text{ and } \geq 40$
0	$< 40$

#### 1. Evaluation Criteria for PEO 1:

Evaluation criteria	Weightage
Employed Graduates	75%
Higher Studies Pursued Graduates	15%
Entrepreneurship Engaged Graduates	10%

Calculation of Weighted Scores:

- For each factor (Employment, Higher Studies, Entrepreneurship), calculate the weighted score based on the ranking scale and weightage.
- Sum up the weighted scores for all factors to obtain the overall score for PEO 1.

#### 2. Evaluation Criteria for PEO 2:

The mark split-up for the two alumni survey questions contributing equally to the attainment of PEO 2.

#### 3. Evaluation Criteria for PEO 3:

The mark split-up for the two alumni survey questions contributing equally to the attainment of PEO 3.

Interpretation on PEO attainment:

- Higher overall scores indicate a higher level of attainment of PEOs.
- The ranking scale provides a nuanced assessment, considering the distribution of graduates across different achievement levels.

### Continuous Improvement:

- Regularly analyze the assessment results to identify areas for improvement.
- Use feedback from the alumni survey to inform adjustments to the program, curriculum, or support services.

b) Assessments of the attainment of Program Educational Objectives (PEOs) are conducted annually for the alumni after 2.5 years of their graduation.

1.4.2 Give evidences for the attainment of the PEOs (25)

- a) The expected level of attainment for each of the programme educational objectives;
- b) Summaries of the results of the evaluation processes and an analysis illustrating the extent to which each of the programme educational objectives is being attained;
- c) How the results are documented and maintained.

File Name
<a href="#">Alumni_Survey_form</a>
<a href="#">Alumni_Survey_Sample_1</a>
<a href="#">AlumniSurvey_Sample_2</a>

a) The expected level of attainment for each of the programme educational objectives.

PEOs	Expected level of Attainment
PEO1	2.4 out of 3
PEO2	2.4 out of 3
PEO3	2.4 out of 3

Table 1.8: Expected level of PEO attainment

NOTE: These values suggest a strong expectation that students should achieve a high level of proficiency or success (80%) in meeting each of the specified Program

**PEO1:**

Expected Level of Attainment: 2.4 out of 3

**Justification:**

Alignment with Industry Standards: The expected level of attainment is set at 2.4 to signify that graduates are expected to meet a standard of proficiency that align

Application of Foundational Knowledge: PEO1 relates to foundational knowledge and fundamental skills acquired in the program. The expectation is that student

Preparation for Further Education: The set level of attainment indicates that students are well-prepared for further education or advanced studies if they choose to

**PEO2:**

Expected Level of Attainment: 2.4 out of 3

**Justification:**

Critical Thinking and Problem Solving: PEO2 is associated with critical thinking and problem-solving skills. The expected level of attainment at 2.4 suggests a str

Application of Theoretical Concepts: The set expectation reflects the programs focus on ensuring that students can apply theoretical concepts learned in the classro

Preparation for Leadership Roles: Achieving a level of 2.4 indicates that students are expected to be well-prepared for leadership roles, where critical thinking and

**PEO3:**

Expected Level of Attainment: 2.4 out of 3

**Justification:**

Effective Communication and Collaboration: PEO3 is related to effective communication and collaboration skills. The expected level of attainment at 2.4 signifies

Preparation for Teamwork: The set level suggests that graduates are expected to excel in teamwork, an essential skill for success in modern workplaces where coll

Global and Cultural Competence: Achieving a level of 2.4 indicates that the program aims to cultivate graduates who possess global and cultural competence, enabling them to

**b) Analysis of the Survey results**

**Attainment of PEO 1**

Batch	Total Number of students	No. of students Employed	No. of students opted Higher studies	No. of students opted Entrepreneurship

2018-20	47	30	Nil	Nil
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*Table 1.9: Survey analysis of PEO1*

Percentage of students Employed : 63.83 % -> attainment value (a1) 3

Percentage of students doing higher studies : 0 % -> attainment value (a2) 0

Percentage of students who are entrepreneurs : 0 % -> attainment value (a3) 0

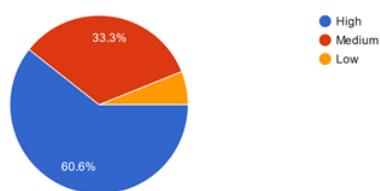
Total attainment of PEO1= a1\*0.75 + a2\*0.15 + a3 \* 0.10

**Total attainment of PEO 1 = 2.25**

#### Attainment of PEO 2

11. How well do you think the program has enhanced your leadership and communication skills, both within a team and in professional settings?

33 responses



18. Have you received recognition from your company or any other reputed bodies ?

33 responses

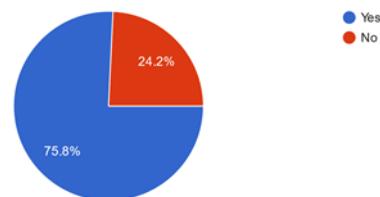


Fig 1.4: PEO2 Survey Results

Question No. 11		
High	Medium	Low
20	11	2
Question No. 18		
Yes	NO	
25	8	

*Table 1.10: Survey analysis of PEO2*

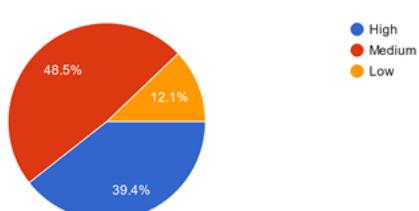
Total attainment of PEO2 ={([(20\*3) + (11\*2) + (2\*1)]/33) \* 0.5} + (3 \* 0.5)}

**PEO2 Attainment= 2.77**

#### Attainment of PEO3

12. In what level has the program fostered your ability to engage in continuous learning and adapt to evolving technologies and industry trends?

33 responses



19. Do you have a research publication or certification in your area of expertise after graduation ?  
33 responses

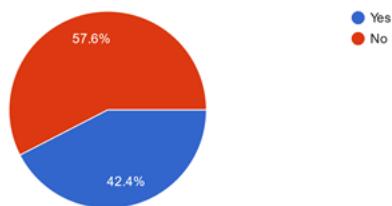


Fig 1.5: PEO3 Survey Results

Question No. 12		
High	Medium	Low
13	16	4
Question No. 19		
Yes	NO	
14	19	

Table 1.11: Survey analysis of PEO3

$$\text{Total attainment of PEO3} = \{((13*3) + (16*2) + (4*1))/33) * 0.5\} + (1 * 0.5)$$

PEO3 Attainment= 1.636

PEO	Target	Attainment	Gap
PEO1	2.4	2.25	0.15
PEO2	2.4	2.77	0
PEO3	2.4	1.636	0.764

Table 1.12: Attainment of each PEOs

PEO Target, Attainment and Gap

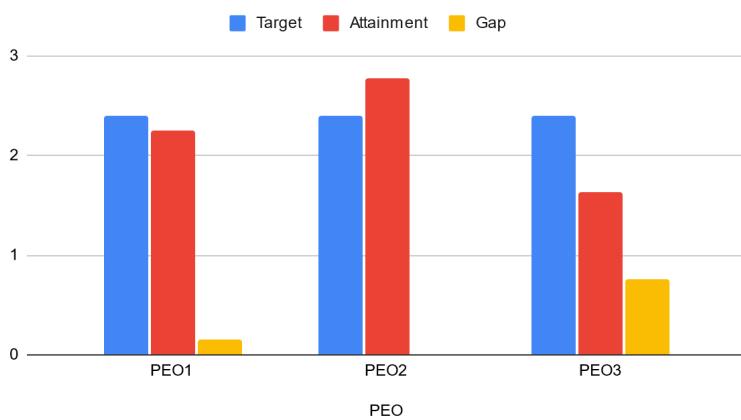


Fig: 1.6 PEO Target, Attainment and Gap

### c) Maintenance and documentation of results

The results of program assessments, examination outcomes, and stakeholder feedback are documented and maintained meticulously through various methods.

#### Examination Results Documentation:

Registers and Softcopy: Exam results are recorded in physical registers for easy access and reference. Additionally, the same data is diligently stored in digital or softc

#### Feedback Storage:

Hard and Softcopy: Feedback from various sources, including students, faculty, and other stakeholders, is systematically stored. Both hard copies and digital versions

#### Placement Record Documentation:

Records of Placements: Placement records, including details about where graduates secure employment, are maintained. This includes information about the companies.

### **PEO Attainment Result**

The PEO accomplishment details are kept up to date at the department in both hardcopy and softcopy formats.

Overall, the use of both physical records and digital documentation ensures redundancy and accessibility. Keeping records in softcopy formats allows for efficient data management. A meticulous documentation approach supports transparency, accountability, and the ability to track trends and improvements over time.

### **1.5 Indicate how results of the assessment of achievement of the PEOs have been used for redefining the PEOs (5)**

**Total Marks : 5.00**

Institute Marks : 5.00

(Articulate with rationale how the results of the evaluation of the PEOs have been used to review/redefine the PEOs)

#### 1. Collecting Assessment Data:

Utilize various assessment methods, including surveys, exams, projects, and other evaluation tools, to collect data on PEO attainment.

#### 2. Aggregating and Analyzing Data:

Aggregate the collected data and analyze it to determine the level of attainment for each PEO. Look for patterns, trends, and areas of strength or improvement.

#### 3. Reviewing Stakeholder Feedback:

Consider feedback from stakeholders, including students, faculty, alumni, employers, and industry experts. This qualitative input provides valuable insights into the practical relevance and effectiveness of the PEOs.

#### 4. Identifying Areas for Improvement:

Identify specific areas where the PEOs may need adjustment based on assessment results and stakeholder feedback. This could include updating language, refining objectives, or adding new elements to address emerging needs.

#### 5. Engaging in Deliberation:

Engage in deliberative discussions with representatives from various stakeholder groups. This could involve meetings, workshops, or forums where feedback is shared and potential changes are discussed.

#### 6. Incorporating Industry Trends:

Consider changes in industry trends, technological advancements, and evolving societal needs. Ensure that PEOs align with current and future requirements in relevant fields.

#### 7. Drafting Updated PEOs:

Based on the assessment results, stakeholder feedback, and industry considerations, draft updated versions of the PEOs that reflect the desired learning outcomes more accurately.

#### 8. Review and Approval Process:

Subject the updated PEOs to a review and approval process involving relevant stakeholders, academic leadership, and any necessary governing bodies.

#### 9. Communication of Changes:

Clearly communicate any changes made to the PEOs to all stakeholders. Provide rationale and context for the modifications to ensure understanding and acceptance.

#### 10. Implementation of Changes:

Integrate the revised PEOs into the programs curriculum, assessment strategies, and other relevant components. Ensure that faculty and students are aware of and aligned with the updated objectives.

#### 11. Monitoring and Continuous Improvement:

Continuously monitor the impact of the updated PEOs on student outcomes. Use ongoing assessment data to inform further refinements and improvements.

This cyclic process ensures that PEOs remain dynamic, responsive to feedback and assessment results, and aligned with the evolving needs of stakeholders and the industry.

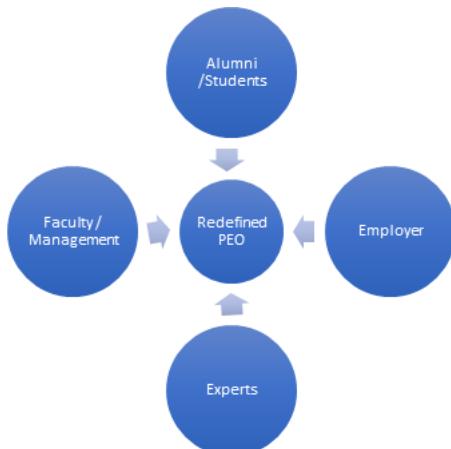


Fig 1.7: Redefining PEOs

**2 Programme Outcomes (150)****Total Marks : 150.00****2.1 Describe and Validation of Course Outcomes and Programme Outcomes (15)****Total Marks**

2.1.1 List the Course Outcomes(COs) and Programme Outcomes (POs) (1)

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(List the course outcomes of the courses in programme curriculum and programme outcomes of the programme under accreditation)

**LIST OF COURSE OUTCOMES (2020 SCHEME)**

Table 2.1: List of Courses and its corresponding course outcomes

SEMESTER	SUBJECT CODE	SUBJECT NAME	CO NO:	CO DESCRIPTION
S1	20MCA101	MATHEMATICAL FOUNDATIONS FOR COMPUTING	1	Understand mathematical reasoning in order to read, comprehend and construct mathematical arguments
			2	Count or enumerate objects and solve counting problems and analyze algorithms
			3	Solve problems in almost every conceivable discipline using graph models
			4	Solve the linear system of equations and calculate the eigen values and eigen vectors of matrices.
			5	Apply the principles of correlation and regression in practical problems.
S1	20MCA103	DIGITAL FUNDAMENTALS & COMPUTER ARCHITECTURE	1	Apply the basics of digital electronics to design and realize simple combinational logic circuits
			2	Apply the digital electronics principles to design sequential logic circuits.
			3	Understand the different design features of computer architecture, five key components of a computer, processor and memory making technologies, addressing modes & instruction formats.
			4	Understand Processor logic design conventions and data path, pipelining and hazards, I/O organization, Interrupts and direct memory access
			5	Understand and different types of memories RAM/ROM/Cache memory, Virtual memory etc. Apply

				the different memory design techniques.
			6	Understand the concept of single board computer like Arduino, Raspberry Pi etc. and apply the same in practical applications
S1	20MCA105	ADVANCED DATA STRUCTURES	1	Remember the Basic Data Structures and understand the Set Data Structure and its implementation.
			2	Understand Advanced Tree Structures for the design of efficient algorithms
			3	Understand Advanced Heap Structures suitable for solving Computational problems involving Optimisation and analysing these data structures using amortised analysis.
			4	Understand Advanced Graph algorithms suitable for solving advanced computational problems
			5	Understand the basic operation of Blockchaining along with the data structures used in it and the challenges in Blockchain data.
S1	20MCA107	ADVANCED SOFTWARE ENGINEERING	1	Get a full view of the Software life cycle
			2	Gain a deep knowledge of Software Planning, Analysis and Design and Software Engineering Models
			3	Have a great comprehension of Coding Practices, Version Control using 'git' and Software Quality
			4	Acquire ample grasp of Design Patterns
			5	Get deeply familiarised with Software Testing and its automation
			6	Start using Agile methodology
			7	Begin to apply CI/CD techniques in S/w development
S1	20MCA131	PROGRAMMING LAB	1	Understands basics of Python Programming language including input/output functions, operators, basic and collection data types
			2	Implement decision making, looping constructs and functions
			3	Design modules and packages - built in and user defined packages
			4	Implement object-oriented programming and exception handling.
			5	Create files and form regular expressions for effective search operations on strings and files.
S1	20MCA133	WEB PROGRAMMING LAB	1	Explore markup languages features and create interactive web pages using them.
			2	Learn and design client-side validation using scripting languages.
			3	Design front end web page and connect to the back-end databases.
			4	Do Client-side & Server-side scripting

			5	Develop Web Applications
S1	20MCA135	DATA STRUCTURES LAB	1	Use Debuggers, Profilers and advanced Compiler options.
			2	Implement the Set and Disjoint Set Data Structures.
			3	Understand the practical aspects of Advanced Tree Structures.
			4	Realise Modern Heap Structures for effectively solving advanced Computational problems.
			5	Implement Advanced Graph algorithms suitable for solving advanced computational problems.
S2	20MCA102	ADVANCED DATABASE MANAGEMENT SYSTEMS	1	Understand the fundamentals of relational database systems including: data models, database architectures and ER features.
			2	Analyze and apply the different normalization techniques.
			3	Assess the basic issues of transaction processing and concurrency control.
			4	Understand the roles that databases play in organizations and familiarize with basic database storage, file organization, database accessing techniques.
			5	Understand the basics of query processing, object-oriented, distributed databases.
			6	Analyze non-relational database systems and structures and XML
S2	20MCA104	ADVANCED COMPUTER NETWORKS	1	Comprehend the terminology and concepts of basic communication model, analyse the protocol layers and design application layer protocols.
			2	Understand and analyse the various transport layer protocols.
			3	Compare and contrast various routing algorithms in the network layer.
			4	Understand and analyse the concepts of link layer and physical layer.
			5	Understand how modern cellular and wireless networks work
S2	20MCA172	ADVANCED OPERATING SYSTEMS	1	Identify synchronization problems in operating systems and issues in distributed systems.
			2	Explain classification of mutual exclusion algorithms and security violations
			3	Explain the design of distributed shared memory and issues in load distribution
			4	Explain design issues and synchronization in multiprocessor systems.
			5	Explain synchronization and concurrency control in database systems.

S2	20MCA192	IPR and CYBER LAWS	1	Explain the fundamentals of IPR and patents
			2	Apply intellectual property related tools such as trademark and copying to real problems
			3	Discuss industrial designs, trade secret and geographic indications
			4	Describe laws governing cyberspace and analyze the role of internet governance in framing policies for internet security
			5	Discuss different types of cybercrimes and penalties under IT act
S2	20MCA182	BUSINESS MANAGEMENT	1	Understand management as a process.
			2	Critically analyse and evaluate management theories and practices
			3	Perform planning and organising for an organisation
			4	Do staffing and related human resource development function
			5	Take proper decisions to get competitive advantage
			6	Understand basic concepts in book keeping and accounting
S2	20MCA132	OBJECT ORIENTED PROGRAMMING LAB	1	Understand object-oriented concepts and design classes and objects to solve problems
			2	Implement arrays and strings.
			3	Implement object-oriented concepts like inheritance, overloading and interfaces
			4	Implement packages, exception handling, multithreading and generic programming. Use java.util package and Collection framework
			5	Develop applications to handle events using applets
			6	Develop Applications using files and networking concepts
S2	20MCA134	ADVANCED DBMS LAB	1	Design and build a simple relational database system and demonstrate competence with the fundamentals tasks involved with modelling, designing and implementing a database.
			2	Apply PL/SQL for processing databases
			3	Comparison between relational and non-relational (NoSQL) databases and the configuration of NoSQL Databases.
			4	Apply CRUD operations and retrieve data in a NoSQL environment.
			5	Understand the basic storage architecture of distributed file systems
			6	Design and deployment of NoSQL databases with real time requirements.
S2	20MCA136	NETWORKING & SYSTEM	1	Install and configure

		ADMINISTRATION LAB	common operating systems.
			2 Perform system administration tasks.
			3 Install and manage servers for web applications.
			4 Write shell scripts required for system administration.
			5 Acquire skill sets required for a DevOps.
S3	20MCA201		<p>Discuss the fundamental concepts of data science and data visualization techniques.</p> <p>1 Explain the basics of machine learning and use lazy learning and probabilistic learning algorithms to solve data science problems.</p> <p>2 Describe decision trees, classification rules &amp; regression methods and how these algorithms can be applied to solve data science problems.</p> <p>3 Solve data science problems using neural networks and support vector machines.</p> <p>4 Discuss clustering using k-means algorithm and evaluate &amp; improve the performance of machine learning classification models.</p>
S3	20MCA203	DESIGN & ANALYSIS OF ALGORITHMS	<p>1 Discuss the basic concepts in computer algorithms and their analysis &amp; design using Divide and Conquer.</p> <p>2 Explain the concepts of Greedy Strategy and Dynamic Programming to use it in solving real world problems.</p> <p>3 Explain the Branch &amp; Bound technique, Backtracking technique and Lower bounds.</p> <p>4 Describe the fundamental concepts of Computational Complexity and Network Flows.</p> <p>5 Discuss the concepts of Approximation and Randomized Algorithms.</p>
S3	20MCA265		<p>1 Understand the basic concepts in cloud computing and OpenStack logical architecture</p> <p>2 Discuss OpenStack cloud controller and common services</p> <p>3 Compare different OpenStack compute service components and storage types</p> <p>4 Describe the OpenStack Networking- Connection types and networking services</p> <p>5 Discuss orchestration, HA and failover in OpenStack</p>
S3	20MCA287		<p>1 Explain the fundamentals of Computational Biology and Bioinformatics.</p> <p>2 Classify various biological databases.</p> <p>3 Use suitable algorithm for Biological Sequence Analysis and make use of database search tools.</p>

			4	Discuss Gene structure and expression of Prokaryotic and Eukaryotes.
			5	Apply data mining & machine learning methods to analyse and visualize biological data.
S3	20MCA263	CYBER SECURITY & CRYPTOGRAPHY	1	Explain various types of security attacks, security mechanisms, security services and classical encryption techniques.
			2	Make use of Symmetric and Asymmetric encryption techniques to solve cryptographic problems.
			3	Describe the concepts of message authentication codes, hash functions and digital signing techniques for ensuring secure transactions.
			4	Discuss security services in Application, Transport and Network layers.
			5	Explain common web application security vulnerabilities and various prevention mechanisms.
S3	20MCA283	DEEP LEARNING	1	Explain the basic concepts of deep learning.
			2	Design neural networks using TensorFlow
			3	Solve real world problems with CNN
			4	Solve real world problems with RNN.
			5	Describe the concepts of GAN
S3	20MCA243	MOBILE APPLICATION DEVELOPMENT LAB	1	Design and develop user interfaces for mobile apps using basic building blocks, UI components and application structure using Emulator
			2	Write simple programs and develop small applications using the concepts of UI design, layouts and preferences
			3	Develop applications with multiple activities using intents, array adapter, exceptions and options menu.
			4	Implement activities with dialogs, spinner, fragments and navigation drawer by applying themes
			5	Develop mobile applications using SQLite.
S3	20MCA245	MINI PROJECT	1	Identify a real-life project which is useful to society / industry
			2	Interact with people to identify the project requirements
			3	Apply suitable development methodology for the development of the product / project
			4	Analyze and design a software product / project
			5	Test the modules at various stages of project development
			6	Build and Integrate different S/W modules
			7	Document and deploy the product / project
S3	20MCA241	DATA SCIENCE LAB	1	Use different python packages to perform numerical calculations, statistical computations and data visualization

			2	Use different packages and frameworks to implement regression and classification algorithms.
			3	Use different packages and frameworks to implement text classification using SVM and clustering using k-means
			4	Implement convolutional neural network algorithm using Kera's framework.
			5	Implement programs for web data mining and natural language processing using NLTK
S4	20MCA242	COMPREHENSIVE VIVA	1	Articulate the concepts in the core courses learned through this programme.
			2	Attend technical interviews with confidence.
			3	Interpret questions and answer them with clarity.
			4	Make use of the concepts learned through this programme in future.
S4	20MCA244	SEMINAR	1	Annotate the ideas presented in technical papers
			2	Comprehend a concept by referring different technical documents
			3	Prepare technical documents
			4	Present a topic before an audience
			5	Interact with the audience
S4	20MCA246	MAIN PROJECT	1	Identify a real-life project which is useful to society / industry
			2	Interact with people to identify the project requirements
			3	Apply suitable development methodology for the development of the product / project
			4	Analyse and design a software product / project
			5	Test the modules at various stages of project development
			6	Build and integrate different software modules
			7	Document and deploy the product / project

#### Programme outcomes (POs)

The Master of Computer Applications (MCA) program is built to make sure that each graduate has the desired competencies, as listed below, after receiving their MCA degree. Programme Outcomes (POs) for MCA are selected and explained as follows in order to achieve the same:

Table 2.2: List of programme outcomes

Graduate Attributes (GA)	Programme outcomes (POs)
Computational Knowledge	Apply knowledge of mathematics, management, computing fundamentals, computing specialization and domain knowledge for the abstraction and conceptualization of computing models from defined problems to various real-life applications for any given requirements.

Problem analysis	Understand and analyze a given real-world problem and propose feasible computing solutions.
Design /Development of Solutions	Analyze customer requirements, create high-level design, and select modern computing tools and techniques and use them with dexterity and integrate it to all computer applications.
Conduct investigations of complex Computing problems	Transform complex business scenarios and contemporary issues to problems, investigate, understand and propose integrated solutions to meet desired needs within realistic constraints such as safety, security and applicability especially following cyber regulations using emerging technologies.
Modern Tool Usage	Develop the expertise in using modern hardware and software tools which can applied in professional career consecutively to provide innovative software solutions.
Professional Ethics	Recognize the social, professional, cultural and ethical issues involved in the use of computer technology and give them due consideration in developing software systems as broadly educated, expressive, ethical and responsible citizens with proven expertise to solve computer problems for the betterment of the society.
Life-long Learning	Recognize the importance of goal setting and to recognize the need for life-long learning for a continued career development and progress as a computer professional.
Project management and finance	Master fundamental project management skills, concepts and techniques, set attainable objectives and ensure positive results, meeting scope, time and budget constraints.
Communication Efficacy	Communicate technical information effectively, both orally and in writing such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
Societal and Environmental Concern	An ability to devise and conduct experiments, interpret data and provide well informed conclusions for problems which will have high social and environmental impact.
Individual and Team Work	Work collaboratively as a member or leader in multidisciplinary teams with positive attitude to demonstrate computing and management skills and acquire good conflict resolutions skills.
Innovation and Entrepreneurship	Develop the talent to articulate innovative ideas and implement them using the acquired expertise and apply the inherent skills with absolute focus to function as an successful entrepreneur.

#### 2.1.2 State how and where the POs are published and disseminated (1)

(Describe in which media, e.g. websites, curricula books, the POs are published and how these are disseminated among stakeholders)

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The program outcomes are publicized and distributed in print form at various locations within departments as well as in electronic form on websites and campus software in order to make every stakeholder aware of them. Here are the specifics:

1. Faculty includes the POs in their Course file and the same is communicated to the students in the first class of the semester conducted by the concerned faculty.
2. The POs are clearly mentioned on the website of the institute.
3. The POs are also mentioned at the entrance of the department, Students Notice Boards, Faculty Notice Boards, HOD's Office, Class rooms, Computer Labs etc.
4. Program outcomes are available in student's login of campus software "Etlab".
5. In addition, through student induction programs, parent-teacher meetings, faculty workshops, student awareness workshops, faculty meetings and alumni interaction program outcomes are made accessible to all program stakeholders.

Table 2.3: Details of POs published

Venue	Details
College Website	<a href="https://sjcetpalai.ac.in/mcahome/">https://sjcetpalai.ac.in/mcahome/</a>
Faculty Room	Room no: 315
Campus Management Software "Etlab"	<a href="https://sjcetpalai.etlab.in/student/programoutcome">https://sjcetpalai.etlab.in/student/programoutcome</a>

Computer Lab	Room no: 117
Department Library	Room no: 318
Class Rooms	Room no:307,308,310,311
Tutorials Rooms	Room no: 301,302
HoD Room	Room no: 316
Course Diary	Students are informed of the POs in the first class of the semester by the appropriate faculty, who also put the POs in their subject files. Faculties, HOD, and higher authorities can download the same document from Etlab using their individual logins.
Conference room	Room no: 317
Department Seminar Hall	Room no 309
Research Room	Room no 303

## 2.1.3 Indicate processes employed for defining of the POs (3)

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(Describe the process that periodically documents and demonstrates that the POs are defined in alignment with the graduate attributes prescribed by the NBA)

A well-structured program outcome serves as a guiding beacon, aligning the vision, mission of the department, graduate attributes, and the needs of stakeholders. This comprehensive approach not only nurtures competent professionals but also contributes significantly to the society and industry

Initial draft of the Program outcomes of the MCA Program is formulated by the Department Quality Assurance Cell, taken into account 3 core parameters namely, Vision and Mission of the Department, Graduate Attributes specified by NBA and Program Educational Objectives.

The draft copy of the Program outcomes formulated is disbursed among the main stake holders involved: Students, Parents, Alumni, Industry Experts and Faculty. All these stake holders are urged to provide inputs regarding any missing aspects or modifications that need to be done. The final draft of PO's is then prepared by Department Quality Assurance Cell, taken into account all the valuable suggestions provided by the stake holders.

The final draft of PO's is then submitted before the department advisory committee, which reviews every aspect of the defined PO's. If committee finds any discrepancies regarding the formulated PO's, it is reverted to DQAC, which in turn will rework on the PO formation Consulting all stake holder.

If the department advisory committee is satisfied with the final draft of PO's, it is submitted before the head of the institution for final approval. Once the POs are approved, they are published.

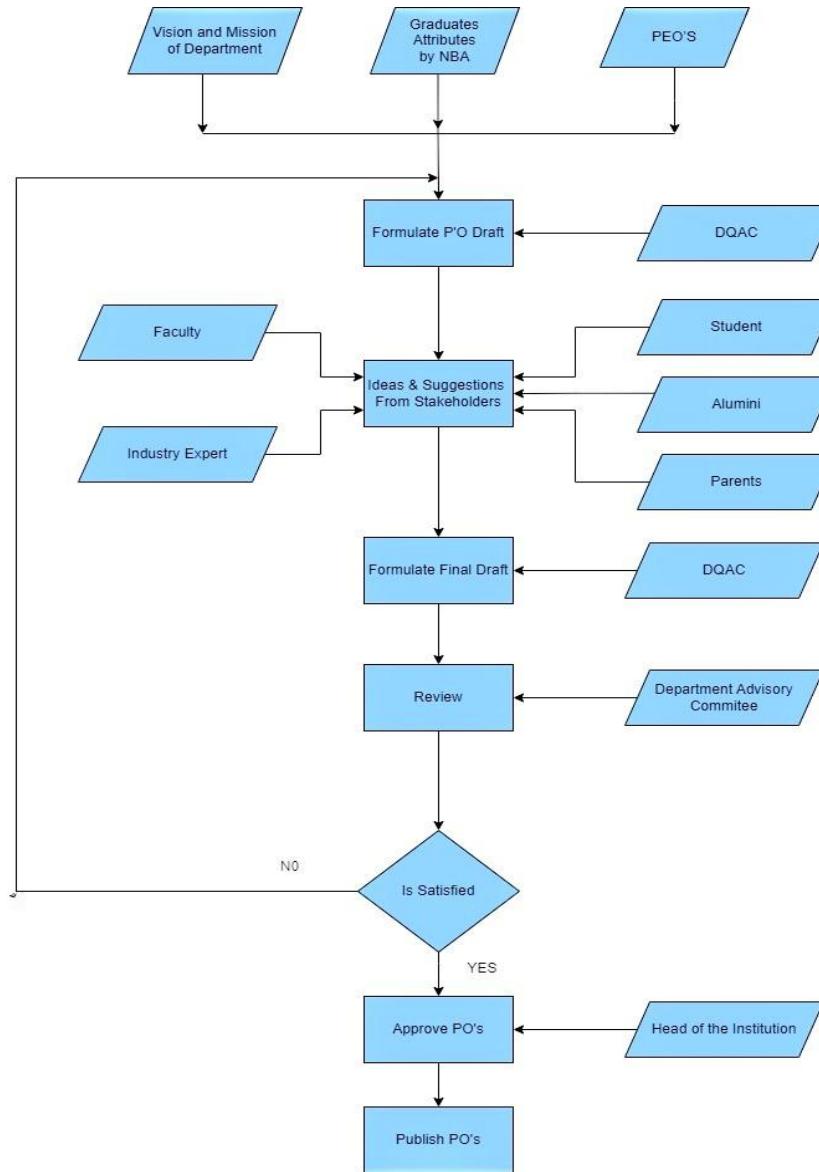


Fig 2.1: PO Formation path

2.1.4 Indicate how the defined POs are aligned to the Graduate Attributes prescribed by the NBA (5)

(Indicate how the POs defined for the programme are aligned with the Graduate Attributes of NBA as articulated in the accreditation manual)

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#### Graduate Attributes (GA) as depicted by National Board of Accreditation

1. Computational Knowledge
2. Problem analysis
3. Design / Development of Solutions
4. Conduct investigations of complex Computing problems
5. Modern Tool Usage
6. Professional Ethics
7. Life-long Learning
8. Project management and finance
9. Communication Efficacy
10. Societal and Environmental Concern
11. Individual and Team Work
12. Innovation and Entrepreneurship

Graduate attributes (GA) and program outcomes (POs) are associated, and it has been discovered that each GA is well coordinated with the defined POs.

Table 2.4: Alignment of Program Outcomes to Graduate Attributes

PO/GA	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	AVG
GA1	3	2	2	2	1		1		1		2	1	1.67
GA2	2	3	3	2	2		2	1	1	1	2	1	1.82

GA3	2	3	3	2	2	1	2	2	1	2	2	1	1.92
GA4	2	2	2	3	2	1	1	1	2		1		1.7
GA5	1	2	2	2	3		2	1					1.86
GA6			1	1		3	1	1		2	1	1	1.38
GA7	1	2	2	1	2	1	3	1		1		1	1.5
GA8		1	2	1	1	1	1	3	2	1	2	1	1.45
GA9	1	1	1	2			2	3		1	1	1	1.5
GA10		1	2	2		2	1	1		3	1	1	1.56
GA11	2	2	2	1		1		2	1	1	3	2	1.7
GA12	1	1	1			1	1	1	1	1	2	3	1.3
AVG	1.67	1.82	1.92	1.73	1.86	1.38	1.5	1.46	1.5	1.5	1.7	1.3	

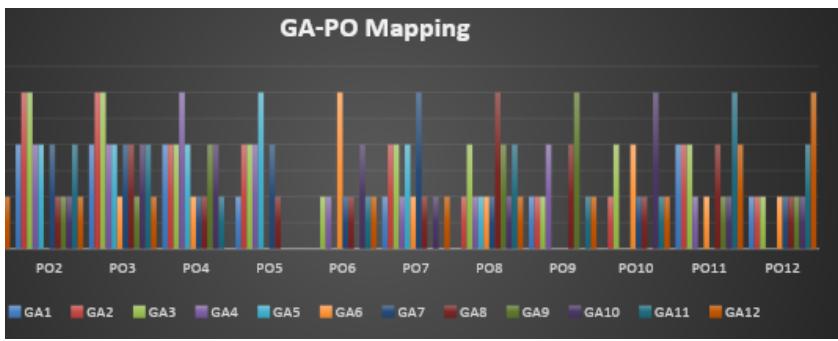


Fig 2.2: Diagrammatic representation of GA-PO Mapping

2.1.5 Establish the correlation between the POs and the PEOs (5)  
 (Explain how the defined POs of the programme correlate with the PEOs)

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Table 2.5: PEO-PO mapping details

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	Computational Knowledge	Problem analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	Professional Ethics	Life-long learning	Project management and finance	Communication Efficacy	Societal and Environmental Concern	Individual and Team Work	Innovation & Entrepreneurshi
PEO1	H	H	M	M	H	H	M	L	M	M	H	L
PEO2	L	L	L	L	L	H	M	H	H	H	H	H
PEO3	M	M	M	L	M	M	H	H	M	H	M	M
AVG	2	2	1.67	1.33	2	2.67	2.33	2.33	2.33	2.67	2.67	2

Scale: H- High (3), M-Medium (2), L- Low (1)

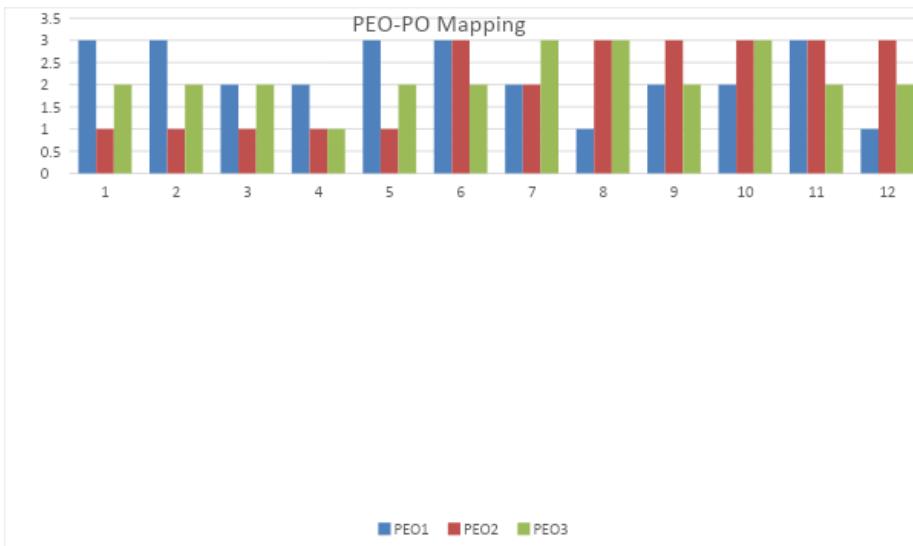


Fig 2.3: Diagrammatic representation of PEO-PO mapping

**2.2 Attainment of Programme Outcomes (30)****Total Marks : 30.00**

## 2.2.1 Illustrate how course outcomes contribute to the POs (10)

Institute Marks : 10.00

(Provide the correlation between the course outcomes and the programme outcomes. The strength of the correlation may also be indicated)

Table 2.6: CO-PO mapping details

CO-PO MAPPING: REGULAR MCA 2 YEAR 2020 SCHEME												
SEMESTER- 1												
20MCA101	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	0	-	3					
CO 2	3	3	3	3	-	-	3					
CO 3	3	3	3	3	-	-	3					
CO 4	3	3	3	3	-	-	3					
CO 5	3	3	3	3	-	-	3					
AVG	3.00	3.00	3.00	3.00			3					
20MCA103	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	1			1					
CO 2	3	3	2	1			1					
CO 3	1	1		1			1					
CO 4	1	1					1					
CO 5	2	2	1	1			1					
CO 6	1	1	2	1	2		2	2	2		2	2
AVG	1.83	1.83	1.75	1.00	2.00		1.17	2.00	2.00		2.00	2.00
20MCA105	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	2		1							
CO 2	2	2	3	2	1		1					
CO 3	2	3	3	2	1		1					
CO 4	3	3	2	1	2		1					
CO 5	3	2	2	2	3		1					
AVG	2.6	2.4	2.4	1.75	1.6		1					
20MCA107	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1		2	2					3			1	1
CO 2		3	3					3				
CO 3				3					3	2	2	
CO 4			3	3								
CO 5				3						2	3	
CO 6				2				2	2		2	3
CO 7				3				1		2		
AVG		2.5	2.67	2.8				2.25	2.5	2	2	2

20MCA131	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	2	1	2							
CO 2	3	3	3	2	2							
CO 3	3	3	3	3	3						1	
CO 4	3	3	3	3	3						1	
CO 5	3	3	3	3	3						1	
AVG	2.8	2.8	2.8	2.4	2.6						1	
20MCA133	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2		3	3				
CO 2	3	3	3	2	2		3	3	1			
CO 3	3	3	3	2	2		3	3				
CO 4	3	3	3	2	2		3	3			2	
CO 5	3	3	3	3	3		3	3			2	2
AVG	3.00	3.00	3.00	2.20	2.20		3.00	3.00	1.00		2.00	2.00
20MCA135	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2				3		1					
CO 2	3	2	2		1							
CO 3	2	2	3	2	1		1					
CO 4	2	3	3	2	1		1					
CO 5	3	3	2	1	2		1					
AVG	2.4	2.5	2.5	1.67	1.6		1					

**SEMESTER- 2**

20MCA102	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1				1				1				
CO 2	3	3	3	2			2	2			2	2
CO 3	1	2	2	2		2					2	2
CO 4					1		1					
CO 5	1			1								
CO 6	1											
AVG	1.5	2.50	2.5	1.5	1	2	1.33	2			2	2
20MCA104	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2		2	2	2		3		2	
CO 2	3	3	2		2	2			3		2	
CO 3	3	3			2	2	2		3		2	
CO 4	3	3				2			3		2	
CO 5	3	3				2			3			
AVG	3	3	2		2	2	2		3		2	
20MCA172	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2			2				1			
CO 2	2	1							1			
CO 3	2	1							1			
CO 4	2	1							1			
CO 5	2	2			1		1		1			
AVG	2.00	1.40			1.50		1		1			
20MCA182	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3							2				
CO 2		3										
CO 3			3									3
CO 4											3	
CO 5					3	2						
CO 6	3							3				
AVG	3	3	3		3	2		2.5			3	3
20MCA192	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	2	1		1						
CO 2	3	3	2	1		1						
CO 3	3	2	1	1								
CO 4	2	2	1			1						
CO 5	2	2	1	1		1						
AVG	2.60	2.20	1.40	1.00		1						
20MCA132	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	2	2	3							
CO 2	3	2	2		3							
CO 3	3	2	2		3							
CO 4	3	2	2		3							
CO 5	3	3	3		3	2			3		3	
CO 6	3	3	3		3	2			3		3	

AVG	2.83	2.33	2.33	2.00	3.00	2.00			3.00		3.00	
20MCA134	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	3	2	2					1	1	
CO 2	2	2	2		1							
CO 3	2	2	2	2						1	1	
CO 4	2	2	3	1	2		1			1	1	1
CO 5	3	2	2			1					1	1
CO 6	2	2	3	1	1			1		1	1	2
AVG	2.33	2.00	2.50	1.50	1.50		1.00	1.00		1.00	1.00	1.33
20MCA136	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1		2		2							
CO 2	1		2									
CO 3			2		2							
CO 4					2							
CO 5	2				2							
AVG	1.33		2.00		2.00							

## SEMESTER- 3

20MCA201	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1	1					3					
CO 2	3	3	3	2			3					
CO 3	3	3	3	2			3					
CO 4	3	3	3	2			3					
CO 5	3	3	3	2			3					
AVG	2.6	2.6	3	2			3					
20MCA203	PO 1	PO	PO	PO								
CO 1	3	3	1	2			2					
CO 2	3	3	1	2			2					
CO 3	3	3	1	2			2					
CO 4	3	3	1	2			2					
CO 5	3	3	1	2			2					
AVG	3.00	3.00	1.00	2.00			2.00					
20MCA263	PO	PO	PO									
CO 1	2	1	1				1					
CO 2	2	2	2	1			1					
CO 3	2	1	1				1					
CO 4	2	1	1			2	1					
CO 5	2	1	1			2	1					
AVG	2.00	1.20	1.20	1.00			2.00	1.00				
20MCA265	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2				3		2					1
CO 2	2				3		2					1
CO 3	2				3		2					1
CO 4	2				3		2					1
CO 5	2				3		2					1
AVG	2.00				3.00		2.00					1.00
20MCA283	PO	PO	PO									
CO 1	2	1	2									
CO 2	3	3	3		3		3					
CO 3	3	3	3		3		3					
CO 4	3	3	3		3		3					
CO 5	2	3			2		2					
AVG	2.60	2.80	3.00		2.75		2.75					
S20MCA287	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	1	1				1					
CO 2	3	3	1				2					
CO 3	3	3	2				2					
CO 4	3	2	1				1					
CO 5	3	3	2		2		2					
AVG	3.00	2.40	1.40		2.00		1.60					
20MCA241	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	1	3	2	3			2		
CO 2	3	3	3	2	3	2	3			2		
CO 3	3	3	3	2	3	2	3			2		
CO 4	3	3	3	2	3	2	3			2		
CO 5	3	3	3	2	3	3	3			2		
AVG	3.00	3.00	3.00	1.80	3.00	2.20	3.00		2.00			
20MCA243	PO	PO 10	PO 11	PO 12								
CO 1	1	2	3	4	5	6	7	8	9			

CO 1	3	3	3	1	3	2	3		2			
CO 2	3	3	3	2	3	2	3		2			
CO 3	3	3	3	2	3	2	3		2			
CO 4	3	3	3	2	3	2	3		2			
CO 5	3	3	3	2	3	3	3		2			
AVG	<b>3.00</b>	<b>3.00</b>	<b>3.00</b>	<b>1.80</b>	<b>3.00</b>	<b>2.20</b>	<b>3.00</b>		<b>2.00</b>			
<b>20MCA245</b>	<b>PO</b>											
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
CO 1	2	3	3	3	1	2	3	3	3	3	3	3
CO 2	2	3	2	3	2	3	2	1	3	2	3	3
CO 3	3	3	3	3	3	1	3	3	1		2	
CO 4	3	3	3	3	3		3	3	1	1	2	
CO 5	3	3	3	3	3		2	3			1	
CO 6	3	3	3	3	3	2	3	3		2	3	3
CO 7	1	1	3	3	3	2	3	3	2	1	2	
AVG	<b>2.43</b>	<b>2.71</b>	<b>2.86</b>	<b>3.00</b>	<b>2.57</b>	<b>2.00</b>	<b>2.71</b>	<b>2.71</b>	<b>2.00</b>	<b>1.80</b>	<b>2.29</b>	<b>3.00</b>
<b>SEMESTER- 4</b>												
<b>20MCA242</b>	<b>PO</b>											
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
CO 1	3	3		2	2		2		3			
CO 2	3	3	1	2	3	2	3		3			
CO 3	1	2				2	2		3			
CO 4	3	2	3	2	2	3	3		2			
AVG	<b>2.50</b>	<b>2.50</b>	<b>2.00</b>	<b>2.00</b>	<b>2.33</b>	<b>2.33</b>	<b>2.50</b>		<b>2.75</b>			
<b>20MCA244</b>	<b>PO</b>											
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
CO 1	2	3	1	3	2		3		3	2		2
CO 2	2	3	1	3	2		3		3	2		2
CO 3	2		1	2	3	2	3		3	2		2
CO 4	2	2			3	3		3		2		
CO 5	2	2			3	3			3		2	
AVG	<b>2.00</b>	<b>2.50</b>	<b>1.00</b>	<b>2.67</b>	<b>2.60</b>	<b>2.67</b>	<b>3.00</b>		<b>3.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>
<b>20MCA246</b>	<b>PO</b>											
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
CO 1	2	3	3	3	1	2	3	3	3	3	3	3
CO 2	2	3	2	3	2	3	2	1	3	2	3	
CO 3	3	3	3	3	3	1	3	3	1		2	
CO 4	3	3	3	3	3		3	3	1	1	2	
CO 5	3	3	3	3	3		2	3			1	
CO 6	3	3	3	3	3		3	3		2	3	3
CO 7	1	1	3	3	3	2	3	3	2	1	2	
AVG	<b>2.43</b>	<b>2.71</b>	<b>2.86</b>	<b>3.00</b>	<b>2.57</b>	<b>2.00</b>	<b>2.71</b>	<b>2.71</b>	<b>2.00</b>	<b>1.80</b>	<b>2.29</b>	<b>3.00</b>

2.2.2 Explain how modes of delivery of courses help in attainment of the POs (5)

Institute Marks : 5.00

(Describe the different course delivery methods/modes (e.g. lecture interspersed with discussion, asynchronous mode of interaction, group discussion, project etc.) used to deliver the courses and justify the effectiveness of these methods for the attainment of the POs. This may be further justified using the indirect assessment methods such as course-end surveys.)

**1.Computational Knowledge:**

a) Online Learning: Allows for interactive simulations, coding exercises, and access to a wide range of online resources, facilitating the development of computational knowledge.

b) Blended Learning: Combines traditional lectures with online resources, providing a comprehensive learning experience.

**2.Problem Analysis:**

a) Case Studies (Online/Blended): Virtual case studies and online discussions can be employed to analyse and solve complex problems.

b) Classroom Discussions (Face-to-Face): Traditional classrooms allow for immediate interaction and discussion, fostering problem-solving skills.

**3.Design/Development of Solutions:**

a) Project-Based Learning (Blended/Experiential): Combines theory and practical applications, allowing students to design and develop solutions to real-world problems.

b) Collaborative Online Tools: Facilitates virtual collaboration on design and development projects.

**4.Conduct Investigations of Complex Computing Problems:**

a) Research Projects (Blended/Online): Students can conduct investigations and research on complex computing problems using online resources and collaborative tools.

**5.Modern Tool Usage:**

a) Online Labs and Simulations: Provide a platform for students to use modern tools and technologies in a virtual environment.

b) Industry Partnerships (Blended/Experiential): Collaborations with industry can expose students to the latest tools and practices.

**6.Professional Ethics:**

a) Online Ethics Modules: Can be integrated into online courses to educate students on professional ethics in the computing field.

b) Guest Lectures (Face-to-Face/Online): Industry professionals can share insights on ethical considerations in computing.

**7.Life-Long Learning:**

a) Online Continuing Education Courses: Facilitate ongoing learning opportunities beyond the traditional classroom setting.

b) Encourage Self-Directed Learning (Blended/Online): Develops a mindset of continuous learning.

**8.Project Management and Finance:**

a) Collaborative Projects (Blended/Experiential): Involve students in projects with budgeting and management aspects.

b) Case Studies (Online/Blended): Explore project management and financial considerations in a virtual context.

**9. Communication Efficacy:**

- a) Online Presentations and Discussions: Enhance written and verbal communication skills through virtual presentations and discussions.
- b) Team Projects (Blended/Experiential): Emphasize effective communication within project teams.

**10. Societal and Environmental Concern:**

- a) Case Studies (Blended/Online): Explore the impact of computing on society and the environment through virtual case studies.
- b) Guest Lectures (Face-to-Face/Online): Experts can discuss the societal and environmental implications of computing.

**11. Individual and Team Work:**

- a) Online and Blended Learning: These modes often incorporate discussion boards, group projects, and collaborative tools, enabling students to work both individually and in teams. They learn how to communicate effectively, coordinate tasks, and collaborate with peers from diverse backgrounds.
- b) Experiential Learning: Participating in real-world projects and internships encourages students to apply both individual expertise and work within a team setting. They gain insights into the dynamics of teamwork in professional environments.

**12. Innovation and Entrepreneurship:**

- a) Project-Based Learning (Blended/Experiential): Students are encouraged to work on projects that involve innovation and entrepreneurial aspects. They may develop new solutions, products, or business plans, fostering innovation and entrepreneurial thinking.
- b) Guest Lectures and Industry Partnerships (Face-to-Face/Online): Bringing in experts and industry professionals to share their experiences and insights can inspire students with real-world examples of innovation and entrepreneurship.
- c) Incubators and Start-up Programs (Blended/Experiential): Some institutions offer incubator programs and start-up accelerators where students can work on their entrepreneurial ideas and innovations under guidance.

In summary, the mode of delivery can be strategically chosen to align with specific program outcomes. A combination of face-to-face, online, and experiential learning can provide a well-rounded educational experience, addressing various aspects of computational education and ensuring that students develop the necessary skills and knowledge to meet the outlined program outcomes.

2.2.3 Indicate the extent to which the laboratory and project course work are contributing towards attainment of the POs (15)

Institute Marks : 15.00

(Describe different types of course assessment and evaluation methods, both direct and indirect, in practice and their relevance towards the attainment of POs.)

Every semester except fourth semester combines both theory and practical subjects. The university's recommended ratio of theory to practical in each semester is listed below.

Table 2.7: Percentage of Theory and practical subjects in each semester

Semester	Percentage of Theory Subjects	Percentage of Practical Subjects
First	57.14%	42.86%
Second	57.14%	42.86%
Third	57.14%	42.86%
Fourth	0	100%

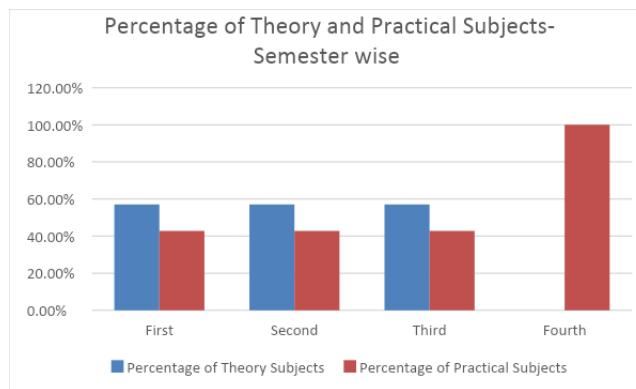


Fig 2.4 Diagrammatic representation of percentage of theory and laboratory courses

Table 2.8 Average CO-PO mapping of Laboratory courses

Name of Laboratory	POs											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
20MCA131_PROGRAMMING LAB	2.8	2.8	2.8	2.4	2.6						1	
20MCA133_WEB PROGRAMMING LAB	3	3	3	2.2	2.2		3	3	1		2	2
20MCA135_DATA STRUCTURES LAB	2.4	2.5	2.5	1.67	1.6		1					
20MCA132_OBJECT ORIENTED PROGRAMMING LAB	2.83	2.33	2.33	2	3	2			3		3	
20MCA134_ADVANCED DBMS LAB	2.33	2	2.5	1.5	1.5		1	1		1	1	1.33

20MCA136_NETWORKING & SYSTEM ADMINISTRATION LAB	1.33		2		2						
20MCA241_DATA SCIENCE LAB	3	3	3	1.8	3	2.2	3		2		
20MCA243_MOBILE APPLICATION DEVELOPMENT LAB	3	3	3	1.8	3	2.2	3		2		
20MCA245_MINI PROJECT	2.43	2.71	2.86	3	2.57	2	2.71	2.71	2	1.8	2.29
20MCA244_SEMINAR	2	2.5	1	2.67	2.6	2.67	3		3	2	2
20MCA246_MAIN PROJECT	2.43	2.71	2.86	3	2.57	2	2.71	2.71	2	1.8	2.29

\*Our well-equipped laboratories with different lab experiments cover almost all the defined POs via different COs in all the Lab courses.

## 2.3 Assessment of the attainment of the Programme Outcomes (100)

Total Marks : 100.00

### 2.3.1 Describe assessment tools and processes used for assessing the attainment of each PO (20)

Institute Marks : 20.00

Describe the assessment process that periodically documents and demonstrates the degree to which the Programme Outcomes are attained. Also, include information on:

- a) Listing and description of the assessment processes used to gather the data upon which the evaluation of each the programme educational objective is based. Examples of data collection processes may include, but are not limited to, specific exam questions, student portfolios, internally developed assessment exams, senior project presentations, nationally-normed exams, oral exams, focus groups, industrial advisory committee;
- b) The frequency with which these assessment processes are carried out.

### a) CO-PO Attainment Calculation

#### 1. Fixing Course Outcomes (COs) and its correlation with Programme Outcomes (POs)

Based on the syllabus prescribed by the APJ Abdul Kalam Technological University (APJ AKTU), faculty prepares five COs and correlates them to 12 POs by assigning numerical values ranging from 1 to 3 in a CO-PO matrix. Point 1 will be assigned if the correlation of the CO to POs is weak and point 3 will be assigned for strong correlation. Point 2 indicates medium correlation to POs. If there is no correlation, no value will be assigned in the CO-PO matrix.

Table 2.9: Sample of CO's

S1	20MCA105	ADVANCED DATA STRUCTURES	1	Remember the Basic Data Structures and understand the Set Data Structure and its implementation.
			2	Understand Advanced Tree Structures for the design of efficient algorithms
			3	Understand Advanced Heap Structures suitable for solving Computational problems involving Optimisation and analysing these data structures using amortised analysis.
			4	Understand Advanced Graph algorithms suitable for solving advanced computational problems
			5	Understand the basic operation of Blockchaining along with the data structures used in it and the challenges in Blockchain data.

Table 2.10 Sample CO-PO Matrix

20MCA105	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	2		1							
CO 2	2	2	3	2	1		1					
CO 3	2	3	3	2	1		1					
CO 4	3	3	2	1	2		1					
CO5	3	2	2	2	3		1					

### 2. CO Attainment

CO attainment can be calculated by Direct and Indirect assessment methods.

#### A. Tools for measuring direct attainment is

**1. Continuous Internal Evaluation (CIE)** which contains 2 Internal Examinations & Assignments

**2. End Semester Examination (ESE)** conducted by the university

Candidate in each semester shall be evaluated by CIE and ESE

Table 2.11 Evaluation ratio for different type of courses

Course	Evaluation ratio
Theory Courses	1: 1.5
Practical Courses	1:1
Mini Project	CIE Only
Seminar	CIE Only
Comprehensive Viva	ESE only
Main Project	CIE by Supervisor 30 marks, by Committee 40 ESE by external expert 30

Table 2.12: CIE Computation Guidelines

Course	Attendance	Test or Evaluation	Assignment/ Class work
Theory	20%	50%	30%
Practical	20%	40%	40%
Mini Project	10%	50%	40%
Seminar	Scope and Relevance of Topic 20% Attendance 10% Presentation 30% Technical content 20% Report 20%		
Main Project	Project Evaluation by Supervisor 30 Project Evaluation by Committee 40		

There shall be minimum two internal evaluation tests, each of 2hrs duration. Each test shall cover 50% of the syllabus and shall be for 50marks. Retest shall be permitted to the students who could not appear for the internal tests due to genuine grounds.

**End Semester Examination**

There shall be End Semester Examinations (ESE) in every semester for all courses as prescribed under the respective curriculum, except for Non-credit courses, Mini Project and Seminar. The End Semester Examinations shall be conducted by the University. Semester classes shall be completed at least ten days before the commencement of the End Semester Examination. The End Semester Examinations (ESE) shall be held twice in a year – May/June (for even semesters) and November/December (for odd semesters). However, the End Semester Examinations of the third & fourth Semesters shall be conducted in both the sessions. The Comprehensive viva is to be done at the beginning of the fourth semester for MCA (year)

Pass minimum for a course shall be 40% for the End Semester Examination and 50% of CIE and ESA put together. Letter grade ‘F’ will be awarded to the student for a course if either his/her mark for the End Semester Examination (ESE) is below 40 % or the overall mark [Continuous Internal Evaluation (CIE) + End Semester Examination (ESE)] is below 50 %.

Table 2.12 Grades and Grade Points of ESE

Grades	Grade Point (GP)	% of Total Marks obtained in the course
S	10	90% and above
A+	9.0	85% and above but less than 90%
A	8.5	80% and above but less than 85%
B+	8.0	75% and above but less than 80%
B	7.5	70% and above but less than 75%
C +	7.0	65% and above but less than 70%
C	6.5	60% and above but less than 65%
D	6.0	55% and above but less than 60%
P (Pass)	5.5	50% and above but less than 55%
F (Fail)	0	Below 50% (CIE + ESE) or Below 40 % for ESE
FE	0	Failed due to lack of eligibility criteria

ab	0	Could not appear for the end semester examination but fulfills the eligibility criteria
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B. Tools for measuring indirect attainment is

#### 1. Course exit survey

The screenshot shows the EtLab software interface for managing course exit surveys. At the top, there's a navigation bar with the college name, user profile, and other links. Below it, the main content area is titled "CO Based Course Exit Survey". It shows the following details:

- Name:** CE-20MCA105-MCA 2022-2024 (S1)
- Description:** Not set
- Survey Id:** CE532-Jan-2023
- Type:** Course Exit Survey
- Start Date:** 23/01/2023
- Department:** Master of Computer Applications
- End Date:** 25/01/2023
- Status:** Active

The main table lists five questions, each associated with a specific Course Outcome (CO 1 through CO 5) and a set of response options (Excellent, Very Good, Good, Fair, Poor) with corresponding marks (5.00, 4.00, 3.00, 2.00, 1.00).

Parts	Question	Option	Mark
1 -	1. Remember the Basic Data Structures and understand the Set Data Structure and its implementation. -CO 1	excellent very good good fair poor	5.00 4.00 3.00 2.00 1.00
	2. Understand Advanced Tree Structures for the design of efficient algorithms -CO 2	excellent very good good fair poor	5.00 4.00 3.00 2.00 1.00
	3. Understand Advanced Heap Structures suitable for solving Computational problems involving Optimization and analyzing these data structures using amortized analysis. -CO 3	excellent very good good fair poor	5.00 4.00 3.00 2.00 1.00
	4. Understand Advanced Graph algorithms suitable for solving advanced computational problems -CO 4	excellent very good good fair poor	5.00 4.00 3.00 2.00 1.00
	5. Understand the basic operation of Block chaining along with the data structures used in it and the challenges in Blockchain data. -CO 5	excellent very good good fair poor	5.00 4.00 3.00 2.00 1.00

Below the table, there's a section for "Descriptive questions (Optional)" with columns for Q.No. and Question.

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Fig 2.5: Sample Course Exit Survey Form

#### 2.1 Direct CO attainment

##### 2.1.1 Continuous Internal Evaluation

Faculty prepares questions addressing COs for internal examinations and assignments. For each COs a target will be set based on the knowledge level of the COs. Knowledge level of COs and target is given in the table 1

Table 2.13: Bloom's knowledge level of COs and Targets

Bloom's Knowledge Level	Target (%)
K3 (Applying) to K6 (Create)	50%
K2 (Understanding)	60%
K1 (Remembering)	70%

CO attainment can be numerically expressed (Attainment level) as given in the table 2

Table 2.14: Attainment level calculation from continuous internal evaluation (CIE)

Criteria	Attainment Level
70 % or more students score more than set target in internal examinations and assignments	3

60 % or more students score more than set target in internal examinations and assignments	2
50 % or more students score more than set target in internal examinations and assignments	1
Less than 50 % students score more than set target in internal examinations and assignments	0

CO attainment from CIE will be the average of attainment levels by internal examinations and assignments.

#### 2.1.2 End Semester Examination Conducted by the University

For the end semester examination, a question paper will be prepared by the university. The evaluation of the answer scripts of students will be done in various camps spread across the state and the university declares grades scored by students. The university doesn't provide marks scored by the students in each COs of a course. Hence the attainment calculation is done as follows:

1. A target grade will be set for each course.
2. Find % of students scored or more than the target grade
3. Attainment level will be calculated as given in the table 3

Table 2.15: Attainment level calculation end semester examination

Criteria	Attainment Level
70 % or more students score more than set target in the end semester examination	3
60 % or more students score more than set target in the end semester examination	2
50 % or more students score more than set target in the end semester examination	1
Less than 50 % students score more than set target in the end semester examination	0

Combining attainments in continuous internal evaluation and end semester examination, direct attainment can be calculated using equation 1. As CO wise attainment cannot be measured in the end semester examination, only 30% weightage is allocated.

$$\text{Direct CO Attainment} = 0.7 \times \text{CO attainment from CIE} + 0.3 \times \text{CO attainment from end semester examination} \quad (1)$$

#### 2.2 Indirect CO Attainment using course exit survey

In the course exit survey, students will be given a questionnaire for checking their capability in a course and they are asked to rate their capability in course outcome on a scale of 5 and the values will be converted into percentage of marks by dividing numerical value selected by the student by maximum value.

Indirect attainment is calculated by the same criteria as given in table 2.

#### 2.3 Final CO attainment

By combining weighted direct CO attainment and indirect CO attainment as given in equation 2, final CO attainment can be calculated.

$$\text{Final CO attainment} = 0.8 \times \text{Direct CO attainment} + 0.2 \times \text{Indirect CO Attainment} \quad (2)$$

#### 3. PO Attainment

PO attainment is calculated using final CO attainment (equation 3) and the following indirect ways.

1. Programme exit survey
2. Alumni survey
3. Parent survey
4. Employer survey
5. Attainment of additional COs (ACOs)

PO1 attainment from COs=

$$\frac{\sum_{i=1}^n \frac{\text{Final Attainment of CO}_i \times \text{Correlation of CO}_i \text{ to PO}_1}{\text{Maximum correlation}}}{n} \quad (3)$$

Where n is the number of COs and maximum correlation is 3.

In the programme exit survey, students will be given a questionnaire to check their professional capability after they have graduated. They will be asked to rate their confidence level on a scale of 3 against each question which address all the 12 PO's. In the alumni survey, they will be given a similar questionnaire to test their improvements in the professional competency and they have to rate their competency on a scale 3 against each questions addressing PO's. Also, parents

will be given a certain set of questions to check the programme outcomes and they will be asked to rate their impression about their ward on a scale of 3. Similarly, employer will be given a questionnaire to rate their impression about their employees on a scale of 3. All these indirect tools are given equal weightage of 20%. The summation of weighted responses from all these surveys gives indirect attainment of each PO's.

$$\text{Final PO attainment} = 0.8 \times \text{PO attainment from COs} + 0.2 \times \text{Indirect PO Attainment} \quad (4)$$

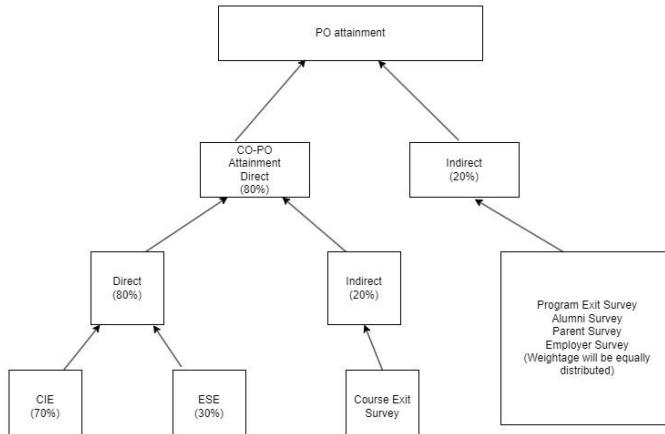


Fig 2.6: Diagrammatic representation of PO attainment work flow

CO Based Evaluations				
	CO1	CO2	CO3	CO5
CO attainment- Assignment Assignment 1	3			
Weightage	50			
CO attainment- Series Exam 1	0			
Weightage	50			
CO attainment- Series Exam 2		0	0	0
Weightage		100	100	50
CO attainment- Assignment Assignment 2				3
Weightage				50
<input checked="" type="button"/> Calculate				

External CO - Attainment				
(For external CO attainment calculation)		External Attainment	Benchmark(%)	<input type="button"/> Export
<input style="width: 100px; height: 20px; border: none; border-bottom: 1px solid black; padding: 2px; margin-bottom: 5px;" type="button" value="C"/> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc; width: fit-content; margin-top: 5px;">           48(out of 57) - 84.21% students scored above the selected cut off grade in external examination.         </div>		1	50	or above
		2	60	or above
		3	70	or above
<input type="button" value="Submit"/>				

Edit					
CO	Internal 70.0 %	External 30.0 %	Direct Attainment 80.0 %	Indirect Assessment 20.0 %	Overall Attainment
CO1	1.5	3	1.95	3.00	2.16
CO2	0	3	0.90	3.00	1.32
CO3	0	3	0.90	3.00	1.32
CO4		3 (100%)	3.00	3.00	3.00
CO5	1.5	3	1.95	3.00	2.16
Overall CO			1.992		

<b>CO - PO Mapping</b>													
<b>Edit</b>	<b>View Detailed</b>												
CO	Overall Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2.16	3	2	2	0	1	0	0	0	0	0	0	0
CO2	1.32	2	2	3	2	1	0	1	0	0	0	0	0
CO3	1.32	2	3	3	2	1	0	1	0	0	0	0	0
CO4	3.00	3	3	2	1	2	0	1	0	0	0	0	0
CO5	2.16	3	2	2	2	3	0	1	0	0	0	0	0
Direct Attainment		1.82	1.62	1.50	1.05	1.15		0.65					


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 Choonadacherry P.O, Palai, Kottayam 686 579, Kerala, India.  
 MASTER OF COMPUTER APPLICATIONS

Academic Year: 2022-23      Batch: MCA 2022-2024 (S3)      Semester: 1st semester  
 Faculty Member(s): RAHUL SHAJAN      Course Code & Name: 20MCA105 - Advanced Data Structures

**CO Attainment**

CO	Direct Attainment(80.00)%			Indirect Attainment(20.00)%	Overall Attainment
	Internal(70.00)%	External(30.00)%	Total		
CO1	1.5	3.00	1.95	3.00	2.16
CO2	0	3.00	0.90	3.00	1.32
CO3	0	3.00	0.90	3.00	1.32
CO4		3.00	3.00	3.00	3.00
CO5	1.5	3.00	1.95	3.00	2.16
Overall CO		1.992			

Signature of faculty(s)


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 MASTER OF COMPUTER APPLICATIONS  
 CO-PO-PSO ATTAINMENT

Academic Year: 2022-23      Batch: MCA 2022-2024 (S3)      Semester: 1st semester  
 Faculty Member(s): RAHUL SHAJAN      Course Code & Name: 20MCA105 - Advanced Data Structures

**CO-PO AND CO-PSO ATTAINMENT**

CO	Overall Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2.16	3	2	2	-	1	-	-	-	-	-	-	-
CO2	1.32	2	2	3	2	1	-	1	-	-	-	-	-
CO3	1.32	2	3	3	2	1	-	1	-	-	-	-	-
CO4	3.00	3	3	2	1	2	-	1	-	-	-	-	-
CO5	2.16	3	2	2	2	3	-	1	-	-	-	-	-
Average CO-PO Attainment		1.82	1.62	1.50	1.05	1.15	-	0.65	-	-	-	-	-

Signature of faculty(s)

Fig 2.7: Sample of PO attainment process

**b) Frequency of assessment processes:**

1. A minimum of two assignments and two internal exams are assessed for each theory course.
2. Two internal exams as well as a CO-based continuous assessment based on lab experiments are carried out for the practical subjects.
3. The concerned faculty members will conduct the course exit survey following the completion of each course.
4. During the program period, the associated main project (fourth semester), one mini project (third semester), and a seminar (fourth semester) are evaluated.
5. Guide's track the development of the seminar and project. This is on top of the regular Internal co-based evaluation was completed prior to the final evaluation.
6. Every four semesters, there will be a university examination at the end of the semester.
7. When necessary, subject handlers will give out extra assignments and class tests.
8. As soon as a specific batchs academic activities are finished, the programme exit survey will be carried out.

## 2.3.2 Indicate results of Evaluation of each PO (80)

- c) The expected level of attainment for each of the programme outcomes;  
 d) Summaries of the results of the evaluation processes and an analysis illustrating the extent to which each of the programme outcomes are attained; and  
 e) How the results are documented and maintained.

File Name
<a href="#">PO Target 2021-23</a>
<a href="#">PO Target 2020-22</a>
<a href="#">PO Target 2019-22</a>
<a href="#">PO Attainment 2021-23</a>
<a href="#">PO Attainment 2020-22</a>
<a href="#">PO Attainment 2019-22</a>
<a href="#">CO-PO Mapping</a>

The expected level of attainment for each of the programme outcomes;

**PO's Target for the MCA 2 Year (Regular) 2021-23 Batch- 2020 Scheme**

SUBJECT CODE	SUBJECT NAME	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
20MCA101	MATHEMATICAL FOUNDATIONS FOR COMPUTING	3.00	3.00	3.00	3.00			3					
20MCA103	DIGITAL FUNDAMENTALS & COMPUTER ARCHITECTURE	1.83	1.83	1.75	1.00	2.00		1.17	2.00	2.00		2.00	2.00
20MCA105	ADVANCED DATA STRUCTURES	2.6	2.4	2.4	1.75	1.6		1					
20MCA107	ADVANCED SOFTWARE ENGINEERING			2.5	2.67		2.8			2.25	2.5	2	2
20MCA131	PROGRAMMING LAB	2.8	2.8	2.8	2.4	2.6						1	
20MCA133	WEB PROGRAMMING LAB	3.00	3.00	3.00	2.20	2.20		3.00	3.00	1.00		2.00	2.00
20MCA135	DATA STRUCTURES LAB	2.4	2.5	2.5	1.67	1.6		1					
20MCA102	ADVANCED DATABASE MANAGEMENT SYSTEMS	1.5	2.5	2.5	1.5	1	2	1.33	2			2	2
20MCA104	ADVANCED COMPUTER NETWORKS	3	3	2		2	2	2		3		2	
20MCA172	ADVANCED OPERATING SYSTEMS	2.00	1.40			1.50		1		1			
20MCA192	IPR and CYBER LAWS	2.60	2.20	1.40	1		1						
20MCA132	OBJECT ORIENTED PROGRAMMING LAB	2.83	2.33	2.33	2.00	3.00	2.00			3.00		3.00	
20MCA134	ADVANCED DBMS LAB	2.33	2.00	2.50	1.50	1.50		1.00	1.00		1.00	1.00	1.33
20MCA136	NETWORKING & SYSTEM	1.33		2.00		2.00							

	ADMINISTRATION LAB												
20MCA201	DATA SCIENCE & MACHINE LEARNING	2.6	2.6	3	2			3					
20MCA203	DESIGN & ANALYSIS OF ALGORITHMS	3.00	3.00	1.00	2.00			2.00					
20MCA263	CYBER SECURITY & CRYPTOGRAPHY	2.00	1.20	1.20	1.00		2.00	1.00					
20MCA283	DEEP LEARNING	2.60	2.80	3		2.75		2.75					
20MCA241	DATA SCIENCE LAB	3.00	3.00	3.00	1.80	3.00	2.20	3.00		2.00			
20MCA243	MOBILE APPLICATION DEVELOPMENT LAB	3.00	3.00	3.00	1.80	3.00	2.20	3.00		2.00			
20MCA245	MINI PROJECT	2.43	2.71	2.86	3.00	2.57	2.00	2.71	2.71	2.00	1.80	2.29	
20MCA242	COMPREHENSIVE VIVA	2.50	2.50	2.00	2.00	2.33	2.33	2.50		2.75			
20MCA244	SEMINAR	2.00	2.50	1.00	2.67	2.60	2.67	3.00		3.00	2.00	2.00	
20MCA246	MAIN PROJECT	2.43	2.71	2.86	3.00	2.57	2.00	2.71	2.71	2.00	1.80	2.29	
	TARGET	<b>2.47</b>	<b>2.5</b>	<b>2.34</b>	<b>1.96</b>	<b>2.24</b>	<b>2.04</b>	<b>2.11</b>	<b>2.24</b>	<b>2.19</b>	<b>1.72</b>	<b>1.96</b>	<b>2.17</b>

**PO's Target for the MCA 2 Year (Regular) 2020-22 Batch- 2020 Scheme**

SUBJECT CODE	SUBJECT NAME	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
20MCA101	MATHEMATICAL FOUNDATIONS FOR COMPUTING	3.00	3.00	3.00	3.00			3					
20MCA103	DIGITAL FUNDAMENTALS & COMPUTER ARCHITECTURE	1.83	1.83	1.75	1.00	2.00		1.17	2.00	2.00		2.00	2.00
20MCA105	ADVANCED DATA STRUCTURES	2.6	2.4	2.4	1.75	1.6		1					
20MCA107	ADVANCED SOFTWARE ENGINEERING			2.5	2.67		2.8		2.25	2.5	2	2	2
20MCA131	PROGRAMMING LAB	2.8	2.8	2.8	2.4	2.6						1	
20MCA133	WEB PROGRAMMING LAB	3.00	3.00	3.00	2.20	2.20		3.00	3.00	1.00		2.00	2.00
20MCA135	DATA STRUCTURES LAB	2.4	2.5	2.5	1.67	1.6		1					
20MCA102	ADVANCED DATABASE MANAGEMENT SYSTEMS	1.5	2.5	2.5	1.5	1	2	1.33	2			2	2
20MCA104	ADVANCED COMPUTER NETWORKS	3	3	2		2	2	2		3		2	
20MCA172	ADVANCED OPERATING SYSTEMS	2.00	1.40			1.50		1		1			
20MCA182	BUSINESS MANAGEMENT	3	3	3		3	2		2.5			3	3
20MCA132	OBJECT ORIENTED	2.83	2.33	2.33	2.00	3.00	2.00			3.00		3.00	

	PROGRAMMING LAB												
20MCA134	ADVANCED DBMS LAB	2.33	2.00	2.50	1.50	1.50		1.00	1.00		1.00	1.00	1.33
20MCA136	NETWORKING & SYSTEM ADMINISTRATION LAB	1.33		2.00		2.00							
20MCA201	DATA SCIENCE & MACHINE LEARNING	2.6	2.6	3	2			3					
20MCA203	DESIGN & ANALYSIS OF ALGORITHMS	3.00	3.00	1.00	2.00			2.00					
20MCA263	CYBER SECURITY & CRYPTOGRAPHY	2.00	1.20	1.20	1.00		2.00	1.00					
20MCA287	BIOINFORMATICS	3.00	2.40	1.40		2.00		1.60					
20MCA241	DATA SCIENCE LAB	3.00	3.00	3.00	1.80	3.00	2.20	3.00		2.00			
20MCA243	MOBILE APPLICATION DEVELOPMENT LAB	3.00	3.00	3.00	1.80	3.00	2.20	3.00		2.00			
20MCA245	MINI PROJECT	2.43	2.71	2.86	3.00	2.57	2.00	2.71	2.71	2.00	1.80	2.29	3.00
20MCA242	COMPREHENSIVE VIVA	2.50	2.50	2.00	2.00	2.33	2.33	2.50		2.75			
20MCA244	SEMINAR	2.00	2.50	1.00	2.67	2.60	2.67	3.00		3.00	2.00	2.00	2.00
20MCA246	MAIN PROJECT	2.43	2.71	2.86	3.00	2.57	2.00	2.71	2.71	2.00	1.80	2.29	3.00
TARGET		2.5	2.52	2.34	2.02	2.24	2.13	2.05	2.27	2.19	1.72	2.05	2.26

**PO's Target for the MCA 3 Year (Regular) 2019-22 Batch**

COURSE CODE	COURSE NAME	SEMESTER	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
RLMCA101	Problem Solving and Computer Programming	S1	2.5	1.5	1.5	0.5	2.5	-	-	-	-	-	-	-
RLMCA103	Discrete Mathematics	S1	3	3	2	2	-	-	-	-	-	-	-	-
RLMCA105	Applied Probability and Statistics	S1	3	2.83	2	3	-	-	1	1	-	1	-	-
RLMCA107	Principles of Management	S1	2.25	1.25	1.25	1	2.25	-	-	-	-	-	-	-
RLMCA109	Digital Fundamentals	S1	2.5	1.5	1.5	0.5	2.5	-	-	-	-	-	-	-
RLMCA131	Programming Lab	S1	3	2.33	2.33	1.33	3	-	-	-	-	-	-	-
RLMCA133	Applied Statistics Lab	S1	3	2	2.33	-	3	-	-	1	1	-	1	1
RLMCA102	Object Oriented Programming	S2	1.33	1	1	2	2	-	-	-	-	-	-	-
RLMCA104	Data Structures	S2	2.6	2.4	2.4	1.75	1.6	-	1	-	-	-	-	-
RLMCA106	Operating Systems	S2	2	1	1	-	2	-	-	-	-	-	-	-
RLMCA108	Operations Research	S2	3	3	2	2	1	-	-	-	-	-	-	-
RLMCA112	Computer Organization and Architecture	S2	2.33	1.33	1.33	0.33	2.33	-	-	-	-	-	-	-
RLMCA132	Object Oriented Programming Lab	S2	2.67	2.33	1.67	2.33	3	-	-	-	-	-	-	-
RLMCA134	Data Structures Lab	S2	3	2.33	2.33	1.33	3	-	-	-	-	-	-	-

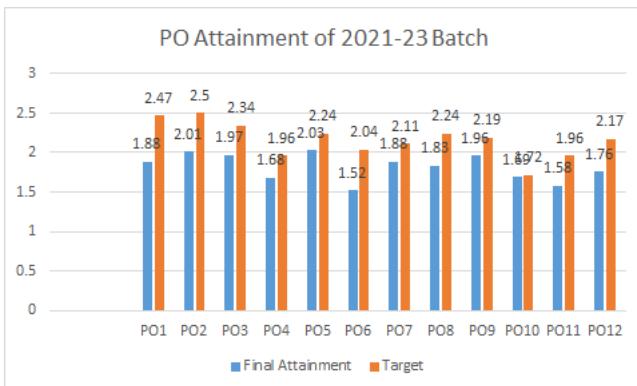
RLMCA201	Computer Networks	S3	2.5	1.5	1.5	0.5	2.5	-	-	-	-	-	-	
RLMCA203	Software Engineering	S3	2.25	1.25	1.25	1	2.25	-	-	-	-	-	-	
RLMCA205	Database Management Systems	S3	2.5	1.5	1.5	0.5	2.5	-	-	-	-	-	-	
RLMCA207	Design and Analysis of Algorithms	S3	2.25	1.25	1.25	1	2.25	-	-	-	-	-	-	
RLMCA209	Web Programming	S3	2.25	1.25	1.25	1	2.25	-	-	-	-	-	-	
RLMCA231	Database Lab	S3	3	2.33	2.33	1.33	3	-	-	-	-	-	-	
RLMCA233	Web Programming Lab	S4	2.8	2.4	2	2	3	-	-	-	-	-	-	
RLMCA202	Application Development and Maintenance	S4	2.25	1.25	1.25	1	2.25	-	-	-	-	-	-	
RLMCA204	Big Data Technologies	S4	1.25	1.5	1.75	1	2.25	-	-	-	-	-	-	
RLMCA206	Mobile Computing	S4	3	3	3	2	3	2	3	-	2	-	-	
RLMCA208	Introduction to Machine Learning	S4	2.5	1.5	1.5	0.5	2.5	-	-	-	-	-	-	
RLMCA274	Business Intelligence and its Applications	S4	2.33	1.17	1.83	0.5	2.33	1.33	0.5	0.5	0.83	0.5	0.67	
RLMCA232	System Design Lab	S4	3	2.33	2.33	1.33	3	-	-	-	-	-	-	
RLMCA234	Mobile Application Development Lab	S4	2.8	2.4	2	2	3	-	-	-	-	-	-	
RLMCA301	Web Data Mining	S5	2.67	1.67	1.67	1	2.67	-	-	-	-	-	-	
RLMCA303	E-Commerce	S5	2.25	1.25	1.25	1	2.25	-	-	-	-	-	-	
RLMCA305	Cryptography and Cyber Security	S5	2.5	1.5	1.5	0.5	2.5	-	-	-	-	-	-	
RLMCA369	Python Programming	S5	2.67	1.33	2.17	1.33	1.67	-	2	2	1	1	2	
RLMCA387	Computer Graphics	S5	2.67	1.33	2.17	1.33	1.67	-	2	2	1	1	2	
RLMCA341	Seminar	S5	2	2	2	1	2	2	2	2	1	1	2	
RLMCA351	Mini Project	S5	3	3	3	3	3	2	3	3	2	2	3	
RLMCA352	Project and Viva Voce	S6	3	3	3	3	3	2	3	3	2	2	3	
Target PO			2.55	1.88	1.84	1.35	2.44	1.87	1.94	1.81	1.35	1.21	1.67	1.93

**Summaries of the results of the evaluation processes and an analysis illustrating the extent to which each of the programme outcomes are attained**

#### MCA 2021-23 Batch(2020 Scheme)-PO Attainment

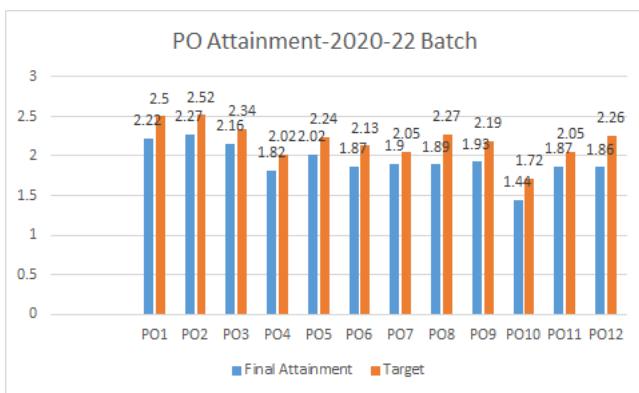
COURSE	COURSE NAME	SEMESTER	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
20MCA101	Mathematical Foundations for Computing	1	2.03	2.23	2.23	2.23	-	-	2.23	-	-	-	-	-
20MCA103	Digital Fundamentals & Computer Architecture	1	1.22	1.42	1.46	0.9	1.74	-	1.05	1.74	1.74	-	1.74	1.74
20MCA105	Advanced Data Structures	1	1.94	2.01	1.92	1.54	1.53	-	1.07	-	-	-	-	-
20MCA107	Advanced Software Engineering	1	-	0.96	1.45	-	2.28	-	-	1.24	2.08	1.74	1.63	1.52

20MCA131	Programming Lab	1	2.34	2.54	2.54	2.23	2.38	-	-	-	-	-	1.17	-
20MCA133	Web Programming Lab	1	2.57	2.77	2.77	2.14	2.14	-	2.77	2.77	1.2	-	1.2	1.2
20MCA135	Data Structures Lab	1	2.06	1.91	1.9	1.14	1.65	-	1.01	-	-	-	-	-
20MCA102	Advanced Database Management Systems	2	0.65	0.8	0.8	0.74	0.5	0.52	0.59	0.72	-	-	0.72	0.72
20MCA104	Advanced Computer Networks	2	2.33	2.53	2	-	1.85	1.62	1.78	-	2.53	-	1.78	-
20MCA172	Advanced Operating Systems	2	1.26	1.16	-	-	1.15	-	1.2	-	0.93	-	-	-
20MCA192	Business Management	2	1.26	1.34	0.98	0.86	-	0.66	-	-	-	-	-	-
20MCA132	Object Oriented Programming Lab	2	2.19	2.04	2.04	0.68	2.46	1.03	-	-	1.65	-	1.65	-
20MCA134	Advanced DBMS Lab	2	1.7	1.66	1.99	1.34	1.37	-	1.04	1.2	-	1.03	1.04	1.29
20MCA136	Networking & System Administration Lab	2	1.23	-	2	-	-	-	-	-	-	-	-	-
20MCA201	Data Science & Machine Learning	3	2.19	2.39	2.74	1.96	-	-	2.62	-	-	-	-	-
20MCA203	Design & Analysis of Algorithms	3	1.46	1.66	0.82	1.25	-	-	1.25	-	-	-	-	-
20MCA263	Cyber Security & Cryptography	3	1.44	1.18	1.18	1.2	-	1.35	1.02	-	-	-	-	-
20MCA283	Bio informatics	3	1.89	2.24	2.38	-	2.26	-	2.26	-	-	-	-	-
20MCA241	Data Science Lab	3	2.6	2.8	2.8	1.84	2.8	1.96	2.8	-	2	-	-	-
20MCA243	Mobile Application Development Lab	3	2.5	2.7	2.7	1.78	2.7	1.89	2.7	-	1.94	-	-	-
20MCA245	Mini Project	3	2.14	2.57	2.69	2.8	2.46	1.8	2.57	2.57	2	1.84	2.23	2.8
20MCA242	Comprehensive Viva	4	2.2	2.4	2	2	2.26	1.8	2.4	-	2.6	-	-	-
20MCA244	Seminar	4	1.8	2.4	1.2	2.54	2.48	2.34	2.8	-	2.8	2	2	2
20MCA246	Main Project	4	2.14	2.46	2.69	2.8	2.46	1.8	2.57	2.57	2	1.84	2.23	2.8
Final Attainment			1.88	2.01	1.97	1.68	2.03	1.52	1.88	1.83	1.96	1.69	1.58	1.76
Target			2.47	2.5	2.34	1.96	2.24	2.04	2.11	2.24	2.19	1.72	1.96	2.17
Gap			0.59	0.49	0.37	0.28	0.21	0.52	0.23	0.41	0.23	0.03	0.38	0.41

**MCA 2020-22 Batch(2020 Scheme)- PO Attainment**

COURSE	COURSE NAME	SEMESTER	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
20MCA101	Mathematical Foundations for Computing	1	2.5	2.5	2.5	2.5	-	-	2.5	-	-	-	-	-
20MCA103	Digital Fundamentals & Computer Architecture	1	2	2	1.27	1.29	1.3	-	1.27	1.3	1.3	-	1.3	1.3
20MCA105	Advanced Data Structures	1	1.96	1.9	1.92	1.54	1.39	-	1.14	-	-	-	-	-
20MCA107	Advanced Software Engineering	1	-	2.6	2.58	-	2.03	-	-	2.06	2.15	1.75	1.67	1.53
20MCA131	Programming Lab	1	2.84	2.84	2.84	2.52	2.68	-	-	-	-	-	1.4	-
20MCA133	Web Programming Lab	1	2.95	2.95	2.95	2.33	2.33	-	2.95	2.95	1.33	-	2.2	2.2
20MCA135	Data Structures Lab	1	2.52	2.2	2.2	1.4	1.88	-	1.24	-	-	-	-	-
20MCA102	Advanced Database Management Systems	2	1.8	2.6	2.6	1.8	1.4	2.2	1.66	2.2	-	-	2.2	2.2
20MCA104	Advanced Computer Networks	2	2.73	2.73	2.2	-	2.05	2.02	1.98	-	2.73	-	1.98	-
20MCA172	Advanced Operating Systems	2	2.02	1.63	-	-	1.8	-	1.4	-	1.31	-	-	-
20MCA192	Business Management	2	2.09	3	3	-	1.66	1.3	-	1.69	-	-	3	3
20MCA132	Object Oriented Programming Lab	2	2.86	2.46	2.46	0.92	3	2.2	-	-	3	-	3	-
20MCA134	Advanced DBMS Lab	2	2.46	2.2	2.6	1.8	1.8	-	1.4	1.4	-	1.4	1.4	1.66
20MCA136	Networking & System Administration Lab	2	1.66	-	2.2	-	-	-	-	-	-	-	-	-
20MCA201	Data Science & Machine Learning	3	2.37	2.37	2.61	1.94	-	-	2.69	-	-	-	-	-
20MCA203	Design & Analysis of Algorithms	3	2.55	2.55	1.25	1.9	-	-	1.9	-	-	-	-	-
20MCA263	Cyber Security &	3	1.84	1.38	1.38	1.4	-	1.53	1.22	-	-	-	-	-

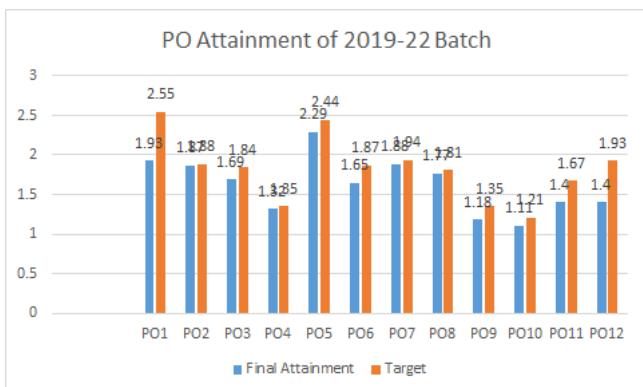
	Cryptography													
20MCA283	Bioinformatics	3	1.58	1.38	1.1	-	1.82	-	1.14	-	-	-	-	-
20MCA241	Data Science Lab	3	3	3	3	2.04	3	2.36	3	-	2.2	-	-	-
20MCA243	Mobile Application Development Lab	3	3	3	3	2.04	3	2.36	3	-	2.2	-	-	-
20MCA245	Mini Project	3	1.65	1.74	1.98	2.03	1.89	1.55	1.91	1.94	1.49	1.36	1.65	2.14
20MCA242	Comprehensive Viva	4	1.08	1.08	0.98	0.98	1.05	1.05	1.08	-	1.13	-	-	-
20MCA244	Seminar	4	2.2	2.6	1.4	2.74	2.68	2.74	3	-	3	1.56	1.24	1.56
20MCA246	Main Project	4	1.39	1.46	1.61	1.65	1.54	1.29	1.56	1.56	1.27	1.15	1.38	1.18
Final Attainment		2.22	2.27	2.16	1.82	2.02	1.87	1.9	1.89	1.93	1.44	1.87	1.86	
Target		2.5	2.52	2.34	2.02	2.24	2.13	2.05	2.27	2.19	1.72	2.05	2.26	
Gap		0.28	0.25	0.18	0.2	0.22	0.26	0.15	0.38	0.26	0.28	0.18	0.4	

**MCA 2019-22 Batch -PO Attainment**

COURSE	COURSE NAME	SEMESTER	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
RLMCA101	Problem Solving and Computer Programming	S1	2.04	1.7	1.5	0.77	2.44	-	-	-	-	-	-	-
RLMCA103	Discrete Mathematics	S1	1.96	2.36	1.58	1.58	-	-	-	-	-	-	-	-
RLMCA105	Applied Probability and Statistics	S1	2.22	2.5	1.75	2.42	-	-	1.27	1.27	-	1.07	-	-
RLMCA107	Principles of Management	S1	1.38	1.26	1.06	0.98	1.78	-	-	-	-	-	-	-
RLMCA109	Digital Fundamentals	S1	1.92	1.64	1.44	0.77	2.32	-	-	-	-	-	-	-
RLMCA131	Programming Lab	S1	2.6	2.46	2.26	1.46	3	-	-	-	-	-	-	-
RLMCA133	Applied Statistics Lab	S1	2.6	2.2	2.26	-	3	-	-	1.4	1	-	1.2	1.4
RLMCA102	Object Oriented Programming	S2	1.15	1.29	1.2	1.66	1.98	-	-	-	-	-	-	-
RLMCA104	Data Structures	S2	2.28	2.52	2.32	1.8	1.88	-	1.4	-	-	-	-	-

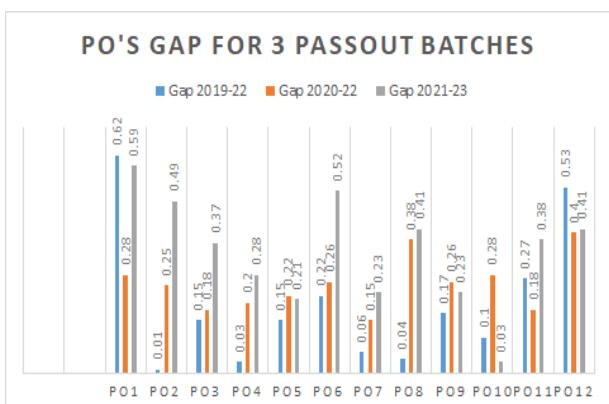
RLMCA106	Operating Systems	S2	1.53	1.26	1.06	-	1.93	-	-	-	-	-	-	-
RLMCA108	Operations Research	S2	2.45	2.85	1.9	1.9	1.35	-	-	-	-	-	-	-
RLMCA112	Computer Organization and Architecture	S2	2.02	1.64	1.44	0.66	2.42	-	-	-	-	-	-	-
RLMCA132	Object Oriented Programming Lab	S2	2.6	2.46	1.74	2.26	3	-	-	-	-	-	-	-
RLMCA134	Data Structures Lab	S2	2.6	2.46	2.26	1.46	3	-	-	-	-	-	-	-
RLMCA201	Computer Networks	S3	1.88	1.6	1.4	0.73	2.28	-	-	-	-	-	-	-
RLMCA203	Software Engineering	S3	1.38	1.26	1.06	0.98	1.78	-	-	-	-	-	-	-
RLMCA205	Database Management Systems	S3	1.88	1.6	1.4	0.73	2.28	-	-	-	-	-	-	-
RLMCA207	Design and Analysis of Algorithms	S3	1.38	1.26	1.06	0.98	1.78	-	-	-	-	-	-	-
RLMCA209	Web Programming	S3	1.38	1.26	1.06	0.98	1.78	-	-	-	-	-	-	-
RLMCA231	Database Lab	S3	2.6	2.46	2.26	1.46	3	-	-	-	-	-	-	-
RLMCA233	Web Programming Lab	S4	2.6	2.6	2.4	1.6	3	-	-	-	-	-	-	-
RLMCA202	Application Development and Maintenance	S4	1.38	1.26	1.06	0.98	1.78	-	-	-	-	-	-	-
RLMCA204	Big Data Technologies	S4	0.86	1.24	1.35	0.98	1.78	-	-	-	-	-	-	-
RLMCA206	Mobile Computing	S4	1.82	2.22	2.02	1.48	2.22	1.48	2.22	-	1.28	-	-	-
RLMCA208	Introduction to Machine Learning	S4	1.93	1.62	1.42	0.73	2.33	-	-	-	-	-	-	-
RLMCA274	Business Intelligence and its Applications	S4	2.06	1.54	1.86	0.8	2.46	1.46	1	1	0.86	0.8	0.94	1
RLMCA232	System Design Lab	S4	2.6	2.46	2.26	1.46	3	-	-	-	-	-	-	-
RLMCA234	Mobile Application Development Lab	S4	1.99	2.07	1.73	1.46	3	-	-	-	-	-	-	-

RLMCA301	Web Data Mining	S5	1.7	1.56	1.36	1.03	2.1	-	-	-	-	-	-
RLMCA303	E-Commerce	S5	1.38	1.26	1.06	0.98	1.78	-	-	-	-	-	-
RLMCA305	Cryptography and Cyber Security	S5	1.88	1.6	1.4	0.73	2.28	-	-	-	-	-	-
RLMCA369	Python Programming	S5	2.29	1.64	2.09	1.44	1.91	-	-	-	-	-	-
RLMCA387	Computer Graphics	S5	1.47	1.26	1.46	1.06	1.41	-	1.75	1.75	0.78	0.98	1.55
RLMCA341	Seminar	S5	1.81	1.78	1.67	1.13	2.37	-	1.61	1	1.07	0.48	0.51
RLMCA351	Mini Project	S5	2	2.54	2.8	2.8	2.77	1.84	2.88	3	1.64	1.68	2.11
RLMCA352	Project and Viva Voce	S6	1.99	2.54	2.79	2.79	2.77	1.82	2.88	2.99	1.62	1.67	2.11
Final Attainment			1.93	1.87	1.69	1.32	2.29	1.65	1.88	1.77	1.18	1.11	1.4
Target			2.55	1.88	1.84	1.35	2.44	1.87	1.94	1.81	1.35	1.21	1.67
Gap			0.62	0.01	0.15	0.03	0.15	0.22	0.06	0.04	0.17	0.1	0.27
													0.53



Details of PO's Gap identified for last three passout batches

POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Gap 2019-22	0.62	0.01	0.15	0.03	0.15	0.22	0.06	0.04	0.17	0.1	0.27	0.53
Gap 2020-22	0.28	0.25	0.18	0.2	0.22	0.26	0.15	0.38	0.26	0.28	0.18	0.4
Gap 2021-23	0.59	0.49	0.37	0.28	0.21	0.52	0.23	0.41	0.23	0.03	0.38	0.41



### **How the results are documented and maintained.**

1. Course exit survey by students in the form of feedback is conducted and the same is maintained in hard copy and soft copy.
2. Starting from the first exam in the series of examinations, the results of the batch are maintained separately in hardcopy and softcopy.
3. After publishing the university results the concerned faculty will calculate the CO attainment and identify the quality loop. Based on the analysis and recommendation by the subject handler, HOD will approve the CO's target levels. The details will be kept as hardcopy and softcopy.
4. Course attainment is documented by each faculty. And the same is handed over to the staff advisor of the corresponding batch through HOD. Staff advisor combines the COs to compute the attainment of POs.
5. At the end of the programme, DQAC evaluates the attainment of POs from all COs of a batch and reviews the POs attainment level. Recommendations for further improvements and enhancements are suggested. The details will be kept as hardcopy and softcopy.

hardcopy and softcopy.

### **2.4 Indicate how results of the assessment of achievement of the POs have been used for redefining the POs (5)**

**Total Marks : 5.00**

Institute Marks : 5.00

(Articulate with rationale the curricular improvement brought in after the review of the attainment of the POs.)

The continuous assessment of Program Outcomes (POs) is crucial for maintaining and enhancing the quality of a program. Here's a general outline of how the results of PO assessment might be used for redefining the POs:

#### 1. Identifying Weaknesses and Gaps:

The assessment results help identify areas where students may be struggling or where there are gaps in the achievement of specific outcomes.

#### 2. Feedback from Stakeholders:

Input from various stakeholders, including faculty, students, and industry experts, is considered to understand their perspectives on the strengths and weaknesses of the program outcomes.

#### 3. Alignment with Industry Needs:

The results are compared with the evolving needs of the industry to ensure that the program outcomes remain relevant and aligned with current industry standards and expectations.

#### 4. Curriculum Review and Adjustment:

Based on the assessment results, the curriculum may be reviewed to identify areas that need adjustment or improvement to better support the achievement of specific program outcomes.

#### 5. Revision of Assessment Methods:

The assessment methods themselves may be reviewed and revised to ensure they effectively measure the desired outcomes. This could include changes in examination patterns, project evaluations, or other assessment tools.

#### 6. Benchmarking Against Best Practices:

Programs often benchmark themselves against best practices in education. The assessment results may trigger a review of these benchmarks and adjustments to the program outcomes to align with or exceed industry and academic standards.

#### 7. Continuous Improvement Cycle:

The assessment results are fed into a continuous improvement cycle where adjustments are made, and the impact of those adjustments is monitored through subsequent assessments.

#### 8. Incorporating Emerging Trends:

If assessment results indicate a gap in addressing emerging trends or technologies, the program outcomes may be redefined to incorporate these new elements, ensuring graduates are well-prepared for the evolving landscape.

#### 9. Accreditation Requirements:

The accreditation and assessment results are carefully reviewed to ensure compliance with accreditation standards. Any required adjustments to program outcomes are made in line with accreditation criteria.

#### 10. Faculty Development:

Assessment results may highlight areas where faculty development is needed. Training and professional development for faculty can contribute to enhancing the delivery of content related to program outcomes.

## 11. Student Feedback:

Gathering feedback from students about their learning experiences and perceptions of program outcomes can provide valuable insights for refining the outcomes to better meet student needs and expectations.

In summary, the results of PO assessments are a valuable source of information that are used to inform a continuous improvement process, ensuring that program outcomes are relevant, effective, and aligned with the expectations of stakeholders.

A methodical procedure that is comparable to the one used for the creation of Program Outcomes (POs) (fig. 2.1) is employed in order to successfully redefine Program Outcomes (POs) based on evaluation results. By following these steps, institutions can systematically use assessment results to refine and redefine the Program Outcomes, ensuring that they remain relevant, measurable, and aligned with the educational goals of the program.

**3 Programme Curriculum (100)****Total Marks : 100.00****3.1 Curriculum (20)****Total Marks : 20.00**

## 3.1.1 Describe the Structure of the Curriculum (5)

Institute Marks : 5.00

Course Code	Course Title	Total Number of contact hours				Credits
		Lecture (L)	Tutorial (T)	Practical (P)	Total Hours	
20MCA101	Mathematical Foundations for Computing	3.00	1.00	0.00	4.00	4.00
20MCA103	Digital Fundamentals & Computer Architecture	3.00	1.00	0.00	4.00	4.00
20MCA105	Advanced Data Structures	3.00	1.00	0.00	4.00	4.00
20MCA107	Advanced Software Engineering	3.00	1.00	0.00	4.00	4.00
20MCA131	Programming Lab	0.00	1.00	3.00	4.00	2.00
20MCA133	Web Programming Lab	0.00	1.00	3.00	4.00	2.00
20MCA135	Data Structures Lab	0.00	1.00	3.00	4.00	2.00
20MCANC1	Entrepreneurship & Innovations in Technology	0.00	0.00	1.00	1.00	0.00
20MCA102	Advanced Database Management Systems	3.00	1.00	0.00	4.00	4.00
20MCA104	Advanced Computer Networks	3.00	1.00	0.00	4.00	4.00
20MCA172	Advanced Operating Systems	3.00	1.00	0.00	4.00	4.00
20MCA192	IPR and Cyber Laws	3.00	1.00	0.00	4.00	4.00
20MCA132	Object Oriented Programming Lab	0.00	1.00	3.00	4.00	2.00
20MCA134	Advanced DBMS Lab	0.00	1.00	3.00	4.00	2.00
20MCA136	Networking & System Administration Lab	0.00	1.00	3.00	4.00	2.00
20MCANC2	Industrial Readiness Training	0.00	0.00	1.00	1.00	0.00
20MCA201	Data Science & Machine Learning	3.00	1.00	0.00	4.00	4.00
20MCA203	Design & Analysis of Algorithms	3.00	1.00	0.00	4.00	4.00
20MCA265	Cloud Computing	3.00	1.00	0.00	4.00	4.00
20MCA283	Deep Learning	3.00	1.00	0.00	4.00	4.00
20MCA241	Data Science Lab	0.00	1.00	3.00	4.00	2.00
20MCA243	Mobile Application Development Lab	0.00	1.00	3.00	4.00	2.00
20MCA245	Mini Project	0.00	0.00	4.00	4.00	2.00
20MCANC3	Domain Expertise Workshops	0.00	0.00	1.00	1.00	0.00
20MCA242	Comprehensive Viva	0.00	0.00	0.00	0.00	6.00
20MCA244	Seminar	0.00	0.00	2.00	2.00	2.00
20MCA246	Main Project	0.00	0.00	27.00	27.00	12.00
Total		36.00	20.00	60.00	116.00	86.00

## 3.1.2 Give the Prerequisite flow chart of courses (5)

Institute Marks : 5.00

(Draw the schematic of the prerequisites of the courses in the curriculum)

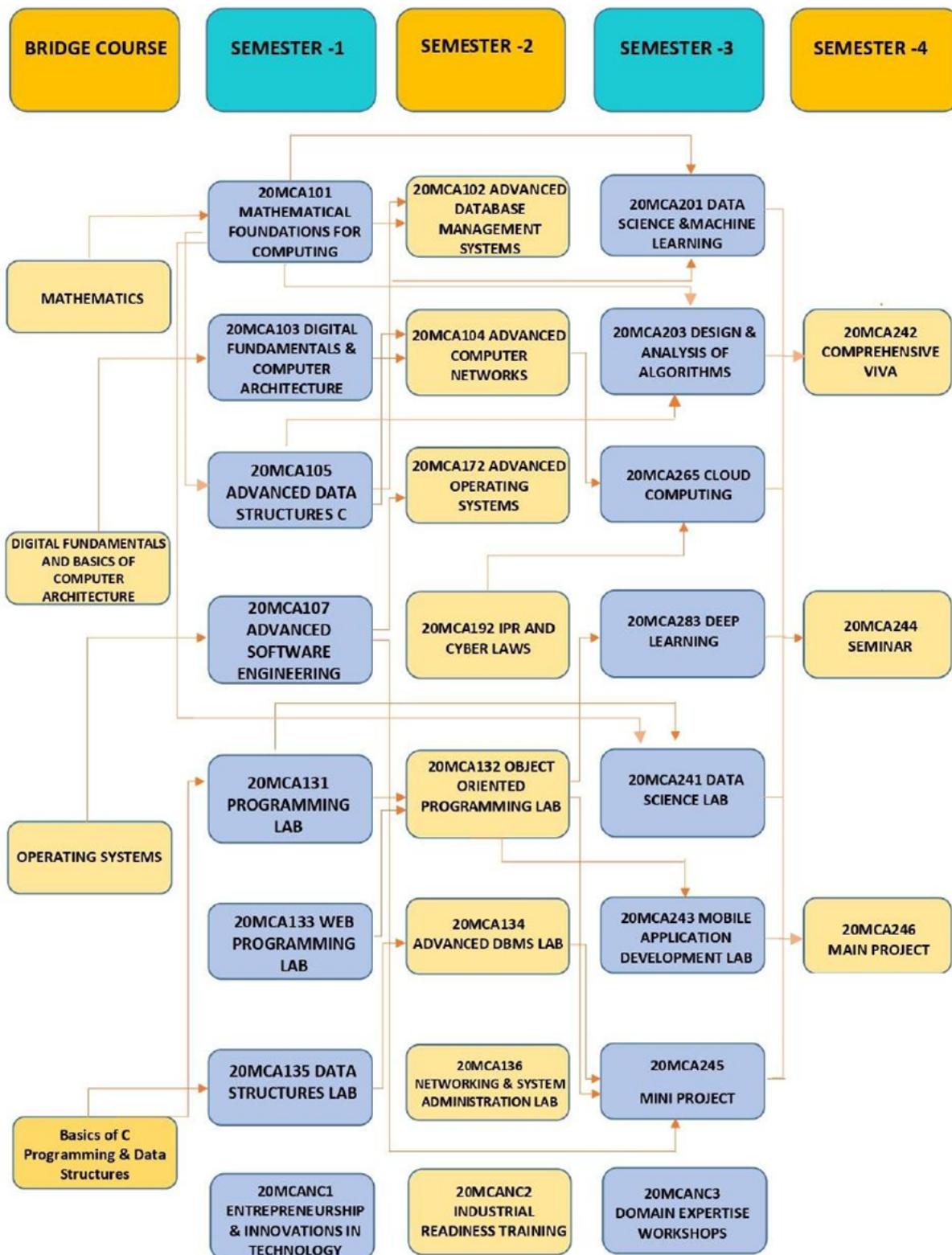


Fig. 3.1 Prerequisites of the courses in the curriculum.

3.1.3 Justify how the programme curriculum satisfies the program specific criteria (10)

Institute Marks : 10.00

(Justify how the programme curriculum satisfies the programme specific criteria specified by the American professional societies relevant to the programme under accreditation)

Applicability	The primary objective of our program is to create an academic and research environment that promotes innovation in technical education. We are dedicated to providing a robust foundation in both theoretical and applied aspects of Computer Applications, aligning closely with industry demands. Our aim is to produce highly skilled computer professionals capable of designing and innovating practical solutions. We prioritize maintaining an academic atmosphere that fosters research and teaching, emphasizing the development of professionals with strong ethical values.
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	This program is specifically designed to concentrate on Computer Applications, covering a spectrum of software programs involved in computer application development using contemporary programming languages. It offers a comprehensive blend of theoretical and practical knowledge, enabling students to engage with tools that facilitate the creation of advanced and efficient applications. In addition, the program ensures that graduates are well-prepared to apply mathematical knowledge in various areas, including Mathematics and Applied Statistics. We are committed to encourage entrepreneurial initiatives and fostering innovations that contribute to sustainable and socially relevant technological solutions.
<b>Knowledge</b>	The curriculum provides a comprehensive foundation in various expertise areas within information technology. It covers advanced software engineering principles and practices in software development, explores data structures within the context of Advanced Data Structures, and addresses machine learning in the Data Science & Machine Learning course. Practical application of Android development is included in the Mobile Application Development Lab, while Cloud Platforms are covered in the Cloud Computing course. Relevant aspects of big data technologies are incorporated into courses such as Data Science and Machine Learning, and both Advanced Database Management Systems and Advanced DBMS Lab delve into database management systems. Computer organization is studied in Digital Fundamentals and computer Architecture, and Web Data Mining is addressed in the Web Programming Lab. Computer Network architecture is discussed in Advanced Computer Networks and Networking & System Administration Lab, with Linux/Unix Fundamentals included in the latter. Fundamentals of Information Systems Security are covered across various courses, notably in Advanced Software Engineering. E-commerce is discussed under Entrepreneurship & Innovations in Technology, and applied statistics and mathematics are emphasized in multiple courses, including Mathematical Foundations for Computing and Applied Statistics within the context of data science.
<b>Problem-solving ability</b>	The curriculum places a strong emphasis on problem-solving skills through courses like Mathematical Foundations for Computing, which engages students in mathematical concepts. Advanced Data Structures delves into complex data structures, fostering algorithmic problem-solving. Advanced Software Engineering emphasizes systematic approaches, and the Programming Lab provides hands-on experience. Design and analysis of Algorithms focuses on algorithmic problem-solving, while Data Science and Machine Learning and associated labs involve practical problem-solving in data analysis, pattern recognition, and application development. The Main Project culminates in a significant real-world problem-solving endeavor.
<b>Hands-on Experience</b>	The curriculum emphasizes hands-on experience through various labs and practical courses. The Programming Lab provides a platform for practical coding exercises, while the Web Programming Lab focuses on web application development. The Data Structures Lab involves hands-on exercises related to data structures. The Object-Oriented Programming Lab applies principles in real-world problem-solving. Advanced DBMS Lab offers practical aspects of advanced database management. Networking & System Administration Lab provides hands-on activities related to networking and system administration. The Data Science Lab focuses on practical experience in data science applications, and the Mobile Application Development Lab provides hands-on experience in developing mobile applications. These components collectively ensure that students not only understand theoretical concepts but also gain practical skills applicable to real-world scenarios.
<b>Construction</b>	Seminar, Mini Project, Main Project
<b>Testing</b>	The curriculum includes courses that lay the foundation for software testing principles and practices. While the specific mention of courses related to software testing is not provided, certain courses, such as "Advanced Software Engineering" and "Programming Lab," likely incorporate elements that contribute to the understanding of software testing.
<b>Evaluation</b>	The curriculum's key evaluation-based courses include Programming Lab for practical programming assessments, Data Structures Lab to evaluate advanced data structure implementation, Networking & System Administration Lab for practical assessment of IT skills, and the Main Project for a comprehensive evaluation of real-world applications across diverse areas.
<b>Technical sales/maintenance</b>	Courses like Advanced Computer Networks, Advanced Operating Systems, Networking and System Administration Lab, Cloud Computing, and Mobile Application Development Lab provide essential skills for technical sales and maintenance. These cover networking, system administration, cloud technologies, and mobile

application development, contributing to a strong foundation in these domains.
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**3.2 State the components of the curriculum and their relevance to the POs and the PEOs (10)****Total Marks : 10.00**

Institute Marks : 10.00

Programme curriculum grouping based on different components

Course Component	Curriculum Content (% of total number of credits of the programme )	Total number of contact hours	Total Number of credits	POs	PEOs
Mathematics	4.65	56.00	4.00	PO1, PO2, PO3, PO4, PO7	PEO1, PEO2, PEO3
Management	4.65	56.00	4.00	PO2, PO3, PO5, PO8, PO12	PEO1, PEO2, PEO3
ICT	86.05	856.00	74.00	PO1 - PO8, PO11, PO12	PEO1, PEO2, PEO3
Humanities	4.65	56.00	4.00	PO1, PO2, PO3, PO4, PO6	PEO1, PEO2, PEO3

**3.3 State how the professional core courses are contributing towards Programme Outcomes (40)****Total Marks : 40.00**

Institute Marks : 40.00

(Describe how the core courses in the curriculum lend a learning experience to attain the programme outcomes)

The MCA curriculum is precisely designed to meet the diverse needs of students, focusing on developing a robust foundation and in-depth knowledge. Framed with consideration for Program Educational Objectives (PEOs) and Program Outcomes (POs), the curriculum systematically guides students from a computer science and mathematics background, fostering gradual evolution into MCA. The program aims not only for academic excellence but also emphasizes social commitment and professionalism.

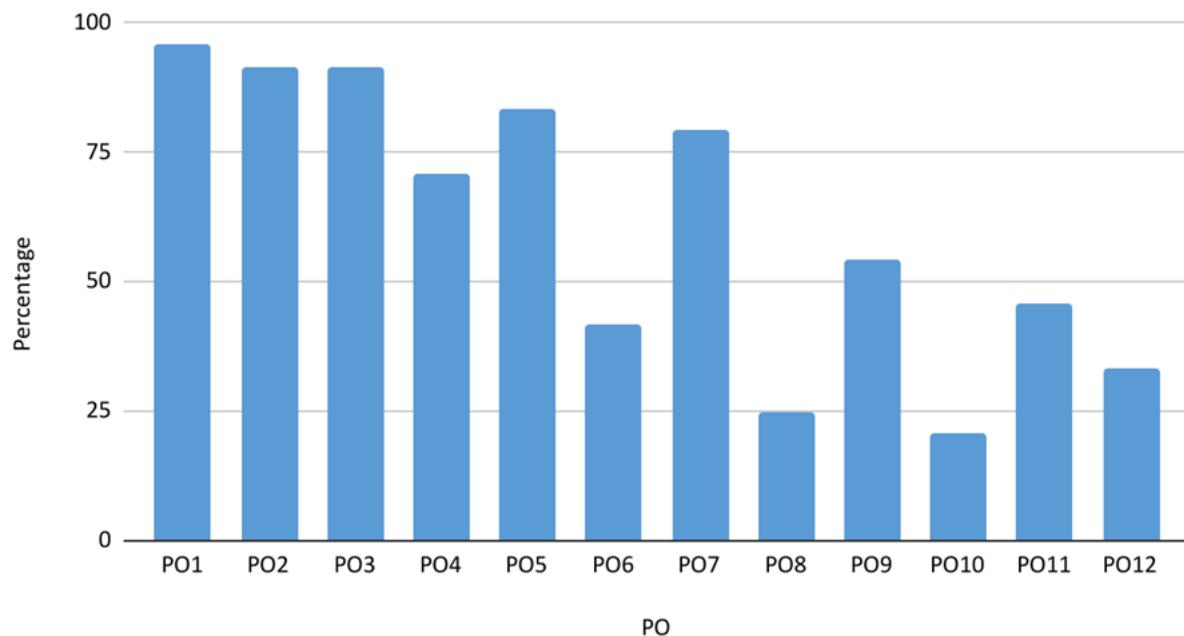
The curriculum comprises both theoretical and practical components, featuring an array of projects, seminars, and proficiency activities. Core subjects equip students to analyze, evaluate, and solve complex programming problems, and lab assignments and projects provide hands-on experience in problem analysis and design. Industry-level workflows, including scrum meetings, agile methodologies, and the implementation of cloud technologies, are integrated into the coursework. Seminars enhance knowledge, communication skills, and exposure to different fields, fostering creativity and application of technologies in projects. The alignment of Course Outcomes (COs), POs, and PEOs with Blooms Taxonomy ensures a focus on developing critical thinking skills and deep understanding. The curriculum aims to produce graduates with a passion for learning, social integrity, and professionalism, preparing them for success in the dynamic field of information technology.

**Table 3.1: Mapping of Courses with their relevant POs and PEOs**

Course code	Course Name	Curriculum Content (% of the total no. of credits in the program)	Total no. of contact hours	Total number credits	POs	PEOs
Semester-1						
20MCA101	Mathematical Foundations for Computing	4.65	56	4	1, 2, 3, 4, 7	1,2,3
20MCA103	Digital Fundamentals & Computer	4.65	56	4	1, 2, 3, 4, 5, 7, 8, 9, 11, 12	1,2,3
20MCA105	Advanced Data Structures	4.65	56	4	1, 2, 3, 4, 5, 7	1,2,3
20MCA107	Advanced Software Engineering	4.65	56	4	2, 3, 5, 8, 9, 10, 11, 12	1,2,3
20MCA131	Programming Lab	2.3	56	2	1, 2, 3, 4, 5, 11	1,2,3
20MCA133	Web Programming Lab	2.3	56	2	1, 2, 3, 4, 5, 7, 8, 9, 11, 12	1,2,3
20MCA135	Data Structures Lab	2.3	56	2	1, 2, 3, 4, 5, 7	1,2,3
Semester-2						

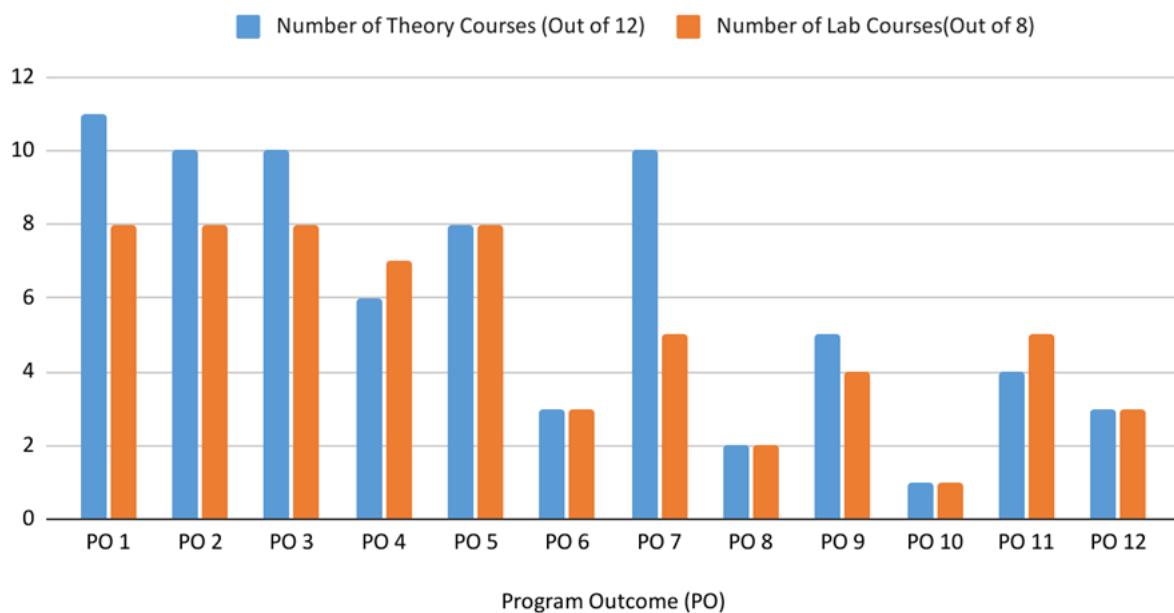
20MCA102	Advanced Database Management	4.65	56	4	1, 2, 3, 5, 6, 7, 9, 11	1,2,3
20MCA104	Advanced Computer Networks	4.65	56	4	1, 2, 3, 5, 6, 7, 9, 11	1,2,3
20MCA172	Advanced Operating Systems	4.65	56	4	1, 2, 5, 7, 9	1,2,3
20MCA192	IPR and Cyber Laws	4.65	56	4	1, 2, 3, 4, 6	1,2,3
20MCA132	Object Oriented Programming Lab	2.3	56	2	1, 2, 3, 4, 5, 6, 9, 11	1,2,3
20MCA134	Advanced DBMS Lab	2.3	56	2	1, 2, 3, 4, 5, 7, 8, 10, 11, 12	1,2,3
20MCA136	Networking & System	2.3	56	2	1, 3, 2005	1,2,3
<b>Semester-3</b>						
20MCA201	Data Science & Machine Learning	4.65	56	4	1, 2, 3, 4, 7	1,2,3
20MCA203	Design & Analysis of Algorithms	4.65	56	4	1, 2, 3, 4, 7	1,2,3
20MCA265	Cloud Computing	4.65	56	4	1, 5, 7, 12	1,2,3
20MCA283	Deep Learning	4.65	56	4	1, 2, 3, 5, 7	1,2,3
20MCA241	Data Science Lab	2.3	56	2	1, 2, 3, 4, 5, 6, 7, 9	1,2,3
20MCA243	Mobile Application Development	2.3	56	2	1, 2, 3, 4, 5, 6, 7, 9	1,2,3
20MCA245	Mini Project	2.3	56	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1,2,3
<b>Semester-4</b>						
20MCA242	Comprehensive Viva	7	0	6	1, 2, 3, 4, 5, 6, 7, 9	1,2,3
20MCA244	Seminar	2.3	28	2	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12	1,2,3
20MCA246	Main Project	14	350	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1,2,3
<b>Total</b>		99.8	1554	86		

## Alignment of Courses with Program Outcomes (PO)



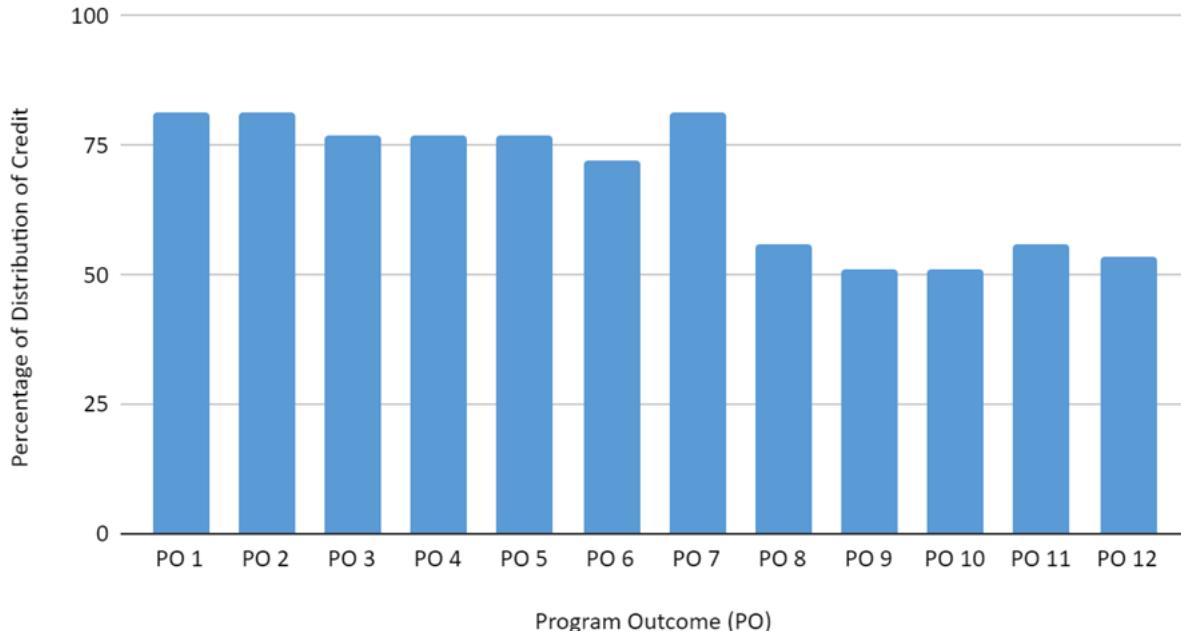
**Fig. 3.2** Alignment of Courses with Program Outcomes (PO)

## Number of Theory Courses and Number of Lab Courses Mapped To POs



**Fig. 3.3** Alignment of Theory and Lab Courses with Program Outcomes (PO)

## Percentage of Distribution of Credit vs. Program Outcome (PO)



**Fig. 3.4 Alignment of Course Credit with Program Outcomes (PO)**

### Lists Courses With High PO Mapping

**Table 3.2** Courses With High Mapping

Sl No	Course Code	Course Name	High Mapped POs
1	20MCA103	Digital Fundamentals & Computer Architecture	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10, PO11, PO12
2	20MCA107	Advanced Software Engineering	PO1, PO2, PO4, PO7, PO8, PO9, PO10, PO11, PO12
3	20MCA133	Web Programming Lab	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10, PO11, PO12
4	20MCA241	Data Science Lab	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO11
5	20MCA243	Mobile Application Development Lab	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO11
6	20MCA245	Mini Project	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12
7	20MCA244	Seminar	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO9, PO10, PO11, PO12
8	20MCA246	Main Project	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12

### 3.4 Industry interaction/internship (10)

**Total Marks : 10.00**

Institute Marks : 10.00

(Give the details of industry involvement in the programme such as industry-attached laboratories and partial delivery of courses and internship opportunities for students)

The institute offers a range of opportunities for students to enhance their knowledge and skills in the field of IT. These include workshops, talks, and seminars conducted in collaboration with industry professionals and experts. Such industry involvement not only helps students gain a better understanding of industry requirements but also prepares them for prospective placements. Moreover, internships play a crucial role in helping students apply their classroom knowledge to real-life situations, thereby bridging the gap between theoretical learning and practical application. Through internships, students can develop and build upon their skills, identify future employment opportunities, and gain a competitive edge over their peers. To learn more about our industrial interaction programs, please refer to the following:

**Technical Talks and Workshops****Internship****Industrial Visit****Technical Talks and Workshops**

The department is dedicated to creating engaging and enlightening learning experiences. Picture this: immersive technical sessions led by industry experts and professionals, where learning isn't just theoretical but involves hands-on classes. Imagine connecting with tech-savvy professionals, not through boring lectures, but through interactive hangouts that make learning feel like a conversation.

This is more than just classes; it's a chance for students to dive into the world of technology, to chat with experts who are shaping the industry. It facilitates a grasp of the current industrial standards and trends, allowing students to immerse themselves in the forefront of innovation.

It presents a chance to immerse oneself in the current happenings of the tech world and embrace the excitement of contemporary developments.

Table 3.3 Details of Technical Talks and Workshops

SI No	Date	Event	Resource Person
1	21-11-23	Unlocking Innovation: Introduction to IEDC and Entrepreneurship	Prof. Sarju S. Nodal Officer, SJCET - IEDC
2	09-11-23	Orientation Program- Introduction to MuLearn.	Prof. Sarju S. Nodal Officer, SJCET - IEDC
3	09-09-2023 to 04-11-2023	Advanced Web Development Technologies	Mr Vishak M, Senior Developer, Dishasoft PVT Ltd.
4	09-03-2023	Techsphere- workshop series  Cyber Security Softskill Development Anybody can Develop Apps Blockchain for future	Dr. Terry Jacob Mathew, Asst. Prof. MACFAST  Prof. Babu Sankar S, SJCET  Prof. Sumithmon K.S, SJCET  Prof. Liz George, SJCET
5	22-01-2022	One-day workshop on Python Django	Mr. Ajai Antony, Senior Developer, Dishasoft PVT Ltd.
6	16-12-2022	Soft skills and personality development for life success	Mr. S Babu Sankar, SJCET
7	16-03-2022	Computer hardware and networking	Mr. Alex Jose, SJCET
8	24-01-2023 to 27-01-2023	3-day workshop on "An Insight into Academic Project Management"	Mr. Vishak M, Senior Developer, Dishasoft PVT Ltd.
9	07-01-2023	The Express Way to Success and Happiness	Dr.Kurian Mattam, Spiritual Director, SJCET
10	02-12-2022	Fenstra-Creative Coding	Mr. Bibin George, SJCET Alumni
11	02-11-2022	Exploring Django	Mr Praise Varghese, Senior Developer, Dishasoft PVT Ltd.
12	17-09-2022	Python workshop	Mr. Manmohan, SJCET Alumni
13	28-09-2022	Employability in IT Industry	Mr. Sarath Nair, Manager Talent Acquisition, i-Dataanalytics
14	11-05-2022	Health Effects Of Electromagnetic Radiation	Mr. Sabarinath G, SJCET
15	06-05-2022	Scientific Publications	Mr. Rajesh Baby, SJCET

16	25-04-2022	Effective Utilization Of E-Resources for a Valuable Research Paper	Mr. Justine Thomas, SJCET
17	18-01-2022	Personality Development	Mr. Babu Sankar, SJCET
18	11-01-2021 to 16-01-2021	International Workshop on Machine Learning Applications-An International Perspective	Dr. Shailesh Sivan Assistant Professor, Cochin University of Science and Technology and Mr. Santhosh Kumar K P, Assistant Professor, Sacred Heart College, Thevara

### Internship

An internship is a vital professional learning experience, offering substantive, hands-on work aligned with a student's academic focus or career aspirations. Specifically encouraged during summer and final semester main project periods, our department underscores the importance of internships. These programs seamlessly integrate theoretical knowledge with real-world applications, empowering students with practical skills and industry insights. By engaging in meaningful projects, interns not only enhance their academic foundation but also cultivate invaluable experience. It's a bridge between classroom learning and professional skills, positioning students for success in their chosen fields while fostering a deeper connection between education and industry practices.

### Industrial Visit

Embarking on our annual Fourth Semester College Industrial Visit to renowned IT companies is an enriching experience for students. This immersive tour offers firsthand insights into the dynamic world of technology, fostering a deep understanding of industry practices. Our detailed plan ensures a comprehensive exploration, aligning with the curriculum. The participant list, along with parent consent, ensures a smooth and secure journey. Upon approval, students gain exclusive access to relevant industries and institutions, providing a unique platform to bridge academic knowledge with real-world applications. It's not just a tour; it's a gateway to knowledge, shaping the future tech leaders of tomorrow.

### 3.5 Indicate the content beyond syllabus imparted for the attainment of the COs/POs (15)

**Total Marks : 15.00**

Institute Marks : 15.00

(Describe the process that periodically documents and demonstrates how the programme curriculum is evolved considering the PEOs and the POs)

The MCA course not only covers the basics but also aims for top-notch placements. The Academic Committee dives into feedback from current students, alumni, and employers, pinpointing areas where the curriculum needs a boost. Together, we devise strategies to fill these gaps. Our dedicated faculty steps up, organizing Add-on courses, workshops, technical talks, and extra sessions. These activities, tailored to each subject, make sure students grasp concepts thoroughly, closing any curriculum loopholes. We urge students to turn theory into action with live projects and guide them to align with the latest tech trends in their final-year Seminars and Projects. Additionally, we encourage students to explore MOOC courses, filling academic gaps and staying ahead in the dynamic tech landscape. It's about going beyond the books and embracing real-world knowledge.

### Add-On Courses

The MCA department has consistently enriched the curriculum with dynamic add-on programs, offering a blend of theoretical and practical knowledge to augment the attainment of Course Outcomes (COs) and Program Outcomes (POs). These initiatives, spanning Advanced Web Development Technology, Expert Talk Series, and Introduction to Emerging Technologies, provide students with insights into industry advancements, research methodologies, and cutting-edge technologies.

Table 3.4 Details of Add-On

Sl No	Name of Add-on programs offered	Year of offering	No. of times offered during the same year	Duration of course	Number of students enrolled in the year	Number of Students completing the course in the year
1	Advanced Web Development Technology	2023-24	1	30 hours	57	57
2	Expert Talk Series  <i>Health Effects of Electromagnetic Radiation</i> <i>Scientific Publications</i> <i>Effective Utilization Of E-Resources for a Valuable Research Paper</i> <i>Personality Development</i>	2022-23	1	30 hours	88	88

	Introduction to Emerging Technologies in Industry and Research					
3	<i>Introduction To Data Science Predictive Analysis Supervised Learning Algorithms Unsupervised Learning Algorithms Advanced Software Engineering Tools Deep Learning</i>	2021-22	1	36 hours	33	33

### Workshops

Technical workshops play a pivotal role in our academic landscape, providing students with hands-on experiences and practical skills. These workshops, carefully designed and executed by our expert faculty, bridge the gap between theoretical knowledge and real-world applications. Emphasizing a dynamic learning environment, these sessions not only enhance student's understanding of complex concepts but also implant problem-solving abilities. The interactive nature of technical workshops fosters collaboration and encourages students to think innovatively, preparing them for the challenges of the ever-evolving technological landscape. These workshops contribute significantly to our commitment to delivering a comprehensive and industry-relevant education.

Table 3.5 Details of Workshops

Sl No	Start Date	End Date	Event Title	Resource Person
1	24-Jan-2023	27-Jan-2023	3-day workshop on "An Insight Into Academic Project Management"	Mr. Vishak M, Senior Developer, Dishasoft PVT Ltd.
2	22-Jan-2022	22-Jan-2022	One day workshop on python Django	Mr. Ajai Antony, Senior Developer, Dishasoft PVT Ltd.
3	17-Jun-2021	17-Jun-2021	Python workshop	Mr. Mannmohan, Alumni, SJCET
4	11-Jan-2021	16-Jan-2021	International Workshop On Machine Learning Applications- An International Perspective	Dr. Shailesh Sivan Assistant Professor, Cochin University of Science and Technology and Santhosh Kumar K P, Assistant Professor, Sacred Heart College, Thevara

### MOOC

Our commitment to academic excellence extends to leveraging cutting-edge resources such as MOOCs, notably NPTEL and SWAYAM. These platforms provide our students with unparalleled opportunities to engage in high-quality, specialized courses, enriching their understanding of critical subjects. By incorporating NPTEL and SWAYAM into our curriculum, we ensure that our students not only meet but exceed national standards. This proactive integration enhances the overall educational experience, fostering a culture of continuous learning and adaptability, crucial in today's rapidly evolving technological landscape.

Table 3.6 Details of NPTEL -SWAYAM Courses.

2023-24					
Sl No	Name	Course	Week	Date	Batch
1	Mohammed Noorudheen. M.T.	Cloud Computing	12	Sept-Oct 2023	2022-24
2	Muhammed Hisham. K.P	Cloud Computing	12	Sept- Oct 2023	2022-24
3	Nafeesath Neema	Cloud Computing	12	Sept- Oct 2023	2022-24
4	Riya Roy	Cloud Computing	12	Sept- Oct 2023	2022-24
5	Roshni Mathew	Cloud Computing	12	Sept- Oct 2023	2022-24
6	Sandhra Maria Saji	Cloud Computing	12	Sept- Oct 2023	2022-24

7	Sona Mariya John	cloud computing	12	Sept- Oct 2023	2022-24
8	Christin Benny	Database Management System	8	Sept- Oct 2023	2022-24
9	J Siddharth	Database Management System	8	Sept- Oct 2023	2022-24
10	Anilmon J	Database Management System	8	July -Sept 2023	2022-24
11	Ashin Siby	Database Management System	8	Sept - Oct 2023	2022-24
12	Megha Praveen	Database management system	8	July -Sept 2023	2022-24
13	Saranya Mohan	Database Management System	8	July -Sept 2023	2022-24
14	Shanu P J	Database Management System	8	July -Sept 2023	2022-24
15	Emmanuel A	Database Management System	8	July -Sept 2023	2022-24
16	Nihad K	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
17	Megha Praveen	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
18	Nafeesath Neema	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
19	Gopika Unnikrishnan	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
20	Saranya Mohan	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
21	Shanu P J	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
22	Gopika Unnikrishnan	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
23	Febin Fathima	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
24	Krishnapriya V S	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
25	Riya Roy	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
26	Vidhyamol M S	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
27	J Siddharth	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
28	Blessey Maria Kurian	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
29	Mohammed Noorudheen Mt	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
30	Ameekha Unussaleem	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
31	Anjala Michael	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
32	Angela Mathew	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
33	Muhammed Hisham K. P	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
34	Annjish Kunjumon	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
35	Lakshmi Hari	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
36	Abhijith AB	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
37	Aparna Jayakumar	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
38	Ajesh B Nair	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
39	Ashish P S	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24

40	Aparna Mohan	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
41	Athul Ajay	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
42	Aswathy Chandran	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
43	Bismil Fahid.A.P	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
44	Jefin Jose	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
45	Thasneem T S	Introduction to Internet of Things	12	Jul-Oct 2022	2022-24
46	Sharath Saji	The Joy of Computing Using Python	12	Sept- Oct 2023	2022-24

**2022-23**

Sl No	Name	Course	Week	Date	Batch
1	Ajesh B Nair	Cloud Computing	12	Jan - April 2023	2022-24
2	Ameekha Unussaleem	Cloud Computing	12	Jan-Apr 2023	2022-24
3	Anilmon J	Cloud Computing	12	Jan-Apr 2023	2022-24
4	Anjala Michael	Cloud Computing	12	Jan-Apr 2023	2022-24
5	Anna Jose	Cloud Computing	12	Jan-Apr 2023	2022-24
6	Anna Jose	Cloud Computing	12	Jan - April 2023	2022-24
7	Anumol Thomas	Cloud Computing	8	Jan-Apr 2023	2022-24
8	Ashin Siby	Cloud Computing	12	Jan-Apr 2023	2022-24
9	Ashish Ps	Cloud Computing	12	Jan-Apr 2023	2022-24
10	Athul Ajay	Cloud Computing	12	Jan-Apr 2023	2022-24
11	Bismil Fahid. A.P	Cloud Computing	12	Jan-Apr 2023	2022-24
12	Christeena Joy	Cloud Computing	8	Jan-Apr 2023	2022-24
13	Christin Benny	Cloud Computing	12	Jan-Apr 2023	2022-24
14	Denzel Sunny	Cloud Computing	12	Jan-Apr 2023	2022-24
15	Denzel Sunny	Cloud Computing	12	Jan - Apr 2023	2022-24
16	Fathima Nahla. P.K	Cloud Computing	12	Jan-Apr 2023	2022-24
17	Febin Fathima	Cloud Computing	12	Jan-Apr 2023	2022-24
18	George Francis	Cloud Computing	12	Jan-Apr 2023	2022-24
19	George Francis	Cloud Computing	12	Jan - April 2023	2022-24
20	Georgekutty Biju	Cloud Computing	12	Jan-Apr 2023	2022-24
21	Gokul Biju	Cloud Computing	12	Jan-Apr 2023	2022-24
22	Gokul Sali Rajan	Computer Graphics	12	Jan-Apr 2023	2022-24
23	Jayamol Remesan	Cryptography and Network Security	12	Jan-March 2023	2022-24
24	Jom Binoy	Cryptography and Network Security	12	Jan-March 2023	2022-24
25	Kishor Vinod	Cryptography and Network Security	8	Jan-March 2023	2022-24
26	Martin Siby	Cryptography and Network Security	12	Jan-March 2023	2022-24
27	Sanup	Cryptography and Network Security	12	Jan-April 2023	2022-24
28	Abin Roy	Cryptography and Network Security	12	Jul-Oct 2022	2021-23
29	Amrutha Biju	Data Science - For Engineers	8	Jul-Sep 2022	2021-23

30	Anandhu Vs	Database Management System	12	Jul-Oct 2022	2021-23
31	Anjali Aneesh	Database Management System	8	Jul-Sep 2022	2021-23
32	Anjali Aneesh	Database Management System	12	Jul-Oct 2022	2021-23
33	Anumol Mathew	Database Management System	12	Jul-Oct 2022	2021-23
34	Ardra P Das	Database Management System	12	Jul-Oct 2022	2021-23
35	Arun Abraham	Deep Learning	12	Jul-Oct 2022	2021-23
36	Aryamol Vs	Discrete Mathematics	12	Jul-Oct 2022	2021-23
37	Athira Anil	Discrete Mathematics	12	Jul-Oct 2022	2021-23
38	Athulya Saji	Discrete Mathematics	12	Jul-Oct 2022	2021-23
39	Biyons Kp	Discrete mathematics	12	Jul-Oct 2022	2021-23
40	Biyons Kp	Introduction to 40. and industrial IOT	12	Jul-Oct 2022	2021-23
41	Chandu Lal	Introduction to Industry 4.0 & Industrial I.O.T.	12	Jul-Oct 2022	2021-23
42	Chelsa Jeres	Introduction to the Internet of Things	12	Jul-Oct 2022	2021-23
43	Gopika Vijayan	Introduction to the Internet of Things	12	Jul-Oct 2022	2021-23
44	Jinson Jacob	Introduction To Internet of Things	12	Jul-Oct 2022	2021-23
45	Jomon Sebastian	Introduction to the Internet of things	12	Jul-Oct 2022	2021-23
46	Jomon Sebastian	Introduction to the internet of things	12	Jul-Oct 2022	2021-23
47	Joyal Jose	Introduction to the internet of things	12	Jul-Oct 2022	2021-23
48	Judith Sara Sabu	Introduction to IOT	12	Jul-Oct 2022	2021-23
49	Krishna Nandha E	Introduction to IOT	12	Jul-Oct 2022	2021-23
50	Martin Abraham	Introduction to IOT	12	Jul-Oct 2022	2021-23
51	Martin Abraham	Introduction to IOT	12	Jul-Oct 2022	2021-23
52	Mathew G Kurian	Introduction to IOT	8	Jul-Sep 2022	2021-23
53	Mathew G Kurian	Introduction to IOT	12	Jul-Oct 2022	2021-23
54	Mathu S Kulathumkal	Introduction to ML	12	Jul-Oct 2022	2021-23
55	Meera S	Introduction To OS	12	Jul-Oct 2022	2021-23
56	Prathibha Prakash	Introduction to programming in C	12	Jul-Oct 2022	2021-23
57	Rahul Ms	Problem Solving Through Programming in C	12	Jul-Oct 2022	2021-23
58	Rintu Raju	Problem Solving Through Programming in C	12	Jul-Oct 2022	2021-23
59	Shemil Tom	Problem Solving Through Programming in C	12	Jul-Oct 2022	2021-23
60	Shemil Tom	Problem Solving Through Programming in C	12	Jul-Oct 2022	2021-23
61	Sherin Mathew	Software Testing	12	Jul-Oct 2022	2021-23
62	Sivapriya Rajan	Software Testing	12	Jul-Oct 2022	2021-23
63	Teena Tom	The Joy of Computing Using Python	12	Jul-Oct 2022	2021-23
64	Tomin Thomas	The Joy of Computing Using Python	12	Jul-Oct 2022	2021-23
65	Abin Roy	The Joy of Computing Using Python	8	Aug-Oct 2022	2021-23
66	Fayas Rasheed	The Joy of Computing Using Python	8	Aug-Oct 2022	2021-23

67	Janteen James	The Joy of Computing Using Python	8	Aug-Oct 2022	2021-23
68	Rahul Ms	The Joy of Computing Using Python	8	Aug-Oct 2022	2021-23
<b>2021-22</b>					
Sl No	Name	Course	Week	Date	Batch
1	Abhishek R	Cloud Computing	12	Jan-Apr 2022	2020-22
2	Abin George	Cloud Computing	12	Jan-Apr 2022	2020-22
3	Abin Jacob	Cloud Computing and Distributed system	12	Jan-Apr 2022	2020-22
4	Alan Shaji	Cloud Computing and Distributed system	12	Jan-Apr 2022	2021-23
5	Alex Sebastian	Cloud Computing and Distributed system	12	Jan-Apr 2022	2020-22
6	Amrutha Baju	Cloud Computing and Distributed system	8	Jan-Mar 2022	2021-23
7	Anakha Thomas	Cloud Computing and Distributed system	8	Jan-Mar 2022	2021-23
8	Anakha Thomas	Computer Architecture	12	Jan-Apr 2022	2021-23
9	Anu Sunny	Computer Network and IP	12	Jan-Apr 2022	2021-23
10	Anumol Mathe	Data Analytics with Python	12	Jan-Apr 2022	2021-23
11	Anunadh Rajesh	Deep Learning	12	Jan-Apr 2022	2020-22
12	Ardra P Das	Entrepreneurship Development	8	Jan-Mar 2022	2021-23
13	Aryamol Vs	Ethical Hacking	12	Jan-Apr 2022	2021-23
14	Athira Anil	Foundation of Cryptography	12	Jan-Apr 2022	2021-23
15	Athulya Saji	Foundation of Cryptography	12	Jan-Apr 2022	2021-23
16	Jayanthi Ts	Introduction to 40. and industrial IOT	12	Jan-Apr 2022	2020-22
17	Jerin Sebastian	Introduction to 40. and industrial IOT	12	Jan-Apr 2022	2020-22
18	Jinson Jacob	Introduction to 40. and industrial IOT	12	Jan-Apr 2022	2021-23
19	Johns Jose	Introduction to 40. and industrial IOT	12	jan-apr 2022	2020-22
20	Meera S	Introduction to 40. and industrial IOT	8	Jan-Mar 2022	2021-23
21	Milu Rose Mathew	Introduction to 40. and industrial IOT	12	Jan-Apr 2022	2020-22
22	Navya Xavier	Introduction to 40. and industrial IOT	12	Jan-Apr 2022	2020-22
23	Rintu Raju	Introduction to 40. and industrial IOT	12	Jan-Apr 2022	2021-23
24	Rinu Sebastian	Introduction to 40. and industrial IOT	12	Jan-Apr 2022	2020-22
25	Rony Kurian	Introduction to 40. and industrial IOT	12	Jan-Apr 2022	2020-22
26	Roshmi Roy	Introduction to Database System	12	Jan-Apr 2022	2020-22
27	Seby Sebastian	Introduction to Database System	12	Jan-Apr 2022	2020-22
28	Sivapriya Rajan	Introduction to Database System	8	Jan-Apr 2022	2021-23
29	Teena Anna Johnson	Introduction to IOT	12	Jan-Apr 2022	2020-22
30	Theresa Saji	Introduction to IOT	12	Jan-Apr 2022	2020-22
31	Tomin Thomas	Social Networks	12	Jan-Apr 2022	2021-23

2020-21					
Sl No	Name	Course		Date	Batch
1	Alphonse Baby	DBMS	8	Jul-Sep 2021	2020-22
2	Athira Jojo	DBMS	8	Jul-Sep 2021	2020-22
3	Christymol James	Entrepreneurship essentials	12	Jan-mar 2021	2020-22
4	Dona Augustine	Entrepreneurship essentials	12	Jan-Apr 2021	2020-22
5	Gopika Gopinathan	Entrepreneurship essentials	12	Jan-Apr 2021	2020-22

### FENSTRA-Technical Fest

FENSTRA, our annual MCA Technical fest, is a vibrant celebration orchestrated entirely by our students. This immersive technical extravaganza serves as a platform for students to explore cutting-edge technology, showcasing their skills in programming, website/software development, event organizing, and management. FENSTRA features captivating competitive events, including website development, algorithm design, and coding challenges, creating an atmosphere of healthy competition and innovation. These contests not only provide an exhilarating experience but also empower our students, offering an extra edge in their technical journey. FENSTRA stands as a testament to our commitment to fostering technical skills, boosting confidence, and keeping our students at the forefront of emerging technologies.

### Bridge courses for first year students

The department provides a robust bridge course aimed at strengthening students foundational skills for the demanding MCA curriculum. This comprehensive course explores into key areas such as C Programming and Data Structures, Operating Systems, and Mathematics, extending beyond the regular syllabus to equip students with practical competencies. By incorporating supplementary resources and reference books, students benefit from a well-rounded learning experience. The bridge course emphasizes a balanced blend of theoretical understanding and practical application. This preparatory step ensures that students are well-equipped to tackle the challenges of the MCA program with confidence and a solid understanding of the fundamental concepts covered in the bridge course.

### 3.6 Course Syllabi (5)

Total Marks : 5.00

Institute Marks : 5.00

(Include, in appendix, a syllabus for each course used. Syllabi format should be consistent and shouldn't exceed two pages.)  
The syllabi format may include:

- Department, course number, and title of course
- Designation as a required or elective course
- Pre-requisites
- Contact hours and type of course (lecture, tutorial, seminar, project etc.,)
- Course Assessment methods (both continuous and semester-end assessment)
- Course outcomes
- Topics covered
- Text books, and/or reference material

File Name
<a href="#">MCA Syllabus- 2020 Scheme</a>

The Master of Computer Applications (MCA) program is governed by a well-defined structure and set of regulations to ensure academic excellence. The curriculum and syllabi are established by the Academic Council, subject to periodic updates. While the core courses provide a foundational understanding of computer science, the inclusion of innovative elective courses is facilitated based on recommendations from the Board of Studies and subsequent approval by the Academic Council.

In adherence to a common course structure, students engage with core and elective courses, along with laboratory sessions, mini projects, seminars, comprehensive viva, and a substantial main project. The credit system, dictated by specific Lecture-Tutorial-Practical schedules, ensures a balanced allocation based on weekly hours dedicated to each component. The maximum number of lecture and laboratory courses per semester is capped at 6 and 3, respectively. Additionally, students are permitted to register for up to 8 credits beyond the prescribed curriculum for a given semester.

English serves as the medium of instruction, examination, project work, seminars, and report presentations. The University retains the flexibility to revise regulations, the scheme of studies, examinations, and syllabi based on recommendations solely from the Board of Studies. This dynamic framework ensures the MCA program remains relevant, responsive, and aligned with evolving trends in the field of computer science.

### 4 Students' Performance (100)

Total Marks : 81.59

### Admission intake in the programme

Item	2023-24	2022-23	2021-22	2020-21	2019-20	2018-19
Sanctioned intake strength in the programme (N)	60	60	60	60	120	60
Total number of admitted students in first year minus number of students migrated to other programmes at the end of 1st year (N1)	60	57	43	54	25	47
Lateral Entry(N2)	0	0	0	0	0	0
Total number of students admitted in the program(N1 + N2)	60	57	43	54	25	47

**4.1 Success Rate (30)****Total Marks : 23.70**

Institute Marks : 23.70

Provide data for the past batches of students

Year of entry (in reverse chronological order)	Number of students admitted in 1st year (N1)	Number of students who have successfully completed		
		1st year	2nd year	3rd year
2023-24	60	0	0	0
2022-23	57	48	0	0
2021-22	43	30	33	0
2020-21(LYG)	54	48	45	45
2019-20(LYGM1)	25	17	14	14
2018-19(LYGM2)	47	45	46	46

Success rate =  $30 \times \text{mean of success index (SI)}$  for past three batches

SI = (Number of students who graduated from the programme in the stipulated period of

(course duration)/(Number of students admitted in the first year of that batch)

Item	LYG (2020-21)	LYGM1 (2019-20)	LYGM2 (2018-19)
Number of students admitted in the corresponding First Year	54.00	25.00	47.00
Number of students who have graduated in the stipulated period	45.00	14.00	46.00
Success index (SI)	0.83	0.56	0.98

Average SI	0.79
Success rate	23.70

**4.2 Academic Performance (30)****Total Marks : 23.70**

Institute Marks : 23.70

Assessment =  $3 * \text{API}$ 

Where API = Academic Performance Index

= Mean of Cumulative Grade Point Average of all successful

Students on a 10 point CGPA System

OR

= Mean of the percentage of marks of all successful students / 10

Item	2019-20	2018-19	2017-18
<b>Approximating the API by the following mid-point analysis</b>			
9 < Number of students with CGPA < 10	3.00	0.00	0.00
8 < Number of students with CGPA < 9	22.00	6.00	11.00
7 <= 8	20.00	8.00	31.00
6 <= 7	0.00	0.00	4.00
5 <= 6	0.00	0.00	0.00
Total	45.00	14.00	46.00
Approximating API By Mid-CGPA	0.00	0.00	0.00
Mean of CGPA/Percentage of all the students API	8.12	7.93	7.65
Assessment	24.36	23.79	22.95

Average assessment points	23.70
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**4.3 Placement and Higher Studies (20)****Total Marks : 14.19**

Institute Marks : 14.19

Assessment Points =  $20 \times (x + 1.25y)/N$ 

where, x = Number of students placed

y = Number of students admitted for higher studies with valid qualifying scores/ranks, and

N = Total number of students who were admitted in the batch subject to maximum assessment points = 20.

Item	LYG 2019-20	LYGm1 2018-19	LYGm2 2017-18
Number of admitted students corresponding to LYG including lateral entry (N)	54.00	25.00	47.00
Number of students who obtained jobs as per the record of placement office (x1)	20.00	7.00	4.00
Number of students who found employment otherwise at the end of the final year (x2)	16.00	10.00	26.00
Number of students who opted for higher studies with valid qualifying scores/ranks (y)	4.00	1.00	0.00
x=x1+x2	36.00	17.00	30.00
Assessment points	15.19	14.60	12.77

Average assessment points

14.19

**4.4 Professional Activities (20)****Total Marks : 20.00**

## 4.4.1 Professional societies / chapters and organising engineering events (3)

Institute Marks : 3.00

(Instruction: The institution may provide data for past three years).

A computer association named SMASH, Smart MCA Association of SJCET on Heights, is part of the Department of Computer Applications. The department organises seminars, presentations, and technical programmes in collaboration with SMASH to inspire students and enhance their interest in technology.

The following table shows the programmes that are organised in conjunction with SMASH.

Sl No	Date	Event	Resource Persons
1	21-11-23	Unlocking Innovation: Introduction to IEDC and Entrepreneurship	Prof. Sarju S.
2	09-11-23	Orientation Program- Introduction to MuLearn.	Prof. Sarju S.
3	09-09-2023 to 04-11-2023	Advanced Web Development Technologies	Mr. Vishak M
4	06-03-2023	Webinar- IPR and Cyber Law	Dr. Anandh Hareendran
		Techsphere- workshop series	Dr. Terry Jacob Mathew
5	09-03-2023	1. Cyber Security 2. Softskill Development 3. Anybody can Develop Apps 4. Blockchain for future	Prof. Babu Sankar S Prof. Sumithmon K.S Prof. Liz George
6	22-01-2022	One day workshop on python Django	Mr Ajai Antony
7	16-12-2022	Soft skills personality development for life success	Mr S Babu Sankar
8	16-03-2022	Computer hardware and networking	Mr Alex Jose
9	24-01-2023 to 27-01-2023	3 day workshop on "An Insight Into Academic Project Management"	Mr Vishak M
10	07-01-2023	The Express Way To Success And Happiness	Dr.Kurian Mattam
11	02-12-2022	Fenstra-Creative Coding	Mr Bibin George
12	02-11-2022	Exploring Django	Mr Praise Varghese
13	17-09-2022	Python workshop	Mr Mannmohan
14	28-09-2022	Employability in IT Industry	Mr Sarath Nair
15	11-05-2022	Health Effects Of Electromagnet Radiation	Mr Sabarinath G
16	06-05-2022	Scientific Publications	Mr Rajesh Baby
17	25-04-2022	Effective Utilization Of E-Resources for a Valuable Research Paper	Mr Justine Thomas
18	18-01-2022	Personality Development	Mr Babu Sankar
19	11-01-2021 to 16-01-2021	International Workshop On Machine Learning Applications-An International Perspective	Mr Shailesh Sivan, Mr Santhosh Kumar KP

Table 4.1: List of programs organized by the SMASH.

## 4.4.2 Organisation of paper contests, design contests, etc. and achievements (3)

Institute Marks : 3.00

(Instruction: The institution may provide data for past three years)

Students are encouraged by the department to plan and take part in intra- and inter-institutional competitions. This will improve the technical and managerial abilities of the pupils.

The departments competition is displayed in **Table 4.2**

Sl. No	Date	Item	Staff Coordinator	Student Coordinator	Remarks
1	16-01-2023	Quiz Competition	Ms. Liz George	Kishor Vinod, MCA 2022-24	Intra department contest
2	02-12-2022	Coding Competition	Mr. Anish Augustine	Anandhu V.S, MCA 2021-23	Inter institute

3	20-05-2022	Technical Treasure Hunt	Dr. Rahul Shajan	Arshad Dilaver, MCA 2021-23 Inter institute competition
4	20-05-2022	Debugging Competition	Mr. Alex Jose	Rony Kurian, MCA 2020-22 Inter institute competition

Table 4.2: List of contests organized by the department

## 4.4.3 Publication of technical magazines, newsletters, etc (3)

Institute Marks : 3.00

(Instruction: The institution may list the publications mentioned earlier along with the names of the editors, publishers, etc.).

- The department has taken advantage of the opportunity to issue a newsletter that includes the technological advancements or activities which we have undertaken or participated.

Details of the Newsletter's editorial board is given below

**Newsletter 2022-23: Editorial Board**

SI No	Role	Name	
1	Chief Editor	Mr. Anish Augustine (HoD in charge)	
2	Staff Editor	Mr. Sumithmon K.S (Assistant Professor)	
3	Student Editor	Gopika Vijayan (MCA 2021-23)	
4	Content Writer	Kishor Vinod (MCA 2022-24)	Mohammed Noorudheen M.T (MCA 2022-24)
5	Designer	George Francis (MCA 2022-24)	Krishnananda E (MCA 2021-23)

Table 4.3: Editorial Board 2022-23

**Newsletter 2021-22: Editorial Board**

SI No	Role	Name	
1	Chief Editor	Mr. Anish Augustine (HoD in charge)	
2	Staff Editor	Mr. Sumithmon K.S (Assistant Professor)	
3	Student Editor	Iruthik Shankar (MCA 2020-22)	
4	Content Writer	Bhanumathi Mohan (MCA 2020-22)	Mathu S Kulathumkal (MCA 2021-23)
5	Designer	Biyons K.P (MCA 2021-23)	Chelsa Jerome (MCA 2021-23)

Table 4.4: Editorial Board 2021-22

**Newsletter 2020-21: Editorial Board**

SI No	Role	Name	
1	Chief Editor	Dr. Jainendrakumar T.D (Head)	
2	Staff Editor	Mr. Sumithmon K.S (Assistant Professor)	
3	Student Editor	Visakh T. S (MCA 2019-22)	
4	Content Writer	Iruthik Shankar (MCA 2020-22)	Bhanumathi Mohan (MCA 2020-22)
5	Designer	Bibin Benny (MCA 2019-22)	Femi Francis (MCA 2019-22)

Table 4.5: Editorial Board 2020-21

**Newsletter 2019-20: Editorial Board**

SI No	Role	Name	
1	Chief Editor	Dr. Jainendrakumar T.D (Head)	
2	Staff Editor	Mr. Sumithmon K.S (Assistant Professor)	
3	Student Editor	Abin T John (MCA 2018-20)	
4	Content Writer	Viswamol Vishambharan (MCA 2018-20)	Jissin Michael (MCA 2019-22)
5	Designer	Femi Francis (MCA 2019-22)	Amal Tenson (MCA 2019-22)

Table 4.6: Editorial Board 2019-20

- The Computer Applications Departments students participated in several conferences and had their work published in variety of publications.

The students involvement in technical paper publishing is displayed in the following list.

SI No	Paper Title	Student Author	Journal Name/ Conference Name	Year	ISSN
1	A Systematic Review of Threats in Data Sharing	Prathibha Prakash	International Conference on Advanced Computing and	March 2023	ISSN: 2455-2631

			Communication Technology-2023		
2	A Systematic Study on Cyber Attacks on Medical Data	Meera S	International Conference on Advanced Computing and Communication Technology-2023	March 2023	ISSN: 2455-2631
3	Study on Current trends in Deep Learning for autonomous driving	Sivapriya Rajan	International Conference on Advanced Computing and Communication Technology-2023	March 2023	ISSN: 2455-2631
4	Diabetes prediction using machine learning	Rintu Raju	International Conference on Advanced Computing and Communication Technology-2023	March 2023	ISSN: 2455-2631
5	Deep Learning to identify plant species	Fayas Rasheed	International Conference on Advanced Computing and Communication Technology-2023	March 2023	ISSN: 2455-2631
6	Systematic study of sentiment analysis for consumer review	Gopika Vijayan	International Conference on Advanced Computing and Communication Technology-2023	March 2023	ISSN: 2455-2631
7	A Survey of Neuromorphic Computing and Neural Networks in Hardware	Reshma Roy	International Conference on Advanced Computing and Communication Technology-2023	March 2023	ISSN: 2455-2631
8	Study on 'Does Electric Vehicle can sustain the equilibrium of environment'	Arshad Dilaver	International Conference on Advanced Computing and Communication Technology-2023	March 2023	ISSN: 2455-2631
9	A Survey on the challenges in Hybrid Recommendation System	Bhanumathi Mohan	International conference on Scientific and Technological Advancements for Reliable and Sustainable Future	Nov 2022	ISBN: 978-81-959260-4-6
10	A Survey on the Implementation of Artificial Intelligence in Agriculture	Dona George	Journal of Information and Computational Science	2022	ISSN: 1548-7741
11	Blockchain In Agriculture	Milu Rose Mathew	Journal of Information and Computational Science	2022	ISSN: 1548-7741
12	Comparative study of Authorship Identification using Machine Learning Technique	Alphonse Baby	SJCET Journal of Engineering and Management	2023	ISSN: 2394-8647

Table 4.7: Student Publications

## 4.4.4 Entrepreneurship initiatives, product designs, and innovations (3)

Institute Marks : 3.00

(Instruction: The institution may specify the efforts and achievements.)

The SJCET Startup Bootcamp- IEDC (Innovation and Entrepreneurship Development Centre) is a part of the Kerala Startup Mission initiative to develop a startup culture amongst students. Students have the chance to experiment and innovate at the IEDCs. The institution's IEDC received the Best Performing IEDC award in 2017 and 2019. SJCET Bootcamp is supported by the Department of Industries and Commerce and the institution's Innovation Council, Ministry of HRD. There are twelve companies founded and incubated in the SJCET Startup Bootcamp.

The Computer Applications department proactively encourages a positive entrepreneurial mindset among students by incorporating motivational classes into their academic curriculum. Prof. Sarju S., who is well-liked in the field, addressed MCA students on the same subject in sessions.

The following table lists the details of sessions addressed by Prof. Sarju S.

Sl No.	Date	Topic	Batch
1	20/12/2020	Initiatives of SJCET Bootcamp	MCA 2020-22
2	23/09/2021	Introduction to IEDC	MCA 2021-23
3	15/03/2023	Startup and Bootcamp	MCA 2022-24
4	21/11/2023	Unlocking Innovation: Introduction to IEDC and Entrepreneurship	MCA 2023-25

Table 4.8: Details of the Entrepreneurship initiatives

## 4.4.5 Publications and awards in inter-institute events by students of the programme of study (8)

Institute Marks : 8.00

(Instruction: The institution may provide a table indicating those publications for which students were awarded in the events/conferences organised by other institutes. A tabulated list of all other student publications may be included in the appendix.)

Students of the department participated in several intra-institutional and inter-institutional events, showcasing their caliber for success. Participation in inter-institute events is encouraged by the department, as it is a great initiative to develop confidence and a positive attitude towards the future. We also motivate students to participate in conferences and workshops to present and publish their projects and research publications.

The following table lists the details of students achievements

Sl. No	Achievements

1	Bhanumathi Mohan, MCA 2020-22 batch student pass APJAKTU Entrance examination for PhD, and secured rank 47.
2	Merin Babu, MCA 2023-25 batch student secured 2nd prize for the Quiz competition conducted by Saingits College
3	Visakh T. S, MCA 2019-22 batch student secured 1st prize in Project Competition conducted by Saint gits college
4	Abin Roy from 2021-23 batch successfully completed TWO MOOC courses on Descrete Mathematics and DBMS
5	Amrutha Biju from 2021-23 batch successfully completed TWO MOOC courses on Cloud Computing and Distributed system and Introduction To OS
6	Anakha Thomas from 2021-23 batch successfully completed TWO MOOC courses on Cloud Computing and Distributed system and Ethical Hacking
7	ANILMON J from 2022-24 batch successfully completed TWO MOOC courses on Database Management System and The Joy Of Computing Using Python
8	Anjali Aneesh from 2021-23 batch successfully completed TWO MOOC courses on Introduction to ML and Cryptography and Network Security
9	ANNA JOSE from 2022-24 batch successfully completed TWO MOOC courses on Introduction to Internet of Things and Introduction to Industry 4.0 & Industrial I.O.T.
10	Anu Sunny from 2021-23 batch successfully completed TWO MOOC courses on Introduction to Database System and Introduction to Database System
11	Anumol Mathew from 2021-23 batch successfully completed TWO MOOC courses on Introduction to Database System and Problem Solving Through Programming in C
12	Ardra P Das from 2021-23 batch successfully completed TWO MOOC courses on Cryptography and Network Security and Cloud Computing and Distributed system
13	Aryamol VS from 2021-23 batch successfully completed TWO MOOC courses on Cloud Computing and Introduction to IOT
14	ASHIN SIBY from 2022-24 batch successfully completed TWO MOOC courses on Database Management System and Introduction to Internet of Things
15	Athira Anil from 2021-23 batch successfully completed TWO MOOC courses on Cryptography and Network Security and Cloud Computing
16	Athulya Saji from 2021-23 batch successfully completed TWO MOOC courses on Cryptography and Network Security and Cloud Computing
17	Biyons KP from 2021-23 batch successfully completed TWO MOOC courses on Introduction to IOT and Cloud Computing
18	CHRISTIN BENNY from 2022-24 batch successfully completed TWO MOOC courses on Database Management Sysrem and The Joy Of Computing Using Python
19	DENZEL SUNNY from 2022-24 batch successfully completed TWO MOOC courses on The Joy Of Computing Using Python and Cloud Computing
20	GEORGE FRANCIS from 2022-24 batch successfully completed TWO MOOC courses on The Joy Of Computing Using Python and cloud computing
21	Jinson Jacob from 2021-23 batch successfully completed TWO MOOC courses on Introduction to 40. and industrial IOT and Introduction to IOT
22	Jomon Sebastian from 2021-23 batch successfully completed TWO MOOC courses on Cloud Computing and Introduction to IOT
23	Martin Abraham from 2021-23 batch successfully completed TWO MOOC courses on Cloud Computing and Introduction to IOT
24	Mathew G Kurian from 2021-23 batch successfully completed TWO MOOC courses on Computer Graphics and Introduction to IOT
25	Meera S from 2021-23 batch successfully completed TWO MOOC courses on Cryptography and Network Security and Cloud Computing and Distributed system
26	Rahul MS from 2021-23 batch successfully completed TWO MOOC courses on Deep Learnig and DBMS
27	Rintu Raju from 2021-23 batch successfully completed TWO MOOC courses on Problem Solving Through Programming in C and Introduction to Database System
28	Shemil Tom from 2021-23 batch successfully completed TWO MOOC courses on Introduction to IOT and Cloud Computing
29	Sivapriya Rajan from 2021-23 batch successfully completed TWO MOOC courses on Cryptography and Network Security and Cloud Computing and Distributed system
30	Tomin Thomas from 2021-23 batch successfully completed TWO MOOC courses on Problem Solving Through Programming in C and Computer Architecture

*Table 4.9: List of Students Achievements*

Details of certification courses completed by students of the department are shown in the following table.

Sl No.	Batch	No.of Certification Courses Completed	No.of Students Completed more than 1 certificate Course	No.of Students Completed 1 certificate Course
1	MCA 2022-24	43	6	31
2	MCA 2021-23	57	21	15
3	MCA 2020-22	21	-	21

*Table 4.10: Details of Certification Courses*

## 5 Faculty Contributions (175)

Total Marks : 106.40

### List of Faculty Members: Exclusively for the Programme / Shared with other Programmes

Name of the faculty member	Highest Qualification	University	Year of graduation	Designation	date of joining the institution	Distribution of teaching load (%)		Number of research publications in journals and conferences	IPRs	R&D and consultancy work with amount		Holding an incubation unit	Interaction with outside world
						MCA	Other			Funding Agency	Amount		
Prof.T.D Jainendrakumar	MCA/ME/ M Tech	Anna University	1985	Professor	01/07/2015	100.00	0.00	0	None	None	0.00	nil	None
Mr.Alex Jose	MCA/ME/ M Tech	Periyar University	2002	Assistant Professor	24/12/2004	100.00	0.00	0	None	None	0.00	nil	None
Ms.Liz George	MCA/ME/ M Tech	Cochin University	2007	Assistant Professor	14/06/2010	100.00	0.00	2	None	None	0.00	nil	Institution of eminence in India
Mr.Jose George	MCA/ME/ M Tech	Visvesvaraya Technological University	2004	Assistant Professor	01/06/2016	100.00	0.00	0	None	None	0.00	nil	None
Mr.Anish Augustine K	MCA/ME/ M Tech	Mahatma Gandhi University	2007	Assistant Professor	16/10/2016	100.00	0.00	0	None	None	0.00	nil	None
Mr.Akhil Sekharan	MCA/ME/ M Tech	Mahatma Gandhi University	2013	Assistant Professor	07/08/2017	100.00	0.00	0	None	None	0.00	nil	Institution of eminence in India
Mr.Sumithmon K.S	MCA/ME/ M Tech	Mahatma Gandhi University	2013	Assistant Professor	03/01/2018	100.00	0.00	0	None	None	0.00	nil	Institution of eminence in India
Fr.Jeethu Mathew	MCA/ME/ M Tech	Mahatma Gandhi University	2017	Assistant Professor	08/01/2018	100.00	0.00	0	None	None	0.00	nil	None
Dr.Rahul Shajan	PhD	Mahatma Gandhi University	2020	Assistant Professor	31/03/2021	100.00	0.00	1	None	None	0.00	nil	Institution of eminence in India

For CAYm1 2022-23

Name of the faculty member	Highest Qualification	University	Year of graduation	Designation	date of joining the institution	Distribution of teaching load (%)		Number of research publications in journals and conferences	IPRs	R&D and consultancy work with amount		Holding an incubation unit	Interaction with outside world
						MCA	Other			Funding Agency	Amount		
Mr.Alex Jose	MCA/ME/ M Tech	Periyar University	2002	Assistant Professor	24/12/2004	100.00	0.00	0	None	None	0.00	nil	None
Ms.Liz George	MCA/ME/ M Tech	Cochin University	2007	Assistant Professor	14/06/2010	100.00	0.00	2	None	None	0.00	nil	Institution of eminence in India
Mr.Anish Augustine K	MCA/ME/ M Tech	Mahatma Gandhi University	2007	Assistant Professor	16/10/2016	100.00	0.00	0	None	None	0.00	nil	Institution of eminence in India
Mr.Akhil Sekharan	MCA/ME/ M Tech	Mahatma Gandhi University	2013	Assistant Professor	07/08/2017	100.00	0.00	2	None	None	0.00	nil	Institution of eminence in India
Mr.Sumithmon K.S	MCA/ME/ M Tech	Mahatma Gandhi University	2013	Assistant Professor	03/01/2018	100.00	0.00	0	None	None	0.00	nil	Institution of eminence in India
Fr.Jeethu Mathew	MCA/ME/ M Tech	Mahatma Gandhi University	2017	Assistant Professor	08/01/2018	100.00	0.00	2	None	None	0.00	nil	None
Dr.Rahul Shajan	PhD	Mahatma Gandhi University	2020	Assistant Professor	31/03/2021	100.00	0.00	4	None	None	0.00	nil	Institution of eminence in India

For CAY 2023-24

Name of the faculty member	Highest Qualification	University	Year of graduation	Designation	date of joining the institution	Distribution of teaching load (%)		Number of research publications in journals and conferences	IPRs	R&D and consultancy work with amount		Holding an incubation unit	Interaction with outside world
						MCA	Other			Funding Agency	Amount		
Mr.Alex Jose	MCA/ME/ M Tech	Periyar University	2002	Assistant Professor	24/12/2004	100.00	0.00	0	None	None	0.00	nil	None
Ms.Liz George	MCA/ME/ M Tech	Cochin University	2007	Assistant Professor	14/06/2010	100.00	0.00	1	None	None	0.00	nil	Institution of eminence in India
Mr.Anish Augustine K	MCA/ME/ M Tech	Mahatma Gandhi University	2007	Assistant Professor	16/10/2016	100.00	0.00	0	None	None	0.00	nil	None
Mr.Akhil Sekharan	MCA/ME/ M Tech	Mahatma Gandhi University	2013	Assistant Professor	07/08/2017	100.00	0.00	1	None	None	0.00	nil	Institution of eminence in India

Mr.Sumithmon K.S	MCA/ME/ M Tech	Mahatma Gandhi University	2013	Assistant Professor	03/01/2018	100.00	0.00	2	None	None	0.00	nil	Institution of eminence in India
Fr.Jeethu Mathew	MCA/ME/ M Tech	Mahatma Gandhi University	2017	Assistant Professor	08/01/2018	100.00	0.00	1	None	None	0.00	nil	None
Dr.Rahul Shajan	PhD	Mahatma Gandhi University	2020	Associate Professor	31/03/2021	100.00	0.00	2	None	None	0.00	nil	Institution of eminence in India

**5.1 Student-Teacher Ratio (STR) (20)****Total Marks : 18.33**

Institute Marks : 18.33

STR is desired to be 15 or superior

Assessment =  $20 \times 15/\text{STR}$ ; subject to maximum assessment of 20

STR =  $(x + y + z)/N_1$

where,  $x$  = Number of students in 1st year of the programme $y$  = Number of students in 2nd year of the programme $z$  = Number of students in 3rd year of the programme $N_1$  = Total number of faculty members in the programme (by considering fractional load)

Year	X	Y	Z	N1	X+Y+Z	STR	Assessment
2021-22	60	60	0	9	120	13.33	20.00
2022-23	60	60	0	7	120	17.14	17.50
2023-24	60	60	0	7	120	17.14	17.50

Average assessment

18.33

 $N$  = Maximum { $N_1, N_2$ } $N_1$  = Total number of faculty members in the programme (considering the fractional load) $N_2$  = Number of faculty positions needed for student-teacher ratio of 15 ( Max(Sanctionedintake,Actualadmitted)/15)

Year	Sanctioned Intake	Actual Admitted	N1	N2	N=Max.(N1,N2)
2021-22	60	120	9	8	9
2022-23	60	120	7	8	8
2023-24	60	120	7	8	8

**5.2 Faculty Cadre Ratio (20)****Total Marks : 19.90**

Institute Marks : 19.90

Assessment	=	$20 \times \text{CRI}$
where, CRI	=	Cadre ratio index
	=	$2.25 \times (2A + B + 0.5C)/N$ ; subject to max. CRI = 1.0
where, A	=	Number of professors in the programme
B	=	Number of associate professors in the programme
C	=	Number of assistant professors in the programme

Year	A	B	C	N	CRI	Assessment
2021-22	1	0	8	9	1.00	20.00
2022-23	0	0	7	8	0.98	19.69
2023-24	0	1	6	8	1.00	20.00

Average assessment

19.90

**5.3 Faculty Qualifications (30)****Total Marks : 17.94**

Institute Marks : 17.94

Assessment	=	$3 \times \text{FQI}$
where, FQI	=	Faculty qualification index
	=	$(10x + 6y)/N_2$

where, x	=	Number of faculty members with PhD
y	=	Number of faculty members with MCA/ME/ M Tech

	X	Y	N	FQI	Assessment	
2021-22	1	8	9	6.44	19.33	
2022-23	1	6	8	5.75	17.25	
2023-24	1	6	8	5.75	17.25	
					Average assessment	17.94

**5.4 Faculty Competencies correlation to Programme Specific Criteria (15)****Total Marks : 15.00**

Institute Marks : 15.00

(Provide evidence that the programme curriculum satisfies the applicable programme criteria specified by the appropriate professional associations. You may list the programme specific criteria and the competencies, such as specialisation, research publication, course developments etc., of faculty to correlate the programme specific criteria and competencies.)

The curriculum of 2 year MCA program is designed and aligned by university inline with program specific criteria specified for computer professionals by various professional Associations

The Program curriculum is designed with domain areas as : Networking & Security , AI & Machine Learning, Software Engineering, Database Management and Data Mining.

**Professional Body Memberships: Faculty**

Sl.No	Name of Faculty	Professional Society Name	Membership Number
1	Mr.Alex Jose	Indian Society for Technical Education (ISTE)	LK 65552
2	Ms.Liz George	Indian Society for Technical Education (ISTE)	LM 104069
3	Dr Rahul Shajan	International Association of Engineers (IAENG)	Member No: 345270
4	Mr. Akhil Sekharan	International Association of Engineers (IAENG)	Member No: 345474

**Faculty Name: Dr.T.D Jainendrakumar****Domain Area: Software Engineering & Management****Qualifications:MCA, Ph.D(Honorary)****Research Area:Software Engineering****Research Publications:**

Project Stakeholder Management - Advisory Articles - Jainendrakumar - PM World, May 2016

Project Procurement Management for Project Managers - Advisory Articles - Jainendrakumar - PM World, November 2015

Project Risk Management - Advisory Articles - Jainendrakumar - PM World, October 2015

Project Communication Management for Project managers based on the PMBOK - Advisory Articles - Jainendrakumar - PM World, September 2015

Project Human Resource Management for Project Managers based on the PMBOK - Advisory Articles - Jainendrakumar - PM World, August 2015

Project Quality Management for Project Managers - Advisory Articles - Jainendrakumar - PM World, July 2015

Project Cost management for Project Managers based on PMBOK - Advisory Articles - Jainendrakumar - PM World, June 2015

Project Time Management in PMBOK for better Project Scheduling and Control - Advisory Articles - Jainendrakumar - PM World, May 2015

Project Scope Management in PMBOK made Easy - Advisory Articles - Jainendrakumar - PM World, April 2015

Project Integration Management: The Knowledge Area Exclusively for Project Managers - Advisory Articles - Jainendrakumar -PM World, March 2015

The Essence of PMBOK (Project Management is the Way of Life) - Commentaries - Jainendrakumar -PM World, February 2015

Why PMP Certification and How it Helps the Business - Commentaries - Jainendrakumar - PM World, January 2015

Why a Project/Program Manager with a PMP accreditation is a suitable candidate to become a CEO - Commentaries - Jainendrakumar - PM World, September 2008

Agile Software Project Management – Scrum methods - Advisory Articles - Jainendrakumar - PM World, August 2008

IT Project and Program Management – Best Practices - Featured Papers - Jainendrakumar - PM World, June 2008

SIX SIGMA vs. PMBOK: Complementary and Mutually Supporting Methodologies for Handling Projects - Featured Papers - Jainendrakumar - PM World, April 2008

The Project/Program Management Office (PMO) - Featured Papers - Jainendrakumar - PM World, January 2008

**Faculty Name: Mr.Alex Jose****Domain Area: Computer Networks****Qualifications:MCA, M.Phil**

**Research Area: Artificial Intelligence****Workshops & FDP's:**

9 days FDP on Curriculum framework in line with NEP 2020, OBE and AI Advancements organized by Mar Thoma College for Women in association with The Kerala State Higher Education Council (KSHEC)

KTU sponsored 5 Days FDP on “Block chain Technology and Its Applications” Organized by St. Joseph’s College of Engineering and Technology, Palai

AICTE sponsored 5 days short term training program on Wearable Devices’, organized by St.Joseph’s College of Engineering & Technology.

AICTE sponsored 6 days short term training program on ‘Blockchain Fundamentals’, organized by Saintgits college of Engineering.

AICTE sponsored 6 days short term training program on ‘Blockchain Applications’, organized by Saintgits college of Engineering.

6 Day Faculty Development Program on Blockchain Technology Organized by Finland Labs, in Association with National Social Summit, IIT Roorkee.

3 days FDP on Teaching Excellence and Methodologies - A short term course for the faculties of Engineering Colleges organized by Indian Society for Technical Education.

One Day National Seminar on Maintaining Quality and relevance in engineering education - sponsored by the All India Council for Technical Education and Indian Society for Technical Education.

3 days Workshop on cyber security and CCNSP essentials, organized by Elitecore, Bangalore

2 days Workshop on writing effective conference papers, Sponsored by IIT Bombay

2 weeks Workshop on Computer programming, Sponsored by IIT Bombay

2 weeks Workshop on Introduction to Design of Algorithms Sponsored by IIT Kharagpur

3 days Workshop on Learning and Development Intervention, organized by CLHRD, Mangalore

**Faculty Name: Dr.Rahul Shajan**

**Domain Area: Big Data**

**Qualifications:MCA, Ph.D**

**Research Area: Data Mining, Deep Learning, Recommendation systems**

**Conferences:**

Presented a paper titled” Study of the Relevance of Star Match in astrology by Applying Data mining techniques” in the International Conference on Bigdata and Cloud Computing (ICBDCC-2017), Organized by Karunya university, Coimbatore.

Presented a paper titled” A Study on Application of Data mining in Astrology” in the National Conference on Advanced Computing and Communication Technology (NCACC-2017) in association with CSI, organized by Santhigiri College, Vazhithala.

Participated in the UGC sponsored national conference on “Recent Trends in Data mining” (NCRTID’15) at BPC College, Piravom.

Participated in the UGC sponsored National conference on Artificial Intelligence (NCAI’16) at Department of Computer Sciences, Government College Nedumangad.

Presented a paper titled” A Review on current trends in Robotics” in the National Conference on Advanced Computing and Communication Technology (NCACC-2020) (as a Guide and Co-author), organized by Santhigiri College, Vazhithala.

Chaired the paper presentations in the international conference on “Intellectual Property Rights” Organized by Santhigiri College of Computer Sciences, vazhithala, on 20/02/2021.

Chaired the paper presentations in the National conference on “Emerging Computer Applications” Organized by Amal Jyothi College of Engineering and Technology, kanjirappilly, on 17th June 2021.

Chaired the paper presentations in the National conference on “Emerging Computer Applications” Organized by Amal Jyothi College of Engineering and Technology, kanjirappilly, on 15th June 2022.

Presented a paper titled by “Enhancing Book Recommendation Systems: A Comprehensive Review of Techniques and Evaluation Metrics in the national Seminar on Artificial intelligence and Machine Learning organized by Bharathmatha college Thrissakara and Kerala State Council for Science Technology and Environment.

**Workshops & FDP's:**

Participated in KTU sponsored 3 Day online FDP on “Mentoring and Thinking Skills for Engineering Faculty” Organized by Amal Jyothi College of Engineering and Technology, Kanjirappilly from 1/09/2021 to 3/09/2021.

Participated in One-week International FDP on “Advanced Research and Quality Publication” Organized by Federal Institute of Technology (FISAT), Ernakulam from 29/08/2022 to 02/09/2022.

Participated in a Two-week AICTE ATAL FDP on “Machine Learning for Interdisciplinary Engineering Applications” held in Department of Computer Science, CUSAT, Kerala from 12/09/2022 to 23/09/2022.

Completed NPTEL-AICTE FDP (Funded by MOE, Government of India) on “Deep Learning”. (Duration of corresponding NPTEL course is 12 weeks).

Participated in KTU sponsored 5 Days FDP on “Block chain Technology and Its Applications” Organized by St. Joseph’s College of Engineering and Technology, Palai from 16/01/2023 to 20/01/2023.

Participated in 3 Days FDP on “Data Science using Python” Organized by Mangalam College of Engineering and Technology, Ettumanoor from 24/01/2023 to 26/01/2023.

Participated in KTU sponsored 5 Days FDP on “Addressing Open Problems in Medical Domain through Artificial Intelligence” Organized by Department of Computer Science and Engineering, Muthoot Institute of Technology and Science from 30/01/2023 to 03/02/2023.

Completed NPTEL-AICTE FDP (Funded by MOE, Government of India) on “Data Base Management Systems” (Duration of corresponding NPTEL course is 8 week).

Participated in 7 Days online National level FDP on “Outcome Based Education OBE”organized by Nirmala College Muvattupuzha in association with The Kerala State Higher Education Council from 10/06/2023 to 17/06/2023.

Participated in One week online National level FDP on “Cloud Infrastructures (AWS)” organized by (VISTAS), TN in association with The Brainovision Solutions India Pvt Ltd and AICTE from 21/08/2023 to 25/08/2023.

Participated in 6 Days online FDP on “AI Trends and Industry Use Cases-Contemporary and Future “organized by Federal Institute of science and Technology FISAT, Angamaly from 25/09/2023 to 30/09/2023.

Participated in 7 Days online National level FDP on “Curriculum framework in line with NEP 2020, OBE and AI Advancements” organized by Mar Thoma College for Women, Perumbavoor in association with The Kerala State Higher Education Council from 12/10/2023 to 19/10/2023.

## **Workshops**

Participated in 3-day National Level Workshop on “Data Analytics and Machine Learning using R” Organized by School of Computer Sciences, MG University, Kottayam.

Participated in 2-day National level workshop on “Teaching Learning and Evaluation” Organized by Mar Augustinose College Ramapuram in Association with MG University, Kottayam on 28 and 29 October 2021

Participated in 2-day Indo-Taiwan online Workshop on “Intelligent Internet of Things” Jointly Organized by IIIT, Kottayam and the IEEE SPS Kerala Chapter on 27-28 October 2022.

## **Webinars**

Participated in a Webinar on “Ensemble learning- A Machine Learning Approach for Decision Making” Organized by MES College, Marampally on 17th July 2020.

Participated in a 3-day Webinar series on “Data Science and Artificial Intelligence” Organized by Santhigiri College of Computer Sciences, vazhithala from 6th August 2020 to 8th August 2020.

Participated in a Webinar on “Information Security” Organized by Al-Ameen College, Edathala on 16th August 2020.

Participated in a Webinar on “Intellectual Property Awareness Program” Organized by National IP Awareness mission, India on 11/03/2022.

Participated in a Webinar on “Endless Possibilities of AI” Organized by ASME SJCET and ASME FISAT on 29/09/2022

Participated in a Webinar on “How to Write And Publish A Research Article” Organized by Department of CS, SRM university-AP on 19th August 2023.

## **Certificate Courses**

Attended the 30 Hour course titled “Developing Web Applications using ASP.Net” By NIIT Academy.

Attended the 200 hours course titled “IT Finishing School (Advanced IT Technologies and Soft skills)” by Santhisoft Technologies, Vazhithala.

Completed certificate course on “Block Chain Basics” from Coursera.

Completed certificate course on “AI for Everyone” from Coursera.

Completed 12-week (Jul-Oct 2022) NPTEL course on “Deep Learning”

Completed 8-week (Jan-March 2023) NPTEL course on “Data Base Management Systems”.

## **Research Publications:**

Rahul Shajan, Gladston Raj S, Health Prediction in Astrology using Data Mining Techniques, International Journal of Advanced Research (2016), Volume 4, Issue 4, 680-683.

Rahul Shajan, Gladston Raj S, Association rule mining based Analysis on horoscope data- a perspective study, International Journal of Computer Engineering and Technology, 2017.

Rahul Shajan, Gladston Raj S, Horoscope Analysis and Astrological Prediction Using Biased Logistic Regression (BLR), International Journal of Innovative Technology and Exploring Engineering (IJITEE) Elsevier, Scopus ISSN 2278-3075, Volume 8, October 2019.

Published a paper titled “A Survey on the Implementation of Artificial Intelligence in Agriculture”, Journal of Information and Computational Science (JOICS), ISSN 1548-7741, Volume 12 Issue 12 – 2022.

Published a paper titled “Does EV can Sustain the Equilibrium of Environment”, International Journal of Scientific Development and Research (IJSRD), ISSN 2455-2631, Volume 3 Issue 3 –March 2023

Published a paper titled “A Survey on Diabetes Prediction Using Machine Learning”, International Journal of Scientific Development and Research (IJSRD), ISSN 2455-2631, Volume 3 Issue 3 –March 2023

Published a paper titled “Survey of Neuromorphic Computing and Neural Networks in Hardware”, International Journal of Scientific Development and Research (IJSRD), ISSN 2455-2631, Volume 3 Issue 3 –March 2023

Published a paper titled “A Study on Current Trends in Deep Learning for Autonomous Driving”, International Journal of Scientific Development and Research (IJSRD), ISSN 2455-2631, Volume 3 Issue 3 –March 2023

The paper “Addressing the Sparsity Challenge in Collaborative Filtering: Causes, Implications, and Solutions” got accepted in SJCET Journal 2023

**Faculty Name: Mr.Anish Augustine K**

**Domain Area: Machine Learning, Cryptography**

**Qualifications: MCA, Pursuing Ph.D**

**Research Area: Data Analytics**

**Workshops & FDP's:**

9 days FDP on Curriculum framework in line with NEP 2020, OBE and AI Advancements organized by Mar Thoma College for Women in association with The Kerala State Higher Education Council (KSHEC)

6 Days FDP 25th to 30th OCT 2023 on “AI Trends and Industry Use-cases contemporary and future” organized by Department Of Computer Applications FISAT & TCS Kochi.

KTU sponsored 5 Days FDP on “Block chain Technology and Its Applications” Organized by St. Joseph’s College of Engineering and Technology, Palai.

One week International FDP on “Advanced Research and Quality Publication” Organized by Federal Institute of Technology (FISAT), Ernakulam

6 days WORKSHOP on MACHINE LEARNING, organized as part of TEQIP

AICET Sponsored 5 Days FDP on MACHINE LEARNING

6 days FDP on Cyber Security Organized by TKM college, Kollam

7 days FDP on Big data Analytics organized by REVA University, Bangalore

AICTE sponsored 5 days FDP on Industrial Revolution 4.0

5 Days International FDP on Linux, organized by Marian College Kuttikanam in association with RedHat

6 days FDP on Recent Trends in IT organized by FISAT, Angamaly

**Faculty Name: Ms.Liz George**

**Domain Area: Machine Learning, Cryptography**

**Qualifications: MCA, UGC NET, Pursuing Ph.D**

**Research Area: Privacy in Blockchain**

**Conferences:**

Presented paper titled ‘SECURITY ASPECTS OF USING BLOCKCHAIN IN MANAGING HEALTHCARE INFORMATION’ in International Conference on Cyber Security and Ethical Hacking in Blockchain Technology organized by SCMS School of Technology and Management, Kochi.

Presented paper titled ‘ A Survey on the impact of blockchain in effective organ transplantation’ in the 2023 IEEE International Conference on Recent Advances in Systems Science and Engineering (RASSE), held at Saintgits College of Engineering

**Workshops & FDP's:**

9 days FDP on Curriculum framework in line with NEP 2020, OBE and AI Advancements organized by Mar Thoma College for Women in association with The Kerala State Higher Education Council (KSHEC)

KTU Sponsored 3 Days FDP on ‘Nature Inspired Machine Techniques in IoT’ organized by ‘Amal Jyothi College of Engineering & Technology

5 Days FDP on Advanced Research & Quality publications Organized by Federal Institute of Technology.

5 Days FDP on ‘A framework for Interoperable Blockchain to streamline supply chain communications’ organized by NIIT Puducherry, sponsored by IIT Kharagpur & Ministry of Education

AICTE sponsored 5 days short term training program on Wearable Devices’, organized by St.Joseph’s College of Engineering & Technology.

NPTEL MOOC course on Blockchain & its Applications

AICTE sponsored 6 days short term training program on ‘Blockchain Fundamentals’, organized by Saintgits college of Engineering.

AICTE sponsored 6 days short term training program on ‘Blockchain Applications’, organized by Saintgits college of Engineering.

AICTE sponsored 6 days short term training program on ‘Writing and Publishing High Impact Research Publications and Scientific Documents’, organized by Saintgits college of Engineering

Three day FDP on Research Methodology and Scientific Writing by Sreebudha College of Engineering, Pattur.

Five days FDP on Know Everything Related to Research organized by Ilahia College of Engineering.

5 days FDP on ‘Recent Trends and advancements in Information technology’, Organized by Federal Institute of Technology

6 Day Faculty Development Program on Blockchain Technology Organized by Finland Labs, in Association with National Social Summit, IIT Roorkee.

NPTEL MOOC Course on ‘Machine Learning’

5 Days summer School on ‘Deep Learning’ Organized by Department of Computer Applications, CUSAT

Two Week ISTE Workshop on ‘Computer Programming’ conducted by IIT Bombay

Two Week ISTE Workshop on ‘Introduction to Research Methodologies’ conducted by IIT Bombay

2 days Faculty development programme ‘FEEL Teacher’ organized by CLHRD

**Research Publications:**

Scrutinizing the Progress of Homomorphic Encryption Scheme in guaranteeing Data Privacy’ in International Journal of Innovative Science & Research Technology Volume 6, Issue 1 Jan 2021.

‘Evolution of Zero-Knowledge Proof (ZKP) and its role in Blockchain Applications for ensuring Data Privacy’ in ‘International Journal of Engineering Research and Development’, Volume 9, Issue 1 Jan 2021.

'A comparative study of Zero Knowledge Proof and Homomorphic Encryption in Guaranteeing Data Privacy in Blockchain Applications' in 'International Journal of Advanced Research', Volume 9, Issue 2, Feb 2021

'Blockchain In Agriculture' in Journal of Information and Computational Science, Volume 12 Issue 12 – 2022

'Systematic Study of Sentiment Analysis for Customer Review' in International Journal of Science & Engineering Development Research, Volume 8 Issue 3, March-2023

'Deep Learning to Identify Plant Species', in International Journal of Science & Engineering Development Research, Volume 8 Issue 3, March-2023

**Faculty Name:** Mr.Jose George

**Domain Area:** Big Data, Computer Graphics

**Qualifications:** MCA

**Research Area:** Data Analytics

#### Conferences:

Participated in AICTE sponsored National Conference on Predictive analysis organized by Saintgits College of Engineering, Kottayam

#### Workshops & FDP's:

5 days FDP on AI and Data Sciences: A pedagogical Approach Organized by St.Joseph's College of Engineering & Technology Palai

12 weeks NPTEL Course on Introduction to Internet of Things

TEQIP-II sponsored 5 days FDP on Python for Artificial Intelligence and Machine Learning organized by TKM College of Engineering, Kollam

47th ISTE National Annual Convention of 3 days at Saintgits College of Engineering

3 days FDP on concept coaching conducted by ICT Academy of Kerala

5 days FDP on 'Guidance & Counseling Series 3' organized by St.Jospeh's College of Engineering & Technology

**Faculty Name:** Mr.Akhil Sekharan

**Domain Area:** Algorithms, Cryptography

**Qualifications:** MCA, UGC NET, Pursuing Ph.D

**Research Area:** Data Security.

#### Conferences:

Participated in AICTE sponsored National Conference on Predictive analysis organized by Saintgits College of Engineering, Kottayam

Presented paper titled 'TBSA: Ensuring Secure Data Communication in Wireless Sensor Network' in the 2023 IEEE International Conference on Recent Advances in Systems Science and Engineering (RASSE), held at Saintgits College of Engineering

#### Workshops & FDP's:

5 days FDP on Guidance and Counseling organized by St.Joseph's College of Engineering & Technology.

5 days FDP on BlockChain organized by CUSAT, Cochin

5 days FDP on Mathematics for Research organized by Sree Buddha College, Alappuzha

5 days FDP on Machine Learning Applications and Industrial Perspective organized by SJCET Palai

5 days FDP on Exploring Image Processing and Computer Vision using Python organized by College of Engineering Kidangoor

5 days FDP on Advances in Natural Language Processing using AI organized by Vimal Jyothi College of Engineering in association with Computer Society of India

5 days FDP on Artificial Intelligence & Applications organized by Marian Engineering College, Trivandrum

KTU Sponsored 5 days FDP on Blockchain Technology & its Applications organized by St.Joseph's College of Engineering & Technology.

KTU Sponsored 5 days FDP on Addressing Open Problems in Medical Domain through AI Organized by Muthoot Institute of Technology and Science, Kochi

5 days FDP on Cloud Infrastructure (AWS) organized by Vels Institute Of Science, Technology And Advanced Studies (Vistas), Tamil Nadu

1 day webinar on Steps to Research organized by Amal Jyothi college, in association with IIT Bombay

2 days Workshop on Python Programming organized by ICT Academy, Technopark

1 week Talk Series on Everyone can do Quality Research- organized by KITBS, Selam

1 day Workshop on Theoretical Computer Science- Challenges and Opportunities organized by Saintgits Kottayam

1 day Workshop on Research Methodology- Writing Effective Research Article & Funding Proposals organized by VISAT Engineering College

2 days Workshop on Research Paper Writing organized by Mea Engineering College Perinthalmanna.

#### Research Publications:

**Faculty Name:** Mr.Sumithmon K.S**Domain Area:** Web Mining, Recommendations systems**Qualifications:** MCA, Pursuing Ph.D**Research Area:** Data Mining**Conferences:**

Participated in AICTE sponsored National Conference on Predictive analysis organized by Saintgits College of Engineering, Kottayam.

Presented a paper titled by "Enhancing Book Recommendation Systems: A Comprehensive Review of Techniques and Evaluation Metrics" in the national Seminar on Artificial intelligence and Machine Learning organized by Bharathmatha college Thrikkakara and Kerala State Council for Science Technology and Environment.

**Workshops & FDP's:**

5 days FDP on Android Developer Fundamentals organized by Mangalam College of Engineering Ettumanoor

TEQIP-II sponsored 5 days FDP on Python for Artificial Intelligence and Machine Learning organized by TKM College of Engineering, Kollam

5 days FDP on Robotics and Automation organized by Vellore Institute of Technology - VIT Chennai

5 days FDP on Recent Trends and Advancement in IT organized by Federal Institute of Science and Technology, Ernakulam

AICTE sponsored 6 days FDP on Blockchain fundamentals organized by Saintgits College of Engineering, Kottayam

AICTE sponsored 6 days FDP on Blockchain Application organized by Saintgits College of Engineering, Kottayam

ICFOSS sponsored 3 days FDP on System Administration and networking Using FOSS tools organized by College of Engineering Attingal

KTU sponsored 3 days FDP on Mentoring and Thinking Skills for Engineering of faculty organized by Amal Jyothi College of Engineering, Kanjirappally

5 days ATAL FDP on Mathematical Foundation for Machine Learning organized by Sree Buddha College of Engineering, Pattor

5 days ATAL FDP on Internet of Things (IoT) - A Practical Approach organized by Maharaja Surajmal Institute of Technology.

5 days FDP on Insight of research, publication and patent filing organized by Carmel College of Engineering and Technology - [CCET] Punnappa

5 days FDP on Advanced research and quality publication organized by Federal Institute of Science and Technology, Ernakulam

KTU sponsored 5 days FDP on Blockchain Technology and its Application organized by St. Josephs College of Engineering and Technology, Palai

3 days FDP on Data Science using Python organized by Mangalam College of Engineering Ettumanoor

KTU sponsored 3 days FDP on Nature Inspired Machine Learning Techniques in IOT organized by Amal Jyothi College of Engineering , Kanjirappally

12 Week NPTEL MOOC course on Deep Learning

6 Days FDP on AI Trends & Industry use cases- Contemporary & Future organized by Federal Institute of Science & Technology.

3-day national seminar and workshop on Artificial Intelligence and Machine Learning.

**Research Publications:**

The paper "Addressing the Sparsity Challenge in Collaborative Filtering: Causes, Implications, and Solutions" got accepted in SJCET Journal 2023

**Faculty Name:** Fr.Jeethu Mathew**Domain Area:** Web Mining, Recommendations systems**Qualifications:** MCA, Pursuing Ph.D**Research Area:** Data Mining**Workshops & FDPs:**

A six days STTP on "IoT and Data Science" conducted by Department of Electronics and Communication Engineering, St. Joseph's College of Engineering and Technology Palai

A six days online international workshop on "Machine Learning Applications-an Industrial Perspective" organized by Department of MCA, St. Joseph's College of Engineering and Technology Palai

A six days STTP on "Incorporating the Techniques of Blockchain and Artificial Intelligence to face the Security and Privacy challenges of IT Infrastructure – International Practices and Experiences" organized by KCG College of Technology Chennai

A five days FDP on "Analysis and Implementation of Data Security on Hosts and Networks" organized by Department of computer science and engineering, Muthoot Institute of Technology and Science.

A five days online faculty development program on “Infrastructure and Security Challenges in Cloud Computing” organized by Department of computer science and engineering, SCMS School of Engineering and Technology Karukutty .

A five days FDP on “AI into Data Science: A Pedagogical Approach” organized by the Department of Electronics and Communication engineering, St. Joseph’s College of Engineering and Technology Palai.

A six days STTP on “Artificial Intelligence and Applications” organized by the Department of computer science and engineering, Marian Engineering College Trivandrum.

A seven days orientation programme on “Anaconda- Data Science Techniques” organized by IFET College of Engineering Villupuram, Tamilnadu.

A seven days National FDP on “Pedagogy and Learning: Mapping New Approaches” organized by IQAC, Jyoti Nivas College Autonomous Bengaluru.

A five days ATAL Academy Online Elementary FDP on “Wearable Devices” conducted by St. Joseph’s College of Engineering and Technology, Palai.

A six days orientation programme on “Recent Advancements in Deep Learning” organized by Anuraag Engineering College, Ananthagiri,Telangana.

A five days FDP on “Patents and Innovative Teaching and Research Methodology” organized by Department of Computer Science (SF II), Bishop Heber College Trichy.

A five days International FDP on “Advance Research and Quality Publication” conducted by Federal Institute of Science and Technology Ernakulam.

A seven says National Level Faculty Development Program on Outcome Based Education (OBE) organized by St. James College of Nursing and St. James College of Pharmaceutical Sciences, Chalakudy in association with The Kerala State Higher Education Council.

A Seven days Faculty Development Programme on OpenAI for Academicians conducted by the Department of Data Science, St Joseph’s College Trichy.

#### **Research Publications:**

A Survey on the Challenges in Hybrid Recommendation System in the Proceedings of the International Conference on Scientific and Technological Advancements for Reliable and Sustainable Future conducted by the Deanery of Academics and All Science Departments, Bishop Heber College Trichy Jeethu Mathew, Dr. Jemima Priyadarsini R, Banumati Mohan, Vol. 9, p 107, 2022.

Jeethu Mathew, and J. . Priyadarsini R. “A Generalized Renyi Joint Entropy Method for the Detection of DDoS Attacks in IoT”. International Journal on Recent and Innovation Trends in Computing and Communication, vol. 11, no. 6, July 2023, pp. 248-52, doi:10.17762/ijritcc.v11i6.7559.

Jeethu Mathew, and J. . Priyadarsini R “Efficient DDOS Detection in Internet of Medical Things using CNNACL Approach”. International Journal of INTELLIGENT SYSTEMS AND APPLICATIONS IN ENGINEERING vol. 11 no.4 pp.772-799

#### **5.5 Faculty as participants/resource persons in faculty development/training activities (15)**

**Total Marks : 11.31**

Institute Marks : 11.31

(Instruction: A faculty member scores maximum five points for a participant/resource person.)

Participant/resource person in two week faculty development programme : 5 points

Participant/resource person in one week faculty development programme : 3 Points

File Name
<a href="#">Dr.Rahul Shajan-FDP Participation</a>
<a href="#">Fr.Jeethu Mathew-FDP Participation</a>
<a href="#">Prof.Akhil Sekharan-FDP Participation</a>
<a href="#">Prof.Alex Jose- FDP Participation</a>
<a href="#">Prof.Anish Augustine K-FDP Participation</a>
<a href="#">Prof.Jose George- FDP Participation</a>
<a href="#">Prof.Sumithmon K.S-FDP Participation</a>
<a href="#">Prof. Liz George-FDP Participation</a>

Name of the faculty	max. 5 per faculty		
	2021-22	2022-23	2023-24
Dr.Rahul Shajan	3.00	5.00	5.00
Fr.Jeethu Mathew	5.00	5.00	3.00
Mr.Akhil Sekharan	3.00	5.00	3.00
Mr.Alex Jose	3.00	3.00	3.00
Mr.Anish Augustine K	3.00	5.00	5.00
Mr.Jose George	5.00	0.00	0.00
Mr.Sumithmon K.S	5.00	5.00	5.00
Ms.Liz George	5.00	5.00	5.00
Prof.T.D Jainendrakumar	0.00	0.00	0.00

Sum	32.00	33.00	29.00
N	9.00	8.00	8.00
Assessment = $3 \times \text{Sum}/N$	10.67	12.38	10.88
	Average assessment		11.31

**5.6 Faculty Retention (15)****Total Marks : 12.67**

Institute Marks : 12.67

Assessment =  $3 \times \text{RPI}/N$ 

where RPI = Retention point index

= Points assigned to all faculty member

where points assigned to a faculty member = 1 point for each year of experience at the institute but not exceeding 5.

Item	2021-22	2022-23	2023-24
Number of faculty members with experience of less than 1 year (x0)	0.00	0.00	0.00
Number of faculty members with 1 to 2 years experience (x1)	0.00	0.00	0.00
Number of faculty members with 2 to 3 years experience (x2)	1.00	1.00	1.00
Number of faculty members with 3 to 4 years experience (x3)	0.00	0.00	0.00
Number of faculty members with 4 to 5 years experience (x4)	0.00	0.00	0.00
Number of faculty members with more than 5 years experience (x5)	8.00	6.00	6.00
N	9.00	8.00	8.00
RPI = $x1 + 2x2 + 3x3 + 4x4 + 5x5$	42.00	32.00	32.00
Assessment	14.00	12.00	12.00

Average assessment 12.67

**5.7 Faculty Research Publications (FRP) (20)****Total Marks : 7.69**

Institute Marks : 7.69

(Instruction: A faculty member scores maximum five research publication points depending upon the *quality* of the research papers and books published in the past three years.)

The research papers considered are those (i) which can be located on the internet and/or are included in hard-copy volumes/proceedings, published by reputed publishers, and (ii) the faculty member's affiliation, in the published papers/books, is of the current institution.

Include a list of all such publications and IPRs along with details of DOI, publisher, month/year, etc.

File Name
<a href="#">Dr.Rahul Shajan-Publications</a>
<a href="#">Fr.Jeethu Mathew-Publication</a>
<a href="#">Prof.Akhil Sekharan- Publication</a>
<a href="#">Prof.Liz George-Publications</a>
<a href="#">Prof.Sumithmon K.S-Publication</a>

Name of the Faculty (contributing to FRP)	FRP points (max. 5 per faculty)		
	2021-22	2022-23	2023-24
Dr.Rahul Shajan	3.00	5.00	5.00
Fr.Jeethu Mathew	0.00	5.00	3.00
Mr.Akhil Sekharan	0.00	5.00	3.00
Mr.Sumithmon K.S	0.00	0.00	5.00
Ms.Liz George	5.00	5.00	3.00
Mr.Alex Jose	0.00	0.00	0.00
Mr.Anish Augustine K	0.00	0.00	0.00
Mr.Jose George	0.00	0.00	0.00
Prof.T.D Jainendrakumar	0.00	0.00	0.00
Sum	8.00	20.00	19.00
N	9.00	8.00	8.00
Assessment of FRP = $4 \times \text{Sum}/N$	3.56	10.00	9.50

Average assessment 7.69

**5.8 Faculty Intellectual Property Rights (FIPR) (10)****Total Marks : 0.00**

Institute Marks : 0.00

Assessment of FIPR =  $2 \times (\text{Sum of the FIPR points scored by each faculty member})/N$ 

(A faculty member scores maximum five FIPR points each year. FIPR includes awarded national/international patents, design, and copyrights.)

Name of faculty member (contributing to FIPR)	FIPR points (max. 5 per faculty member)		
	2021-22	2022-23	2023-24
Dr.Rahul Shajan	0.00	0.00	0.00
Fr.Jeethu Mathew	0.00	0.00	0.00
Mr.Akhil Sekharan	0.00	0.00	0.00
Mr.Alex Jose	0.00	0.00	0.00
Mr.Anish Augustine K	0.00	0.00	0.00
Mr.Jose George	0.00	0.00	0.00
Mr.Sumithmon K.S	0.00	0.00	0.00
Ms.Liz George	0.00	0.00	0.00
Prof.T.D Jainendrakumar	0.00	0.00	0.00
Sum	0.00	0.00	0.00
N	9.00	8.00	8.00
Assessment of FIPR = $2 \times \text{Sum}/N$	0.00	0.00	0.00

Average assessment 0.00

**5.9 Funded R&D Projects and Consultancy (FRDC) Work (20)****Total Marks : 0.00**

Institute Marks : 0.00

(Instruction: A faculty member scores maximum 5 points depending upon the amount.) A suggested scheme is given below for a minimum amount of Rs. 1 lakh:)

Assessment of R&D and consultancy projects =  $4 \times (\text{Sum of FRDC by each faculty member})//N$ 

Five points for funding by national agency,

Four points for funding by state agency,

Four points for funding by private sector, and

Two points for funding by the sponsoring trust/society.

Name of faculty member (contributing to FRDC)	FRDC points (max. 5 per faculty member)		
	2021-22	2022-23	2023-24
Dr.Rahul Shajan	0.00	0.00	0.00
Fr.Jeethu Mathew	0.00	0.00	0.00
Mr.Akhil Sekharan	0.00	0.00	0.00
Mr.Alex Jose	0.00	0.00	0.00
Mr.Anish Augustine K	0.00	0.00	0.00
Mr.Jose George	0.00	0.00	0.00
Mr.Sumithmon K.S	0.00	0.00	0.00
Ms.Liz George	0.00	0.00	0.00
Prof.T.D Jainendrakumar	0.00	0.00	0.00
Sum	0.00	0.00	0.00
N	9.00	8.00	8.00
Assessment of FRDC = $4 \times \text{Sum}/N$	0.00	0.00	0.00

Average assessment 0.00

**5.10 Faculty Interaction with Outside World (10)****Total Marks : 3.56**

Institute Marks : 3.56

(Instruction: A faculty member gets maximum five interaction points depending upon the type of institution or R&amp;D laboratory or industry as follows)

FIP = Faculty interaction points

Assessment =  $2 \times (\text{Sum of FIP by each faculty member})/N$ 

Five points for interaction with a reputed institution abroad, institution of eminence in India, or national research laboratories,  
 Three points for interaction with institution/industry (not covered earlier)

Points to be awarded, for those activities, which result in joint efforts in publication of books/research paper, pursuing externally funded R&D / consultancy projects and/or development of semester-long course / teaching modules..

Name of faculty member (contributing to FIP)	FIP		
	2021-22	2022-23	2023-24
Dr.Rahul Shajan	3.00	5.00	3.00
Fr.Jeethu Mathew	0.00	0.00	0.00
Mr.Akhil Sekharan	5.00	5.00	3.00
Mr.Alex Jose	0.00	0.00	0.00
Mr.Anish Augustine K	0.00	3.00	0.00
Mr.Jose George	0.00	0.00	0.00
Mr.Sumithmon K.S	0.00	3.00	3.00
Ms.Liz George	3.00	5.00	3.00
Prof.T.D Jainendrakumar	0.00	0.00	0.00
Sum	11.00	21.00	12.00
N	9.00	8.00	8.00
Assessment of FIP = $2 \times \text{Sum}/N$	2.44	5.25	3.00
		Average assessment	3.56

**6 Facilities and Technical Support (100)****Total Marks : 100.00****Description of classrooms, faculty rooms, seminar, and conference halls:**

Room description	No. of Rooms	Usage	Shared/ Exclusive	Capacity	Rooms Equipped with PC, Internet, etc.
Class rooms	4	Two stand-alone Lecture rooms for 1st and 2nd year students; and 2 additional rooms for academic cum co-curricular discussions and activities	Exclusive	60	Contemporary instructional facilities provided in all Lecturer Halls, including Multimedia projectors, Writing boards, and computers with WiFi Internet facilities.
Tutorial Rooms	2	Rooms for tutorial sessions and discussions	Exclusive	30	Writing boards, and computers with WiFi Internet facilities
Seminar Hall	1	Space for hosting seminar and conferences	Exclusive	120	State of the art Video meeting facilities, Smart Board with Wi-Fi internet, Modern AV equipments, ergonomic seating facilities and laptops.
Conference room	1	Room for discussion and meeting	Exclusive	20	Contemporary Video meeting facilities, Modern AV equipment and ergonomic seating facilities
Faculty room	1	Comfortable space to prepare, to discuss; and space for the students to meet the faculty	Exclusive	8	Individual Cabins, computers, Printer, Internet, cupboards, lockers, restrooms et al.
HoD Room	1	Office of the Head of the department	Exclusive	1	Spacious office, meeting cum discussion space, Lockers, Computers, Printer, WiFi Internet
Students counseling room	1	Private space for personal counselling of students regarding their academic matters as well as personal issues	Shared	15	Reserved space for individual counselling, ensuring privacy and confidentiality of the persons/ discussion.
Computer Lab	1	State of the art Computer Labs to facilitate proper instruction and practice, including conducting internal & external practical examinations.	Exclusive	60	Multiple air conditioned space providing sufficient Computer systems with WiFi internet, cabin for instructors, space for faculty, Projector, White board, cupboard and necessary furnituresystems with internet. Staff cabin, A/C, Projector, White board, Cupboard and necessary furniture
Computer Centre	1	Computer centre for academic preparations, project reviews, revision, as well as for general surfing	Shared	60	Air conditioned system labs with internet, cabin for instructors, space for faculty, Projector, White board, Cupboard, printer, scanner and necessary furniture
Department Library	1	Reference library	Exclusive	20	Updated collection of reference books, shelves, furniture , computers with WiFi internet, printer, photocopier etc
Language Lab	1	Provision to support the students with vocabulary building, phonetics, pronunciation, grammar accuracy, and concepts	Shared	60	Computer systems with required softwares installed, Headphones and related facilities. Provision for common as well as individual instructions by faculty.
Research Room	1	Space to facilitate research works and discussions for the faculty and students	Exclusive	15	Comfortable environment to facilitate academic research and consultancy, Computer systems, Wi-Fi internet ensuring the right ambience to pursue advanced studies.
St. Francis hall	1	Space for hosting conferences, technical discourses, pre-placement talks etc.	Shared	500	Air conditioned space with ergonomic seating, Smart TV with Wi-Fi internet, Projector, modern AV installations and video meeting Technology

**6.1 Classrooms in the Department (30)**

6.1.1 Adequate number of rooms for lectures (core/electives), seminars, tutorials, etc., for the program (15)

Institute Marks : 1:

(Instruction: Assessment based on the information provided in the preceding table.)

The MCA Department has four classrooms exclusively dedicated to the two batches of odd and even semesters. With an approved intake of 60 students, resulting in two sections, four class rooms each accommodating 60 students per year would offer generous space for class room instructions and co-curricular initiatives. Classrooms are equipped with a combination of traditional and modern instructional tools, including technological aids such as ceiling-mounted LED projectors, chalkboards, computers, and podiums for faculty.

In addition to the four classrooms, the department also possesses two tutorial rooms for the use of students across all semesters of the MCA program, where sessions are run as per the tutorial lecture schedule within the master timetable. These tutorial rooms are used to address students' doubts on individual or group basis. To cater to the specific needs of students at differing performance levels as well as for all those who need additional support, remedial sessions are organized at the tutorial halls.

The seminar room serves as a space for conducting seminars, symposia, conferences, group discussions, and more. It accommodates a relatively large number of participants and is frequently used to host speakers from both industry and academia. The space is used to conduct workshops as well as guest lectures on the latest technologies; and to offer guidance related to placement opportunities for MCA students.

The easily accessible Department library provides access to a wide range of digital and print resources, including book titles, magazines, and journals. For recreational engagements, the department offers facilities for various indoor and outdoor sports. The department also maintains a medical room for providing immediate first aid to students and staff members in case of medical emergencies.

Further additional amenities include an on-campus bookshop and a book shop for purchasing books, stationery, and other essentials, along with photocopying services. The MCA department provides common rooms for students, including a Girls Common Room (GCR) and a Boys Common Room (BCR), where students can gather to exchange ideas and relax during non-classroom hours.

6.1.2 Teaching aids---multimedia projectors, etc (10)

Institute Marks : 1:

(Instruction: List the various teaching aids available.)

Teaching aids play a crucial role as they enhance the learning process by providing students with visual and interactive experiences. In every classroom, you will find a comprehensive set of tools, including a chalkboard and a high-quality multimedia projector. These projectors offer exceptional contrast ratios, ensuring clear distinct contrast between light and dark on the screen, outstanding resolution for sharp and vivid images, and increased lumens for both color and white brightness, resulting in a bright and more detailed projection.

These multimedia projectors are permanently installed in all classrooms, enabling faculty to conduct engaging demonstrations and presentations that motivate students and facilitate natural learning. Additionally, the department offers modern teaching aids such as Smart Boards to further enrich the educational experience.

<b>SI.NO</b>	<b>Type</b>	<b>Equipment available in Department</b>
1	<b>Visual Aid</b>	White Board Chalk Board Smart Board Bulletin Board Overhead Projector PowerPoint Presentations Sketches, Posters, Pictures Handouts
2	<b>Audio Visual</b>	Video Lectures Motion Pictures Images, Digital Books
3	<b>Traditional</b>	Black board and Chalks White board and Markers
4	<b>Online</b>	Internet, Moodle LMS, Etlab, Microsoft Teams/ Google Meet/Zoom, Google Class room
5	<b>Activity</b>	Industrial Tours, Excursion, Preparation of models Charts, Role Play, Group discussions

Demonstration
Interactive Games
Quizzes
Questionnaires

6.1.3 Acoustics, classroom size, conditions of chairs/benches, air circulation, lighting, exits, ambience, and such other amenities/facilities (5)

Institute Marks : :

(Instruction: Assessment based on the information provided in the preceding table and the inspection thereof.)

Each classroom is generously spacious, with ample windows to ensure proper ventilation and an abundance of natural light. The furniture in each room is not only excellent condition but also plentiful, allowing all 60 students in a classroom to sit comfortably. The lighting system is both sufficient and suitable for students' requirements, and it is reinforced by a backup system that provides assistance to students and staff members during emergencies or power failures.

Moreover, every classroom is thoughtfully equipped with two exit doors, ensuring convenient entry and exit for all. The institute provides lift facilities for convenience of students, guests, faculty, and other staff members. Additionally, the institute also offers accessible washroom facilities for differently abled students demonstrating a commitment to inclusivity and providing a supportive environment for all.

Room No	Room Size in Sq mt/Strength	Acoustics	Conditions of chairs/benches	Air circulation, lighting, exits, ambience	Amenities/facilities
SFB310	103	Excellent	Adequate number of Chairs	Excellent	Lecturer Hall 1 (S1MCA)



**Choondacherry, Kerala, India**  
**PPHG+8J7, Choondacherry, Kerala 686579, India**  
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SFB307	103	Excellent	Adequate number of chairs	Excellent	Lecturer Hall 3 (S3MCA)
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SFB309	259	Excellent	Adequate number of chairs	Excellent	Seminar Hall
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SFB303	50.45	Excellent	Adequate number of chairs	Excellent	Research Room
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SFB302	50.45	Excellent	Adequate number of chairs	Excellent	Tutorial Room2
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Choondacherry, Kerala, India  
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Lat 9.728221°  
Long 76.726478°  
15/11/23 11:45 AM GMT +05:30

SFB301	50.45	Excellent	Adequate number of chairs	Excellent	Tutorial Room1
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SFB315	76.30	Excellent	Adequate furniture	Excellent	Faculty Rooms
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Lat 9.728271°  
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SFB316	34.80	Excellent	Adequate furniture	Excellent	HOD Room
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Long 76.726954°  
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SFB317	24.62	Excellent	Adequate furniture	Excellent	Conference Room
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SFB318	90.6	Excellent	Adequate furniture	Excellent	Department Library
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## Choondacherry, Kerala, India

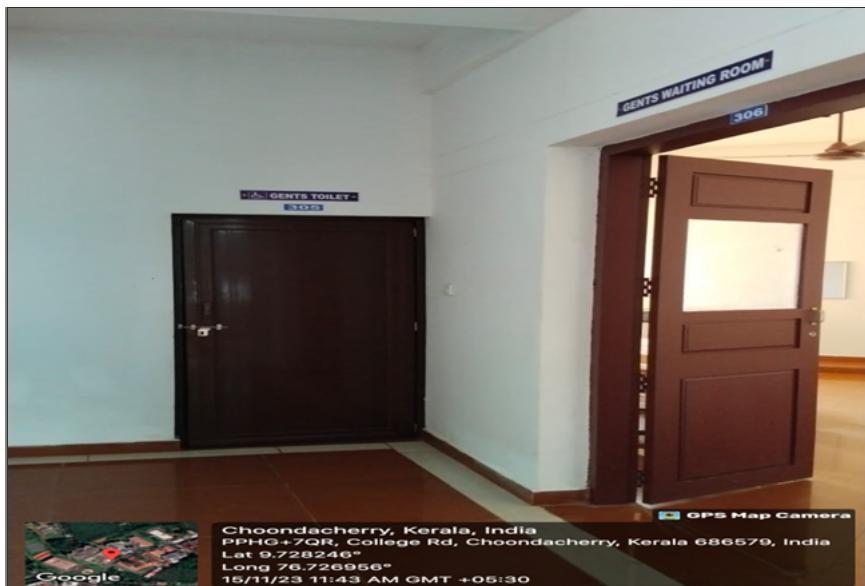
PPHG+7QR, College Rd, Choondacherry, Kerala 686579,  
India

Lat 9.728243°

Long 76.726917°

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SFB306	48	Excellent	Adequate furniture	Excellent	Gents Waiting Room
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SFB304	28.45	Excellent	Adequate furniture	Excellent	Gents Toilet
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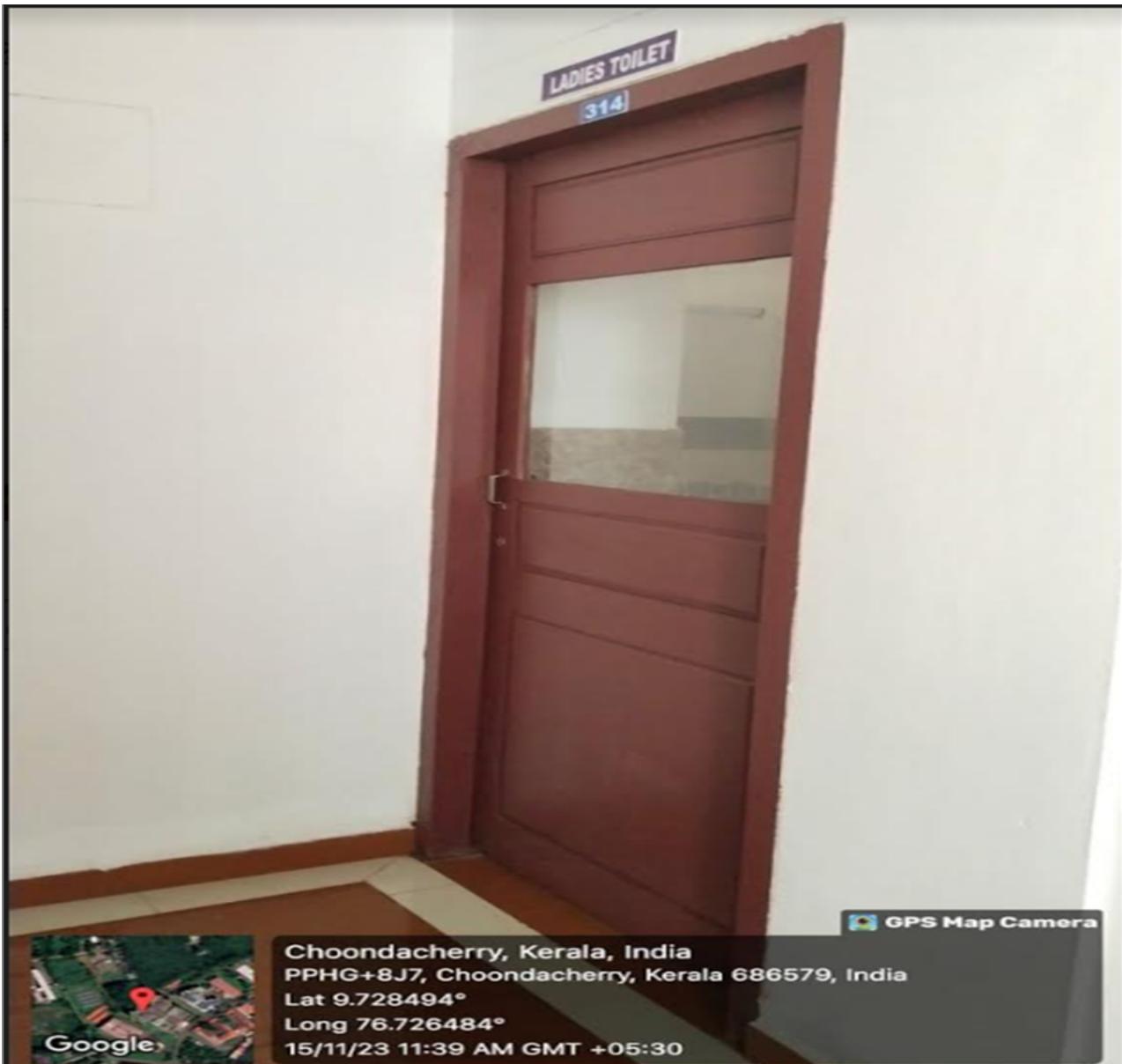
SFB305	4.05	Excellent	Adequate furniture	Excellent	Gents Toilet for Disabled
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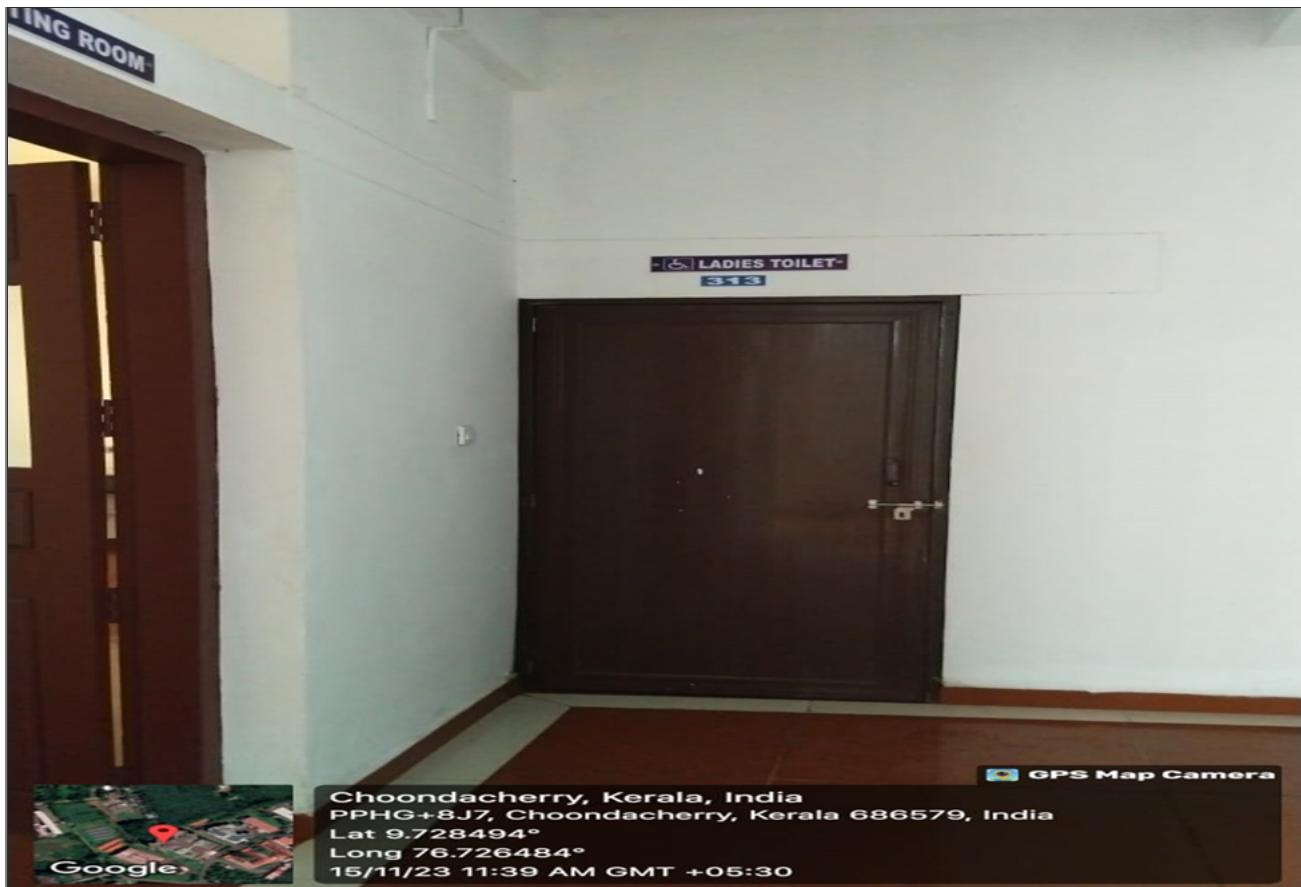
SFB312	48	Excellent	Adequate furniture	Excellent	Ladies Waiting Room
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SFB314	28.45	Excellent	Adequate furniture	Excellent	Ladies Toilet
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SFB313	4.05	Excellent	Adequate furniture	Excellent	Ladies Toilet for Disabled
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SFB311	103	Excellent	Adequate furniture	Excellent	Lecturer Hall 2(Discussion room)
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 GPS Map Camera

Choondacherry, Kerala, India  
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Lat 9.728542°  
Long 76.726504°  
15/11/23 11:38 AM GMT +05:30

SFB308	103	Excellent	Adequate furniture	Excellent	Lecturer Hall 4 Discussion room)
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SFB117	126.81	Excellent	Adequate furniture	Excellent	Computer Lab
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**COMPUTER LAB****117** GPS Map Camera

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India  
Lat 9.728249°  
Long 76.726785°  
13/01/23 03:14 PM GMT +05:30

SJB105	168	Excellent	Adequate furniture	Excellent	Central Computing Facility
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## 6.2 Faculty Rooms in the Department (20)

**Total Marks : 20.00**

### 6.2.1 Availability of individual faculty rooms (5)

(Instruction: Assessment based on the information provided in the preceding table.)

Institute Marks : 5.00

The faculty members enjoy the privilege of personal and generously spacious cabins, which serve as dedicated spaces for preparing lectures, notes, and assignments. In these well-equipped rooms, faculty members are provided with laptops to facilitate the creation and storage of visual teaching aids. These cabins are thoughtfully designed with ample lighting and ventilation to ensure a comfortable and productive work environment.

To enhance organization, these cabins feature multiple drawers and cupboards, offering sufficient storage space for faculty members to neatly arrange their materials. Furthermore, lockers have been thoughtfully installed in each room to ensure the security and safety of the faculty members personal belongings. This provision underscores the institutes commitment to providing a conducive and secure workspace for its valued faculty.

### 6.2.2 Room equipped with white/black board, computer, Internet, and such other amenities/facilities (5)

Institute Marks : 5.00

(Instruction: Assessment based on the information provided in the preceding table)

The rooms are thoughtfully furnished with essential equipment to enhance the teaching and administrative processes. Each room is equipped with a chalkboard for interactive teaching. Moreover, printers and scanners are readily available, ensuring a quick production of hard copies for study and official materials.

To support modern teaching methods and administrative needs, faculty rooms are equipped with Wi-Fi routers, providing fast and reliable internet connectivity. This enables online assignments, quizzes, and various teaching aids and official tasks. Additionally, the rooms are equipped with a backup emergency lighting system, ensuring continued functionality in case of a power outage.

The department also maintains a convenient and well-equipped space for faculty and students. This includes water dispensers with separate options for normal and cold water and a central lunch table for communal use. Adequate cupboards are provided in each room to store students assignments, project works, and important documents in an organized manner. Furthermore, the rooms are equipped with CCTV cameras to enhance safety and security within the departments premises.

#### 6.2.3 Usage of room for counselling/discussion with students (10)

Institute Marks : 10.00

(Instruction: Assessment based on the information provided in the preceding table and the inspection thereof.)

Teacher-student communication and cooperation are actively promoted in faculty cabins. In order to boost their confidence and concentrate on their studies, students can meet with faculty members, have open talks about academic issues, and discuss their concerns with their lecturers in these rooms. Students can share creative ideas and opinions with their mentors through these exchanges, and they can work together on a variety of projects.

Department also has a conference room which is being used for conducting class committee meetings, department association executive meetings etc. It also acts as venue for academic project reviews and research placement oriented discussions with students. Students often use the conference room for conducting Group discussions and debates as part of grooming their communicative skills. To enhance the overall development of students mentoring system is adopted in the institution with each faculty assigned with around 15 students. Faculties often use the conference room and seating facility available in the department library for personal interaction with their respective mentees.

In these settings, both students and faculty explore innovative concepts and delve into emerging technological fields. Faculty members are actively involved in guiding MCA students in the process of writing technical research papers. The department has an exclusive research room with PCs and internet facility ,utilized by students with research aptitude for preparation of research papers. Recently many students have participated in conferences, and published their papers in collaboration with faculties, which stands a testament to the dedicated guidance provided by faculty. The academic success of the department is enhanced by the collaborative environment that enables students to achieve academic excellence.

### 6.3 Laboratories in the Department to meet the Curriculum Requirements and the POs (35)

Total Marks : 35.00

#### 6.3.1 Adequate, well-equipped laboratories to meet the curriculum requirements and the POs (20)

Institute Marks : 20.00

(Instruction: Assessment based on the information provided in the preceding table.)

Laboratory description in the curriculum	Exclusive use / shared	Space, number of students	Number of experiments	Quality of instruments	Laboratory manuals
S1_20MCA135 Data Structures Lab	Exclusive	60	25	Excellent	yes
S1_Programming Lab_20MCA131	Exclusive	60	45	Excellent	yes
S1_Web Programming Lab_20MCA133	Exclusive	60	20	Excellent	yes
S2_Advanced DBMS Lab_20MCA134	Exclusive	60	20	Excellent	yes
S2_ObjectedOriented programming_20MCA132	Exclusive	60	45	Excellent	yes
S2_Networking & System Administration Lab_20MC136	Exclusive	60	12	Excellent	yes
S3_Mini Project_20MCA245	Exclusive	60	NA	Excellent	yes
S3_Data Science Lab_20MCA241	Exclusive	60	25	Excellent	yes
S3_Mobile Application Development Lab_20MCA243	Exclusive	60	25	Excellent	yes
S4_Main Project_20MCA246	Exclusive	60	NA	Excellent	yes
S4_Seminar_20MCA244	Exclusive	60	NA	Excellent	yes

#### 6.3.2 Availability of laboratories with technical support within and beyond working hours (10)

Institute Marks : 10.00

(Instruction: Assessment based on the information provided in the preceding table.)

Our laboratories are open and accessible to students during their allocated hours, and they are also available beyond the designated times. This flexibility ensures that students, faculty, and staff have the resources they need for a wide range of scholastic activities.

In the computer labs, individuals can utilize the latest tools and technologies to create websites, edit papers, complete their class assignments, communicate via email, perform data analysis, and access valuable library resources. These labs are conducive to both academic and professional work, allowing students to work on their projects not only during their scheduled lab hours but also after, ensuring they have perennial resources for professional success.

The laboratories are well-equipped with both the essential hardware and software, offering complete technical support to cater to the diverse needs of the students, faculty, and staff. This commitment to providing state-of-the-art resources fosters a thriving learning and working environment.

6.3.3 Equipment to run experiments and their maintenance, number of students per experimental setup, size of the laboratories, overall ambience, etc (5)

Institute Marks : 5.00

(Instruction: Assessment based on the information provided in the preceding table.)

The laboratory facilities are equipped with sufficient number of computers, routers, and printers to meet the course requirements, and they are meticulously maintained. In each computer lab, students have access to their dedicated computer, ensuring that they can perform their course practical effectively. The labs are suitably sized to comfortably accommodate up to 60 students in a batch, and they offer a pleasant working environment.

These labs are furnished with superior-quality computers, which are periodically maintained by dedicated technical support staff. Every student has access to individual systems for conducting computer lab experiments. To ensure the longevity of the equipment, regular maintenance practices are followed, including software updates to address bugs and security concerns. Protective software like anti-virus and anti-malware are installed to safeguard the PCs against viruses and malware. Utility software, such as registry cleaners and disk defragmenters, are frequently employed for system optimization. Minor repairs are handled by the in-house technical staff, while major repairs are outsourced as needed. Breakdown registers are meticulously maintained in the laboratories.

The overall ambiance in the laboratories is impressive, with well-maintained furniture, comfortable seating available to students during and beyond working hours. Each lab is equipped with whiteboards, computers, internet access, multimedia projectors, and other essential amenities. The systems in the labs feature the latest configurations and licensed software, ensuring they can efficiently run the program-specific curriculum. Adequate laboratory manuals are provided to students, offering valuable references for implementing their experiments. Additionally, emergency power back-up and lighting connections are in place to address cases of power failures to prevent data loss and system damage. This commitment to maintaining and providing top-notch laboratory facilities enhances the learning experience for all.

#### 6.4 Technical Manpower Support in the Programme (15)

Total Marks : 15.00

Name of the technical staff	Designation	pay-scale	Exclusive / shared work	Date of joining	Qualification At Joining Now	Other technical skills gained	Responsibility
Mr. Rony Jacob	System Administrator	20740-36140	Exclusive	15/09/2009	Diploma in EC AMIE in EC	MCP,CCNA,RHCT,JUNIPER Certification, Microsoft Asure Administration(AZ104)	Manageing all IT-related works in the Campus. Managing and Administering Computer Systems and the campus network
Mr. Aneesh Sankar	Instructor	14620-25280	Exclusive	02/05/2005	Diploma in CS Diploma in CS	NIL	Technical support, CCF and MCA computer lab instructor
Mr. Ajay S	Instructor	14620-25280	Exclusive	22/09/2006	Diploma in CS Diploma in CS	RHCE	Technical support, MCA computer lab instructor

6.4.1 Availability of adequate and qualified technical supporting staff for programme-specific laboratories (10)

Institute Marks : 10.00

(Instruction: Assessment based on the information provided in the preceding table.)

The MCA department ensures that qualified and proficient technical support staff are readily available to assist students in need of specialized help with hardware, software, network, and firewall-related issues in each of the laboratories. Our Computer Lab Assistants are highly competent individuals capable of successfully addressing various technical challenges. They are not only motivated to learn new software and hardware applications but are also proficient in understanding and logically resolving technical issues.

These lab assistants continually demonstrate their expertise in the current operating systems and software applications as required. Their responsibilities encompass troubleshooting computers, maintaining hardware, and installing necessary software for conducting subject-related practical. This dedicated technical support staff plays a crucial role in ensuring that students have a seamless and productive experience in the computer laboratories.

6.4.2 Incentives, skill-upgrade, and professional advancement (5)

Institute Marks : 5.00

(Instruction: Assessment based on the information provided in the preceding table.)

The technical support staff in the department is actively encouraged to participate in external courses to enrich their professional knowledge and improve their communication skills. While opportunities for formal educational advancements may be limited, these dedicated staff members are proactively enhancing their technical competencies. Several of them have gone the extra mile by attaining higher qualifications.

Mr. Rony Jacob	Participated 5 days STTP on Fundamentals of scientific computing, DSP and embedded systems
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	<p>Participated 5 days FDP on safety practices in engineering laboratories</p> <p>Participated 5 days FDP on introduction to python programming</p> <p>Participated in 6 days online STTP on learning management system</p>
Mr. Aneesh Sankar	<p>Participated in 3-day workshop on accreditation</p> <p>Participated 7-day STTP on Advances in Image processing</p> <p>Successfully completed training course on ISO 9001-2015 awareness</p> <p>Participated in a one-day webinar on OBE and Accreditation</p> <p>Participated 5 days online FDP on System administration and networking using FOSS tools</p> <p>Participated 5 days FDP on safety practices in engineering laboratories</p> <p>Participated 5 days FDP on introduction to python programming</p> <p>Participated in 6 days online STTP on learning management system</p> <p>Participated 5 days STTP on advanced system administration in open-source platforms</p>
Mr. Ajay S	<p>Completed RHCE certification</p> <p>Completed the requirements to be recognized as a Microsoft certified professional.</p> <p>Completed Diploma in Hardware and networking</p> <p>Participated 5 days online FDP on System administration and networking using FOSS tools</p> <p>Participated 5 days FDP on safety practices in engineering laboratories</p> <p>Participated 5 days FDP on introduction to python programming</p> <p>Participated in 6 days online STTP on learning management system</p> <p>Participated 5 days STTP on advanced system administration in open-source platforms</p> <p>Participated 5 days STTP on Fundamentals of scientific computing, DSP and embedded systems</p>

**7 Academic Support Units and Teaching-Learning Process (125)****Total Marks : 125.00****7.1 Academic Support Units (50)****Total Marks : 50.00****7.1.1 Admission Intake (5)**

Institute Marks : 5.00

Item	2023-24	2022-23	2021-22	2020-21
Sanctioned intake strength in the institute (N)	60	60	60	60
Number of students admitted on merit basis (N1)	28	21	13	20
Number of students admitted on management quota/otherwise (N2)	32	36	33	37
Total number of admitted students in the institute (N1 + N2))	60	57	46	57

**7.1.2 Admission Quality (10)**

Institute Marks : 10.00

Divide the total admitted student ranks (or percentage-marks) into 5 or a few more meaningful ranges

Rank Range	2023-24	2022-23	2021-22	2020-21
1-500	6	4	3	2
501-1000	13	9	8	13
1001-1500	6	10	9	6
1501-2000	13	2	9	15

Above 2000	16	9	1	5
Admitted without rank	6	24	16	16

## 7.1.3 Language Laboratory (10)

Institute Marks : 10.00

(Instruction: The institution may provide the details of the language laboratory. The descriptors as listed here are not exhaustive).

Language Laboratory	Space, number of students	Software Used	Type of experiments	Quality of instruments	Guidance
Computer Lab	Capacity to accommodate 60 students at a time	eeSee English	Comprehensive Listening, Phonetics, Commonly mispronounced words, Comprehensive Reading, Speed Reading. The experiments covered in this lab are: Vocabulary Building Phonetic Spell and Grammar Checks Tenses Building Public Speaking Letter & Curriculum Vitae Compilation Report Writing	Good	A headphone and microphone are given to each student individually. This facilitates the student's comprehension and helps them solve language-related problems in a simple and educational manner.

## 7.1.4 Career Guidance, Training, Placement, and Entrepreneurship Cell (10)

Institute Marks : 10.00

(Instruction: The institution may specify the facility and management to facilitate career guidance including counselling for higher studies, industry interaction for training/internship/placement, entrepreneurship cell and incubation facility and impact of such systems.)

The Placement & Training Cell of the college renders various services related to campus recruitment and career enhancement and has one of the best track records in the industry. It has a team of well-experienced academicians and engineering professionals in its advisory board. The prime endeavour of Placement Cell is to deliver industry-ready professionals thereby functioning as an interface between the industry and academia and enabling the students to evolve as skilled and industry-perfect technocrats.

Placement Cell gives the necessary inputs, information, and knowledge about the available choices, for enhancing students career aspirations. A rigorous training programme for career development is conducted by the Placement Cell. Though placement is the major focus, training offered by the cell often helps them tackle major competitive tests in their off-campus life. Placement Cell consists of a team of talented and highly motivated faculty who work towards furthering the career goals of our students. Students are empowered to make decisions in terms of their careers through the Placement Cell. The Cell has been supported by alumni for recruitment, industry interactions ex cetera.

**Corporate Relations & Placement Division (CRPD) / Career Guidance Cell / Placement Cell**

SJCET boasts of outstanding placements ever since its inception. SJCET's placement statistics stand ample testimony to its objective of placing all eligible and interested candidates according to the student's career choices. Even during challenging times of economic recession, on account of the corporate trust reposed on SJCET, we were able to harness significantly good careers for our students.

**Vision**

Training and moulding engineers to global excellence; and making them fit for careers worldwide.

**Mission**

\*To provide the best-in-class training and career guidance, thereby making the students technically competent and globally employable.

\*To impart awareness about contemporary industry expectations from fresh graduates; and to offer required career guidance to bridge the skill- gaps perceived.

Placement Cell gives the necessary inputs, information, and knowledge about the available choices, for enhancing students career aspirations. A rigorous training programme for career development is conducted by the Placement Cell. Placement Cell consists of a team of talented and highly motivated faculty who work towards furthering the career goals of our students. Students are empowered to make decisions in terms of their careers through the Placement Cell.

**Constitution of the Placement Committee:**

The TPO (Head of Corporate Relations) heads the Training, Placement, and Corporate Relations activities at SJCET. He is supported by the Executive Corporate Relations, who is given the delegated authority to discharge the entire functions of the office of the Placement Cell.

Every year, the Placement Cell takes nominations from all academic departments, including PG Departments. We take two faculty nominations (one from both genders respectively) from every branch, making a sizable pool of faculty members to actively support and guide the placement activities. Further, we take two student nominations from every batch (one from both genders), who would be placement representatives to support the placement activities. The placement cell functionaries, the faculty pool, and the student placement representatives constitute the Placement Committee for every placement season.

All activities of the placement cell, especially training and placements and coordination of recruitments, are planned, designed, discussed, and implemented only through the mechanism of the Placement Committee. All placement communication would be channelized (shared and received) only through the HoDs/ faculties and the student placement representatives. The Cell has a separate group-mailing system and social media groups for faculty and placement representatives for instant dissemination of placement communication. No placement-related decisions would ever be made or unilaterally executed without proper communication with the members of the Placement Committee.

The Placement Cell connects with corporate organizations to provide well-fitted jobs and internships for all the existing students along with proper alumni connections. It also conducts seminars and workshops which enable the students to become successful future industry experts.

**Training and Placement of Students****Objectives**

- \*Screening students based on their potential and mapping their competencies
- \*Preparing the student database as per the demographics and preparing their profile
- \*Preparing corporate databases of potential and existing recruiters
- \*Transforming the students according to the requirements of the corporate world
- \*Conducting career counseling and personality development sessions for students
- \*Mock interviews and Group discussions to improve professional skills.
- \*Regular aptitude tests to improve their problem-solving skill
- \*Industry interaction sessions to keep the students updated on the current status of the industry.
- \*Various sessions and seminars to improve their analysis skills, decision-making skills, and leadership skills
- \*Personality development programmes to enhance their self-awareness, self-motivation, and emotional maturity

### **Methodology**

- \*Identification of career opportunities and informing the students about the available opportunities.
- \*Motivating them to make use of the available opportunities and providing them with tailor-made training programmes.

\*Follow-up and reporting of students' performance.

**The Training & Placement Cell processes of SJCET:** The Training & Placement Cell liaises with the concerned academic Departments; as well as with the Office of the Principal to plan, coordinate, and execute its activities.

### **Phases of Training**

#### **1. Trainings**

- \*Induction Training
- \*Life skills training during every semester/ year
- \*Career skills training
- \*Aptitude Training
- \*Company pattern- placement training
- \*Coordinating in-house placement training, built into the regular timetable
- \*Coordinating Staff training, on a need basis.

#### **2. Placement Initiatives**

- \*Placement drives exclusively for SJCET
- \*Hosting pooled campus drives @ SJCET
- \*Hosting off-campus drives for recruiters

#### **3. Facilitating speakers for Corporate/ Technical seminars**

#### **4. Arranging Industrial Visits**

#### **5. Participation in Conferences & Seminars**

#### **6. Coordination of activities under MoUs**

#### **7. Facilitation of projects and in-plant training, demand-based.**

### **Placement Training Highlights at SJCET**

\*Placement Training sessions integrated with the regular academic calendar: Students of all courses receive in-house CRT (Campus Recruitment Training) by the faculty members of their respective Departments.

\*CRT (Campus Recruitment Training) by domain specialists: Best-in-class training to all candidates - by the finest training partners, meticulously identified every year – offered without discriminating anyone on the basis of academic eligibility

\*Reference Handbook for Aptitude Training.

\*Company pattern training to crack tough Aptitude Tests

\*Enabling online assessment to measure career preparedness

\*Lend career guidance to all students and alumni; and ensure career for all eligible aspirants within a year of graduation.

\*Invited sessions on Higher Studies through GATE/ GRE/ GMAT et al.

\*Sessions, admission guidance/ facilitation by reputed study abroad agencies.

#### **In-house Aptitude Training by the faculties of SJCET**

\* SJCET follows the practice of offering 12-15 days of CRT (Campus Recruitment Training) in 4-5 phases, for all students during their final year of graduation. Shortcomings of the system are sought to be addressed by offering in-house Aptitude Training by the faculties of the respective departments themselves. The idea is to ensure that the students know all the basic stuff of campus recruitment processes before they join for their formal CRT. This training is planned \*to be offered in addition to the existing CRT by external trainers; and not to entirely replace it. The training from the 2<sup>nd</sup> semester to the 7<sup>th</sup> semester for the B. Tech programs is also conducted alongside.

Placement Cell functionaries are authorized to coordinate the training and the assessment. Refresher programs are also occasionally conducted to brush up on the concepts.

#### **Placement Enabled Programmes (Activities)**

##### **\*Skills Enhancement and Professional Development**

The Professional Enhancement activities are designed and executed to develop confident, professional, and connected students for lifelong career success. Our unique and innovative activities prepare students not only to successfully find an internship or full-time job but also to succeed in their career and personal life after college.

##### **\*Seminars & Workshops**

At SJCET Palai, workshops like iOS and Android development are a regular feature for the exchange of information and creating awareness among our students and faculty about emerging tech and business trends.

##### **\*Mock Drives**

The Training and Placement department regularly conducts mock drives, interviews, and group discussions to train the students in a real-life environment.

#### **Placement Guidelines**

SJCET has the dedicated objective of placing all eligible and interested students graduating every year, through campus placements.

\*Minimum eligibility for placement varies for companies. Each student has to submit and update his/her detailed profile and statement of marks during each process.

\*Each student has to submit their Dream Job and core Job company list before attending his/her first attempt at recruitment. After getting a placement, students can take up two more chances based on their statuses of Dream Job and Core Job.

\*It is mandatory for all eligible students to attend campus selection drives as per the placement notices, till they get placed.

\*Students who are not interested in placement have to give it in writing, explaining their other areas of interest and counter-signed by parents.

#### **Final Placements**

This process begins in the first month of the penultimate semester. The process starts in August and usually continues till the month of June next year. However, recruitment through Pre-Placements Offers (PPO) happens at least a fortnight before the Final Placements.

For each of these processes, the following procedure is adopted:

\*Members from companies interact with students on campus through the Employability Enhancement Programme: Guest Lectures, Live Projects, and other corporate forums.

\*Student profiles and other relevant details are shared with companies

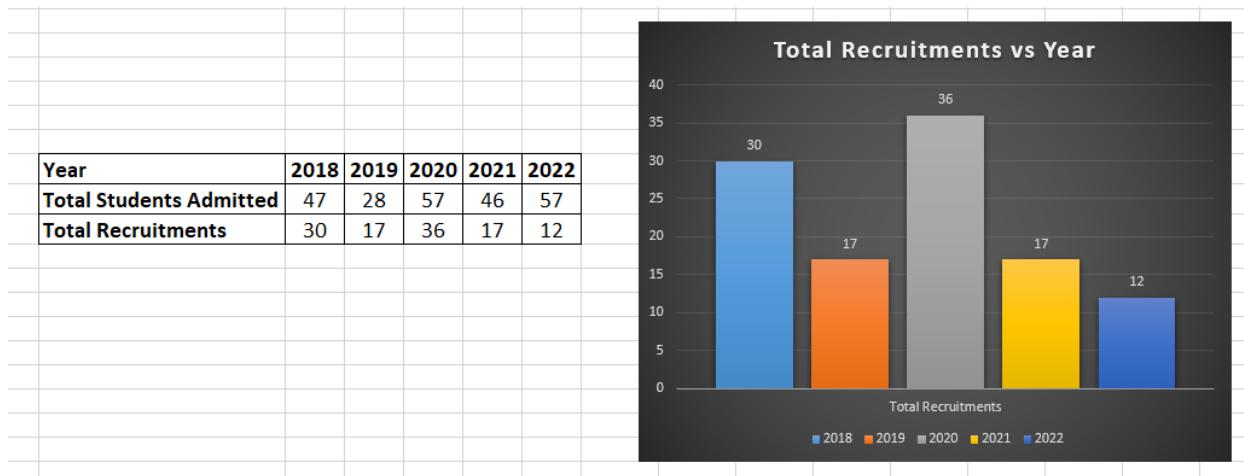
\*The companies conduct Pre-Placements Talks to give in-depth information about them including the roles and profiles being offered

\*Applications are invited and resumes of interested applicants are shared with the companies

\*Based on factors such as profiles and locations offered, and students' perceptions and areas of interest, companies are ranked and called on-campus

\*Companies conduct their selection process which typically comprises CV-based shortlisting, group discussions, and interviews

\*Final results are announced by the companies



### Recruitment Allies



#### Innovation and Entrepreneurship Development Cell: IEDC

### SJCET BOOTCAMP - IEDC

The **SJCET Start-up Bootcamp- IEDC** (Innovation and Entrepreneurship Development Centre) was set up on 9th March 2015 as a part of the Kerala Start-up Mission (KSUM) initiative to develop a start-up culture amongst students. The IEDCs are platforms set up in Engineering, Management, Arts and Science Colleges and Polytechnics with an aim to provide students an opportunity to experiment and innovate. KSUM has set up IEDCs in 226 institutions across the State which provide avenues for creative students to learn, collaborate, and transform their innovative ideas into prototypes of viable products and services. IEDCs work as the first launch pad for a student's entrepreneurial journey and provide them with access to cutting-edge technology, world-class infrastructure, high-quality mentorship, early risk capital, and global exposure.

#### VISION

To create an innovation culture among Innovators by introducing them the State-of-the-art technologies and positioning the Institution as a Learning and Innovation Platform by delivering technically competent and skilled Entrepreneurs.

#### MISSION

To create IEDC as an Innovation Platform and to create future founders by promoting Innovation, Technology, and Business Learning among the student community

"Here students take their first step as innovators and entrepreneurs"

			
MENTORING	INNOVATION	NETWORKING	INCUBATION
Start-up Bootcamp also provides mentoring support to help students in developing innovative ideas, set goals, and explore careers that are best suited.	Start-up Bootcamp provides students with assistance in projects through innovative ideas which can be utilized for future endeavours	Start-up bootcamp also helps students in connecting them with other personalities to identify their potential and increase their opportunities	Start-up bootcamp provides incubation support to students by giving opportunity to express their innovative ideas and make them work

The aim of the Innovation and Entrepreneurship Development Cell (IEDC) is to develop and strengthen entrepreneurial qualities in budding professionals who are interested in starting their own ventures. The Institute provides infrastructure and technical support to the students who have innovative ideas to transform into new products and services for the betterment of society.

The IEDC also assists all the aspirants with mentoring, planning, and execution of their start-up idea into a real business.

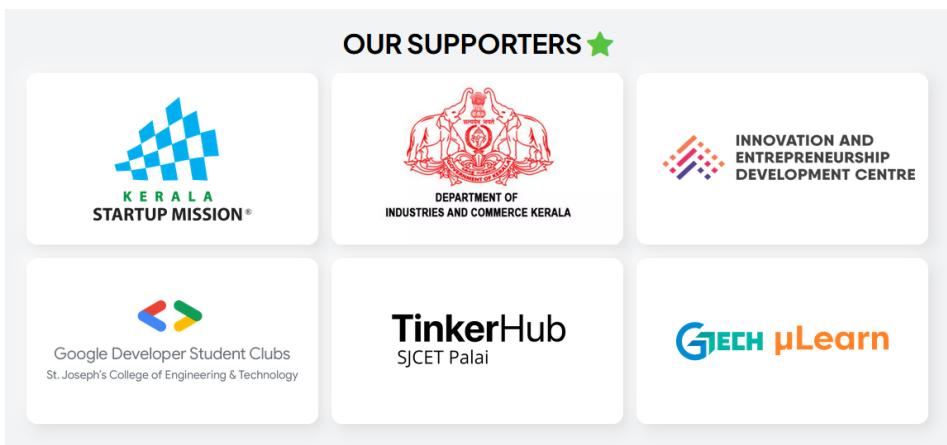
IEDC provides mentoring opportunities through its network of acquaintance allies. Students seek to benefit from the experience of these initiatives. The association includes professionals, entrepreneurs, investors, and Industry experts.

IEDC acts as an Institutional mechanism for providing various services including information on all aspects of enterprise edifice to budding entrepreneurs.

#### IEDC Events Conducted for MCA

Sl. No.	Date	Topic	Batch
1	20/12/2020	Initiatives of SJCET Bootcamp	MCA 2020-22
2	23/09/2021	Introduction to IEDC	MCA 2021-23
3	15/03/2023	Start-up and Bootcamp	MCA 2022-24
4	21/11/2023	Unlocking Innovation: Introduction to IEDC and Entrepreneurship	MCA 2023-25

#### OUR SUPPORTERS ★





### Software Development Centre (SDC)

Software Development Centre in SJCET was started in 2016 as a part of the ‘**Make in SJCET**’ movement. **SDC** flourishes under the auspices of the Computer Science and Engineering department and Department of Computer Applications of St. Joseph’s College of Engineering and Technology, Palai as a part of the ‘**Make in SJCET**’ movement. It addresses not only the technology developing needs of the host college but also provides technical assistance and technology development for external clients as well.

The software development centre has two developers and one project head. SDC has already implemented many applications for external and internal activities.

#### 7.1.5 Co-curricular and Extra-curricular Activities (10)

(Instruction: The institution may specify the co-curricular and extra-curricular activities, e.g., NCC/NSS, cultural activities, etc)

Institute Marks : 10.00

SJCET focuses not only on classroom teaching but also on the overall development of the students. SJCET is actively engaged in providing the students with an extensive range of cultural and co-curricular activities. Keeping in line with this commitment, our college organizes Annual Cultural Fest Sargam. It is a much-awaited event with multiple competitions in dance, music, fashion, drama, literary and various other cultural fields and offers a plethora of opportunities to the students to showcase their talent. With a view to facilitate holistic personality development and improved performance of students, various clubs and cells function in the college.

Extracurricular activities increase opportunities for social interaction and new relationship development. As most of those activities are group-oriented, students from completely different niches, have an opportunity to understand individuals of different passions and cultures. Interaction with individuals of various backgrounds helps the students in development of social skills. Extracurricular activities teach students a way to work for a standard goal and this ultimately develops a way of responsibility in them. It will increase the extent of confidence and conjointly teaches them a way to co-operate and work with individuals in various conditions. They learn to face the challenges that are present in education and career. Most of the employers like to hire people who are all rounded. Sustained involvement in additional activities other than studies reflects the talent and potential of the student. Employers rummage around for these abilities in individuals.

Every year a number of stimulating programs and activities such as paper presentations, quiz contests, project competitions, etc. are organized by the Institute, Student Chapters, and Student Associations. Students take part in these co-curricular and extracurricular activities while a similar number of students participate in successfully organizing the events. The students with the help of the faculty advisor carry out all the tasks related to the activity right from its conception to its execution.

This imparts various skills to the students viz: teamwork related to professional, technical, financial, ethical front, etc., and also offers opportunities to nurture their talent, passion, and interest. Such activities are usually carried out generally after college hours. The Institute provides facilities for the same.

The following activities are conducted on a regular basis in each academic year:

\*The **Orientation Day Program** is organized for the newly enrolled students to help them understand the Campus and SJCET family.

\*The **Induction Programme** is conducted for newly admitted students as per the university schedule. Normal classes start only after the induction program is over. Its purpose is to make the students feel comfortable in their new environment, open them up, set a healthy daily routine, create bonding in the batch as well as between faculty and students, and develop awareness, sensitivity, and understanding of the self, people around them, society at large, and nature.

\***PACE** - Annual inter college sports meet.

\***Teachers' Day** is organized by the students under the guidance of the cultural team to felicitate all their faculty members.

\***Merit Day** is organized to bid the convocation program for MCA and farewell to the final-year students.

\***Cyber Security Day** is organized by the Department of Computer Application in association with Janamayithri Police is Conducting Cyber Security Day on November 30th of every Year, recognizing the importance of making the young generation alert about the pitfall in the cyber world.

\*The Techsphere Webinar Series was a comprehensive and informative learning experience for degree students. The series covered various aspects of technology, and the speakers provided valuable insights into their respective fields.

\***Alumni Meet** has been started with the aim to build a seamless and strong bond with alumni and encourage their participation in Institute building.

\***NCC - SJCET** has the rare honor of being the first self-financing engineering college to have an NCC unit (Army wing with an authorized strength of 160 cadets) NCC aims at developing character, comradeship, discipline, secular outlook, spirit of adventure and ideals of selfless service among young citizens. Further, it aims to create a pool of well-organized and trained youth with leadership qualities, motivated to serve the nation and contribute to the national development. The motto of NCC is Unity and Discipline.

\***NSS - SJCET NSS** unit is affiliated to Department of Technical Education, Government of Kerala. The motto or watchword of the national service scheme is 'not me but you'.

\***Women in Development Cell** - Women historically have been under-represented in scientific and technical fields. Women can only realize their true potential, if and only if they have easy access to education and play a full role in community's decision-making process. To set the fire of 'the desire to win' in young women's heart, SJCET formally inaugurated her Women in Development Cell, in Nov 2005.



#### Other Cultural Events:

\*The event "SARGAM" Annual cultural festival with the aim of finding artistic expression among students. It embodies eagerly awaited multiple events in dance, music, fashion, drama, literary and various other cultural fields and offers a plethora of opportunities to the students to showcase their talent.

\***SMASH** - The students association "SMASH" of Department of Computer Applications (MCA) had inaugurated the activities in the year 2010. SMASH organizes various technical and managerial activities, workshops, seminars and competitions both at intra and inter-collegiate level to illuminate the talents of the students in co-curricular and in technical domains apart from the core curriculum covered.

\***FENSTRA** is the prestigious National Level Inter-Collegiate meet. It is conducted by the association of MCA students (**SMASH**).

\***Karate Club** - To promote karate-do among the students so as to achieve self-confidence, discipline in life and abandon all bad habits through well-disciplined and scientific karate training and for the formation of healthy generation both physically and mentally, hence to serve the society.



The TEDx Program is designed to help communities, organizations and individuals to spark conversation and connection through local TED-like experiences. At TEDx events, a screening of TED Talks videos — or a combination of live presenters and TED Talks videos — spark deep conversation and connections at the local level. TEDx events are planned and coordinated independently, under a free license granted by TED.

7.1.6 Sports grounds, facilities, and qualified sports instructors (5)

Institute Marks : 5.00

(Instruction: The institution may specify the facilities available and their usage in brief.)

#### Games and Sports Facilities: -

The main goal of the Department of Sports / Physical Education is to promote a fair play culture that embraces diversity, transparency, sporting spirit, integrity, and respect. It provides a variety of opportunities for students to improve their general health and fitness. The main focus of the Department is on practical exposure to the science of sports and physical education in a learner-friendly atmosphere. Our students have participated and won laurels at inter and intra-state levels. The Department is committed to training students not only physically but also psychologically and emotionally along with preparing them to give their best in the contemporary competitive world. Students are given full support for their practices.

#### Sports Officer:

Name: **Mr. Ahlath Tomy**

Designation: Physical Education Director

Department: Department of Science and Humanities

Qualification: BA - Economics, B. P. Ed. (Bachelor of Physical Education),  
M. P. Ed. (Master of Physical Education)

#### Sport Facilities:

**Sports Room** – Multipurpose Building – Einstein Hall (For Indoor games)

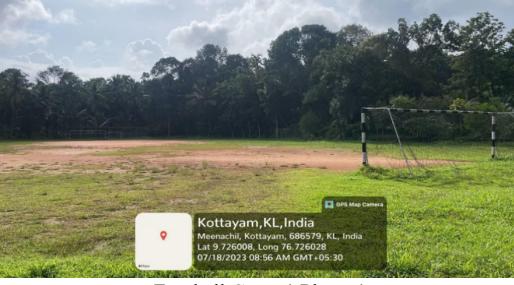
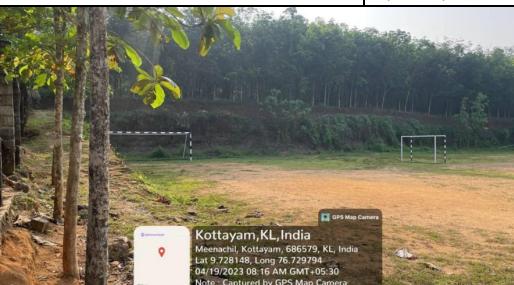
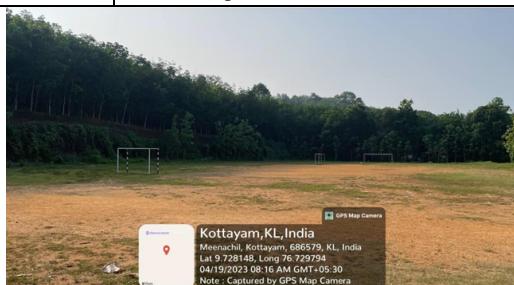
**Playground** – Available inside the campus (Play Cricket, Football, Volley Ball, Athletics ...etc.)

The following facilities are available in the College for sports and games.

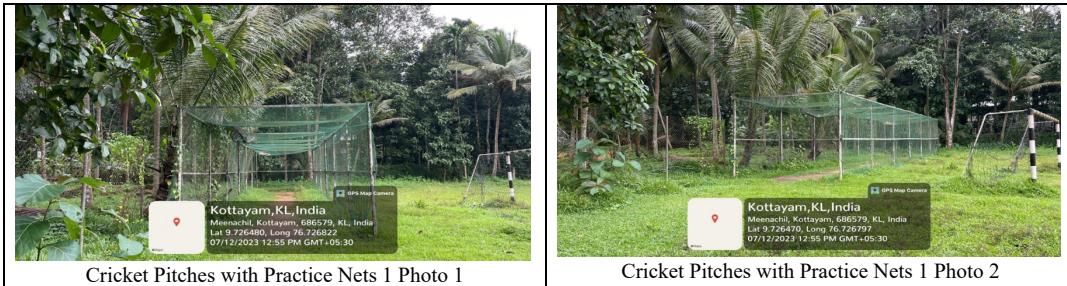
Sl. No	Name of the Area	Number of Amenities	Plinth Area in m <sup>2</sup>
1	Basketball Court (Concreted)	1	1 x 420 m <sup>2</sup>
2	Football Field	2	2 x 4050 m <sup>2</sup>
3	Cricket Nets (Concreted)	1	140 m <sup>2</sup>
4	Volleyball Courts	2	2 x 162 m <sup>2</sup>

5	The Playground consists of a <b>200 m</b> Athletic Track, Long Jump Pit, High Jumping Bed, Shot-put, Discus Throw pits, and Javelin sector.	2	$2 \times 8000 \text{ m}^2$
6	Fitness Centre Gents	1	$218 \text{ m}^2$
7	Fitness Centre Ladies	1	$315 \text{ m}^2$
8	Multipurpose Hall (Shuttle Badminton-4, Table Tennis -2, Caroms -2, Chess -10)	1	$10000 \text{ m}^2$
9	Department Room	1	$30 \text{ m}^2$
10	Sports Store Room	1	$200 \text{ m}^2$

Name of the Facility	Area ( $\text{m}^2$ )	Location
Basketball Court	(28x15) 420	In front of the college
 Basketball court Photo 1		 Basketball court Photo 2

Name of the Facility	Area ( $\text{m}^2$ )	Location
Football Court 1	(90x45) 4050	Near St. John Paul Block
 Football Court 1 Photo 1		 Football Court 1 Photo 2
Football Court 2	(90x45) 4050	Near St. Alphonsa Hostel
 Football Court 2 Photo 1		 Football Court 2 Photo 2

Name of the Facility	Area ( $\text{m}^2$ )	Location
Cricket Pitches with Practice Nets	140	Near St. John Paul Block

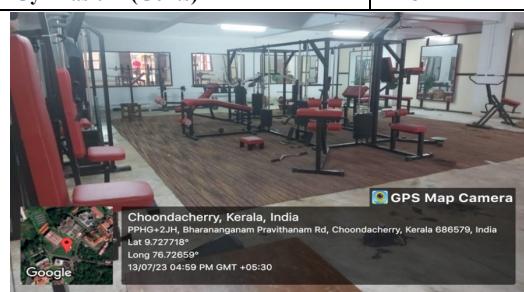
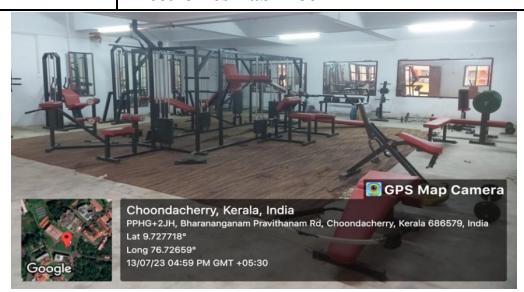


Name of the Facility	Area (m <sup>2</sup> )	Location
Volleyball Court 1	(18x9) 162	In front of the college
Volleyball Court 1 Photo 1		
Volleyball Court 1 Photo 2		

Name of the Facility	Area (m <sup>2</sup> )	Location
Volleyball Court 2	(18x9) 162	In front of the college
Volleyball Court 2 Photo 1		
Volleyball Court 2 Photo 2		

Name of the Facility	Area (m <sup>2</sup> )	Location
Badminton Courts	(13.41x6.1) 81.8	Einstein Hall
Badminton Court 1 Photo 1		
Badminton Court 2 Photo 1		
Badminton Court 3 Photo 1		
Badminton Court 4 Photo 1		
Name of the Facility	Area (m <sup>2</sup> )	Location

Table Tennis Court	(2.74x1.525) 4.17	Einstein Hall
		
Table Tennis Court 1 Photo 1		Table Tennis Court 1 Photo 2

Name of the Facility	Area (m <sup>2</sup> )	Location
Gymnasium (Gents)	218	Electronics Lab Block
		
Gymnasium (Gents) Photo 1		Gymnasium (Gents) Photo 2
Name of the Facility	Area (m <sup>2</sup> )	Location
Gymnasium (Ladies)	315	St. Augustine's and St. Mary's Hostel
		
Gymnasium (Ladies) 1 Photo 1		Gymnasium (Ladies) 2 Photo 1

Following Indoor and Outdoor Sports facilities that are currently available on the Campus and the student's achievements during the years are shown in the table below.

Indoor	Outdoor
Badminton Table Tennis Chess Caroms	Football fields Basketball concrete court Volleyball courts Cricket Nets Badminton courts

Various Sports Events	
	



## 7.2 Teaching – Learning Process (75)

**Total Marks : 75.00**

7.2.1 Tutorial classes to address student questions: size of tutorial classes, hours per subject given in the timetable (15)

Institute Marks : 15.00

(Instruction: Here, the institution may report the details of the tutorial classes that are being conducted on various subjects and also state the impact of such tutorial classes).

- Provision of tutorial classes in timetable(Yes/No) Yes
  - Tutorial sheets provided(Yes/No) Yes
  - Tutorial classes taken by: Faculty
  - Number of tutorial classes per subject per week: 1
  - Number of students per tutorial class: 30
  - Number of subjects with tutorials: 1st year..... 2nd year..... 3rd year..... 4th year.....
- 1st year: 8 2nd year: 4

The tutorial classes are conducted for students to solve problems related to the subjects. It helps students to gain confidence and discuss any topic related to a particular subject. It also gives a platform to counsel slow learners and discuss advanced topics for bright students.

7.2.2 Mentoring system to help at individual levels (15)

Institute Marks : 15.00

(Instruction: Here, the institution may report the details of the mentoring system that has been developed for the students for various purposes and also state the efficacy of such system.)

- Mentoring System Yes
- Type of Mentoring Total Development
- Number of faculty mentors 6
- Number of students per mentor 20
- Frequency of meeting Monthly

The faculty advisory system is functioning in the college as per APJAKTU regulations. For each class, there is a faculty advisor to guide them in their holistic development.

In addition, a group of 20 students is assigned a mentor. Mentors regularly apprise their mentees of their study-related and personal problems. If necessary, counselling by experts is available for students having problems with their studies and personal habits. Separate counsellors are available for boys and girls. Students with study and other problems can meet them for advice and counselling.

The same mentor shall continue throughout the course period of the mentee. A mentoring record is kept for every mentee by the mentor and is updated from time to time.

Mentoring is very effectively provided for the overall development of students. Mentors interact with mentees twice in a semester. Mentoring is also provided after analyzing problems, if any, faced by each student. Mentoring helps students to get over their difficulties with studies (course work and lab)

Mentors interact with their mentees to provide instruction, inspiration, and emotional support and also share knowledge about his or her career path. Along with the interaction, mentors update the information through the **etlab-SJCET**. Any personal difficulties faced by students will be discussed, and based on requirements students will be directed to professional counsellors. The parents are always informed about the progress as well as problems, if any, of the students.

The mentoring system helps his/her personality and character along with participation in arts/sports/games will also be graded by the mentor through **Method I- Personality and Conduct assessment** and **Method -II Activity Score** in **etlab-SJCET** which can be viewed by the HOD and Principal. Corrective advice is given, whenever required.

#### **Faculty Mentors**

##### **List of Mentors in the 2021-22 Academic Year**

<b>Sl. No.</b>	<b>Name of Faculty Mentor</b>	<b>Mentees List</b>
1	Mr. Alex Jose	2020-22 Regular (15)
2	Ms. Liz George	2019-22 Regular (23)
3	Mr. Jose George	2020-22 Regular (15)
4	Mr. Anish Augustine	2020-22 Regular (12) 2021-23 Regular (3)
5	Mr. Akhil Sekharan	2020-22 Regular (12) 2021-23 Regular (3)
6	Mr. Sumithmon K S	2021-23 Regular (20)
7	Dr. Rahul Shajan	2021-23 Regular (20)

##### **List of Mentors in the 2022-23 Academic Year**

<b>Sl. No.</b>	<b>Name of Faculty Mentor</b>	<b>Mentees List</b>
1	Mr. Alex Jose	2022-24 Regular (16)
2	Ms. Liz George	2022-24 Regular (16)
3	Mr. Anish Augustine	2022-24 Regular (12) 2021-23 Regular (3)
4	Mr. Akhil Sekharan	2022-24 Regular (13) 2021-23 Regular (3)
5	Mr. Sumithmon K S	2021-23 Regular (19)
6	Dr. Rahul Shajan	2021-23 Regular (18)

##### **List of Mentors in the 2023-24 Academic Year**

<b>Sl. No.</b>	<b>Name of Faculty Mentor</b>	<b>Mentees List</b>
1	Mr. Alex Jose	2022-24 Regular (16) 2023-25 Regular(3)
2	Ms. Liz George	2022-24 Regular (16) 2023-25 Regular(3)
3	Mr. Anish Augustine	2022-24 Regular (12) 2023-25 Regular(7)
4	Mr. Akhil Sekharan	2022-24 Regular (13) 2023-25 Regular(7)
5	Mr. Sumithmon K S	2023-25 Regular (20)
6	Dr. Rahul Shajan	2023-25 Regular (20)

#### **Mentoring system to help at individual levels:**

<b>Type of Mentoring</b>	<b>2023-24</b>		<b>2022-23</b>		<b>2021-22</b>	
	<b>No. of students mentored</b>	<b>No. of students improved</b>	<b>No. of students mentored</b>	<b>No. of students improved</b>	<b>No. of students mentored</b>	<b>No. of students improved</b>

<b>Academic Performance</b> (Series Test/Attendance %/semester wise result....)	4	3	7	6	8	5
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Batch	2023-24	2022-23	2021-22
No. of Faculty Mentors	6	6	7
No. of Student /Mentor	20	17	18

### 7.2.3 Feedback analysis and reward / corrective measures taken, if any (15)

Institute Marks : 15.00

(Instruction: The institution needs to design an effective feedback questionnaire. It needs to justify that the feedback mechanism it has developed really helps in evaluating teaching, and contributes to the overall quality of instruction.)

- Feedback collected for all courses(Yes/No) Yes
- Specify the feedback collection process

Feedback from various stakeholders is collected through the following channels: Surveys and Questionnaires': regular surveys to gather feedback from our stakeholders are collected either through online mode or through physical offline pen and paper methods, whichever is feasible at the time. The surveys are carefully designed after due deliberations to capture feedback on various aspects of programs and services, including teaching quality, infrastructure, support services, and overall experience. Feedback Forms: Feedback forms are enabled in the campus ERP for students to collect feedback on individual courses and faculty members. Exit Surveys: A course exit survey from students on course objective attainment is collected and a Program Exit Survey is conducted among the graduating students to gather feedback on their overall experience at SJCET. Suggestion Boxes: Suggestion boxes are available for students to use the suggestion boxes which would be opened once every month

Once the feedback is collected, it is analyzed using various metrics under the supervision of the Internal Quality Assurance Cell. The cell works closely with various departments and stakeholders to ensure that the feedback is analyzed effectively and actionable insights are derived from it. The metrics used for analyzing feedback include measures such as student satisfaction ratings, faculty performance ratings, and industry feedback on the readiness of graduates. The interpretation methods used include comparison with previous years' observations (whenever/wherever possible), trend analysis, etc., to identify areas where improvements can be made. The results of the analysis are shared with the faculty/staff and with the IQAC with which further decision making at SJCET is performed, if any

Once the analysis is received at the IQAC, the committee makes appropriate recommendations to the Head of the Institution for actions to be taken. General actions taken are Recommendation to appreciate the efforts of Faculty acquiring high scores in average teaching effectiveness index by Appreciation Certificates Recommendations to improve teaching-learning processes if required Recommendations to inform the University on curricular aspects Recommendations for policy changes if required Recommendation for Infrastructural improvement if required The action taken report is approved by the Head of the Institution and displayed on the Institute Website.

- Number of corrective actions taken in the last three years 12

SJCET has a vision to develop into a world-class institute that meets the goals and aspirations of society and works with the mission of maintaining a conducive infrastructure and learning environment, nurturing a competent and research-oriented faculty, and developing students with moral and ethical values for their successful careers. Towards attaining the vision, feedback from various stakeholders is an important component for continuous improvement of the quality of education and services provided to various stakeholders. The opinions of stakeholders, including students, faculty, alumni, and employers are valued and are used to appropriately revise the approach to delivering services. The colleges Internal Quality Assurance Cell oversees the feedback mechanism that collects, analyzes, and acts upon feedback from all stakeholders.

#### Objectives:

The objectives of the feedback mechanism are as follows:

- \*To identify areas of improvement in curriculum delivery, services, and infrastructure.
- \*To ensure that the programs and services align with the college's vision, mission, and POs.
- \*To enhance student satisfaction and engagement.
- \*To encourage a culture of continuous improvement and learning.

#### Stakeholders:

The various stakeholders involved in various fronts of the institute are:

- \*Students: Current students of SJCET across all programs, including UG and PG
- \*Faculty: Teaching faculty across all departments.
- \*Alumni: Graduates of SJCET who are willing to provide feedback.
- \*Employers: Representatives from companies that have recruited SJCET graduates.

#### Frequency of Feedback collection:

The frequency of feedback collection and consolidation are as follows:

**Students:** From current students of SJCET across all programs, including UG and PG, feedback on two aspects is collected  
Feedback on Curriculum delivery: collected twice in a semester  
Feedback on Infrastructural facilities for effective learning environment: collected once in a year.

**Faculty:** Feedback on curricular aspects and infrastructural aspects for effective curriculum delivery: once annually

**Alumni:** Feedback on various aspects of SJCET to prepare him/her to be ready to take up professional challenges in life: Once annually

**Employers:** Feedback on various aspects of SJCET in preparing industry-ready graduates is collected once annually, preferably between 6 months to 1 year after a graduate joining the company.

#### Mechanism of Feedback Collection and Various Aspects of the Feedback:

Feedback from various stakeholders is collected through the following channels:

\*Surveys and Questionnaires': regular surveys to gather feedback from our stakeholders are collected either through online mode or through physical offline pen and paper methods, whichever is feasible at the time. The surveys are carefully designed after due deliberations to capture feedback on various aspects of programs and services, including teaching quality, infrastructure, support services, and overall experience.

\*Feedback Forms: Feedback forms are enabled in the campus ERP for students to collect feedback on individual courses and faculty members.

\*Exit Surveys: A course exit survey from students on course objective attainment is collected and a Program Exit survey is collected from graduating students to gather feedback on their overall experience at SJCET.

\*Suggestion Boxes: Students currently in campus are free to use the suggestion boxes which would be opened once every month

#### Method and Interpretation:

Once the feedback is collected, it is analyzed using various metrics under the supervision of the Internal Quality Assurance Cell. The cell works closely with various departments and stakeholders to ensure that the feedback is analyzed effectively and actionable insights are derived from it.

The metrics used for analyzing feedback include measures such as student satisfaction ratings, faculty performance ratings, and industry feedback on the readiness of graduates. The interpretation methods used include comparison with previous years observations (whenever/wherever possible), trend analysis, etc., to identify areas where improvements can be made. The results of the analysis are shared with the faculty/staff and with the IQAC with which further decision-making at SJCET is performed.

#### Action Items:

Once the analysis is received at the IQAC, the committee makes appropriate recommendations to the Head of the Institution for actions to be taken. General actions taken are

- \*Recommendation to appreciate the efforts of Faculty acquiring high scores in average teaching effectiveness index by Appreciation Certificates
- \*Recommendations to improve teaching-learning processes if required
- \*Recommendations to inform the University on curricular aspects
- \*Recommendations for policy changes if required
- \*Recommendation for Infrastructural improvement if required

The action taken report is approved by the Head of the Institution and displayed on the Institute Website.

#### Benchmark for Taking the Action

##### 1. Student Feedback

###### A. About Teaching Effectiveness

The criteria for evaluating teaching effectiveness are decided by the respective departments  
Criteria for Evaluation

If Overall teaching effectiveness is	Remarks
Above 90%	Excellent
80-90%	Very Good
70-80%	Good
60-70%	Satisfactory
Less than 60%	Poor

Actions are initiated when the feedback falls below 60%.

###### B. About Infrastructure

The following facilities are evaluated under infrastructural feedback

- \*Class rooms
- \*Electricity and water supply
- \*Teaching Aids
- \*Laboratory facilities
- \*Workshops
- \*Campus Internet connectivity
- \*Library Facilities
- \*Medicare
- \*Canteen
- \*Banking

\*Transportation

\*Hostel Accommodation

\*Waste Disposal

The screenshot shows a web-based survey form. At the top, it says "Institutional Feedback from Students at SJCET, Palai". Below that, there's a note about saving progress via Google sign-in. A red asterisk indicates required fields. The first section is "Personal Information". The next section asks for the "Admission Year". The third section, labeled "1. Programme of Study", contains a dropdown menu for selecting a programme.

Students are directed to rank the facilities under the following rating scale

<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Excellent</b>	<b>Good</b>	<b>Fair</b>	<b>Satisfactory</b>	<b>Poor</b>

#### Criteria for Evaluation

If more than 40% of the students rated any one of the above facilities as poor, actions are initiated. Suggestions given by the students are given due consideration and necessary actions are initiated.

#### 2. Faculty Feedback

Feedback form is circulated among faculty to know whether the

\*Curriculum /syllabus is suitable for the program

\*Course plan is adequate

\*Course outcomes are well defined

\*Course outcome to program outcome is well defined and justified

\*Theory and practical sessions are balance

\*Books prescribed as reference are relevant

\*Library facility are adequate

\*Institute administration policy is teacher friendly

# SJCET Faculty Feedback Form 2023-24

[Sign in to Google](#) to save your progress. [Learn more](#)

\* Indicates required question

## Personal Information

### 1. Name \*

Your answer

### 2. Department \*

Choose

Members of the Faculty are directed to rank the facilities under the following rating scale

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

## Criteria for Evaluation

If more than 40% of the faculty rated any one of the above facilities as Disagree or Strongly Disagree, actions are initiated. Suggestions given by the faculty are given due consideration and necessary actions are initiated.

### 3. Employer Feedback

Feedback from Employer is collected and analyzed to know their satisfaction regarding the work performance and academic system followed by the college which educated our students.

Employers are requested to rank their opinions under the following rating scale

1	2	3	4
Disagree	Neutral	Agree	Strongly Agree

## Criteria for Evaluation

If more than 40% of the Employer rated any one of the achievement levels of program objectives as Disagree, actions are initiated. Suggestions given by the Employer are given due consideration and necessary actions are initiated.

### 4. Alumni Feedback

Feedback from Alumni is collected to know how far the program objectives have been achieved and how well they were able to contribute to the organizations where they work. Opinions of Alumni were collected to know their ability

\*To investigate, analyze, design, and solve complex Engineering Problems at work

\*To use modern engineering tools

\*To apply Engineering Knowledge for betterment of society and sustainable development

\*To understand professional and ethical responsibility

## SJCET ALUMNI FEEDBACK FORM

FEEDBACK ABOUT INSTITUTION /PROGRAM-B.Tech/M-Tech/MCA/MBA

Email \*

nishanthbenny25@gmail.com

Name

Nishanth Benny

Year of Pass \*

Alumni are requested to rank their opinion under the following rating scale under

1	2	3	4	5
Excellent	Very good	Good	Fair	Satisfactory

### Criteria for Evaluation

If more than 40% of the Alumni rated the achievement of programme objectives as Fair or Satisfactory, actions are initiated Suggestions given by the Alumni are given due consideration, and necessary actions are taken for improving the facilities provided to students.

#### 7.2.4 Scope for self-learning (15)

Institute Marks : 15.00

(Instruction: The institution needs to specify the scope for self-learning / learning beyond syllabus and creation of facilities for self-learning / learning beyond syllabus.)

Self-learning is studying without direct supervision or attendance in a classroom, and it is a valuable way to learn. It helps students to develop the confidence they need to tackle challenging problems and obstacles in the future. Students are encouraged to self-learn by personal counseling and organizing various contests. Link to suggested online materials and videos are forwarded to the students.

Our Institution provides many facilities for self-learning such as:

#### Web-based Learning:

The Institute is equipped with high-quality computer systems

Labs are equipped with world-class equipment and facilities based on the latest technology pertaining to different sectors. There is neither any requirement for extra equipment nor any need for arrangement from an outside provider. There are adequate number of labs with capacity of 63. Each lab has required software and hardware as per curriculum requirements.

Fully Wi-Fi campus with secured networks with industry-leading firewall.

Our Campus is fully Wi-Fi enabled. From free Wi-Fi access to video conferencing and in-house technical support, built-in technology makes students' presentations and panel discussions run seamlessly. Students can access study aids such as video clips or audio files of classroom lectures. With the ability to network via Wi-Fi, students can study collectively, share notes, and prepare for exams. One of the core-uses of Wi-Fi on campus is for students to keep abreast of their assigned coursework.

#### Learning with ICT Tools:

**Moodle LMS and etlab-SJCET** software is available where faculty members upload the course material, assignments, etc for the students. Students can also ask queries for which faculty assistance is readily provided

Virtual Campus Powered by **Moodle LMS and etlab-SJCET** makes sure that the right information reaches the right audience at the right time. It also exhibits our firm commitment to delivering a world-class education experience at SJCET.

**etlab ERP** is a people-centric portal, capable of seamlessly integrating information about faculty, students, and alumni. **etlab ERP** offers a platform for connecting with the campus anywhere and anytime.

In addition to it, an online Learning Management System, **Moodle** based on the principles of open learning and collaboration is also available. **Moodle**

provides a Virtual Academic Platform, with all the course information, lecture notes, and syllabus posted online. **Moodle** is also used to conduct aptitude training and tests.

E-Library facility **KOHA, NPTL** and **NDLI** (National Digital Library)

Language Lab Facility (with **60** Workstations)

Availability of video lectures in Digital form

LCD projectors for presentation

#### **Classroom Presentations:**

Allowing students to prepare and present topics besides the curriculum

Arranging presentations on non-technical topics

#### **Technical Symposiums:**

Organizing annual events like CSI, Talks, Live Projects, Workshops etc

Motivating students to participate in Inter College events for paper presentations and project exhibitions

#### **For Developing Technical Enthusiasm**

Twice a week an hour is conducted where students take classes with their fellow students on technical topics like Python, Androids, etc.

Also conducts workshops and seminars for the interested students.

7.2.5 Generation of self-learning facilities, and availability of materials for learning beyond syllabus (15)

Institute Marks : 15.00

(Instruction: The institution needs to specify the facilities for self-learning / learning beyond syllabus.)

The department has provided the following facilities to students for their self-learning and learning beyond the syllabus:

#### 1. Infrastructure

- \* Digital library facility is provided with KOHA/NPTEL/OCW video lectures and NDLI (National Digital Library).
- \* Labs are open to students to experiment with their ideas.
- \* Language lab facilities are provided which enable students to prepare for examinations like TOEFL, GRE, etc.

#### 2. Learning Resources:

- \* Wi-Fi facility enables students to access the internet even beyond college hours.
- \* Central internet Facility is kept open for 8 hours a day. Wi-Fi facility is available 7x24 hours.
- \* Students are motivated to write and present Research papers.
- \* Students are encouraged to develop Projects.
- \* Professional skill development courses are arranged.
- \* Learning material is made available on the Intranet.
- \* Students are encouraged to write assignment/tutorials.
- \* Labs are open to students to experiment on their ideas.

**8 Governance, Institutional Support and Financial Resources (75)**

Total Marks : 75.00

#### **8.1 Campus Infrastructure and Facility (10)**

**Total Marks : 10.00**

8.1.1 Maintenance of academic infrastructure and facilities (4)

Institute Marks : 4.00

(Instruction: Specify distinct features.)

1. The eco-friendly 46.5 acres campus of St. Joseph's College of Engineering & Technology (SJCET) Palai projected through the lush green environment, abundant water availability and spacious and airy surroundings, consists of five academic blocks and five sets of laboratory blocks with a total built up area of 66,498m<sup>2</sup>.

2. Institute has 75 spacious, well-ventilated classrooms which includes 5 smart classrooms, 11 chambers for Heads of Departments, separate cubicles for each faculty member, 3 drawing halls, a central library of 1088 m<sup>2</sup> area, 10 department libraries, separate section for placement and training which includes GD room

and a couple of interview rooms.

3. All class rooms are furnished with an adequate number of tables and chairs, ceiling fans and lights, black/green/white boards, platform and LCD projectors. The 2297 m<sup>2</sup> multipurpose auditorium offers facilities for indoor games, cultural activities, yoga training and gatherings of the whole SJCET community.

4. To cater to the physical health, the institute has 2 playgrounds, basketball court, separate gymnasiums for both ladies and gents. Institute organizes sports and games competitions, annual cultural fest (SARGAM) and an intercollegiate tech-fest (ASTHRA) every year.

5. There are 51 laboratories and 2 workshops set up in the institution on an area of 7607 m<sup>2</sup> having state-of-the-art equipment and research facilities for fulfilling the program-specific curriculum of APJAKTU.

6. There are three aesthetically designed, well-equipped air-conditioned seminar halls, where international/national conferences, workshops and seminars are being held..

#### Computing equipment and Facilities

- 350Mbps leased connection
- Wi-Fi enabled campus
- 83 Wi-Fi access points
- 15 Computer labs
- 768 computers
- 615 Computers for student's access
- Central library browsing area
- 75 Printers
- 16 Scanners
- 34 Laptops

#### Other campus infrastructure facilities

- Language lab and Central Computing Facility.
- CCTV enabled campus with more than 232 HD IP cameras.
- Boot-camp, Maker-Space, Heritage Museum, Heritage Diesel Engine, GSLV model.
- Medicare, 2 Prayer halls, Ramps and Lifts for differently-abled, Separate toilets for differently abled, 15 Drinking water points
- Separate parking areas for staff and students.
- Solar powered campus (total capacity of 210kW), Water treatment plant (3.5 lakhs liters of water/day), Incinerator, Biogas plant, Nakshatra garden, Fish pond, Vermi-compost unit, Rainwater harvesting tanks, Meteorological Centre and Groundwater recharge ponds.
- 11 kV substation, 24/7 electric power supply with backup generators (542 kVA), 3-phase UPS (130 kVA).
- 2 Canteens, Cafeteria, Store, 3 Reprographic Facilities, Guest-lounge.
- 2 ATMs, Post office, Bank, BSNL exchange, Mobile tower.
- 20 college buses for students and staff.
- Separate rooms for IQAC meetings, Board meetings, Examination control, University valuation camp, Yoga, Alumni, NCC, NSS, Music Club, Guidance and Counselling.
- Cashless payment facilities are available in all offices, stores, canteens, cafeteria and hostels.
- Two ladies' hostels and two gents' hostels with total capacity for 1300 plus students' within the campus. Overall, the campus is very clean and well equipped with all state-of-the-art facilities to provide quality education in various engineering domains.

Efficient functioning of academic and administrative services requires regular maintenance of the available resources. Periodic meetings and action plans ensure smooth working and management of each facility. A dedicated team schedules the activities to periodically conduct checks on the specified facilities.

## Computer Infrastructure Summary

Computers for Students use				
Sl. No.	Location	Department	Quantity	
1	Software Computing Lab	CSE	65	
2	Networking Lab	CSE	33	
3	Programming Lab	CSE	34	
4	Center For Software Consultancy	CSE	3	
5	Research Lab	CSE	28	
6	EEE Computer Lab	EEE	33	
7	Simulation Lab	EEE	20	
8	CE Software Lab	CE	64	
9	CAD/CAM Lab	ME	36	
10	Industrial Engineering & Computational Lab	ME	15	
11	EDA Lab	ECE	35	
12	VLSI & Embedded Systems Lab	ECE	35	
13	Communication Lab	ECE	6	
14	Research & Development Lab	ECE	25	
15	AD Computer Lab - I	AD	32	
16	MBA Reference	MBA	10	
17	MCA Computer Lab	MCA	62	
18	Process Control Lab	EI	5	
19	Main Library	Central	14	
20	Central Computing Facility (CCF)	Central	60	
				Total = 615

The table below defines the roles and responsibilities of each team assigned to maintain various facilities in the campus.

**Responsibilities to Manage each Facility in the Department**

Sl. No.	Facility	Description (Responsibilities)
1	Infrastructure	Taking care of any loss/physical damage to furniture and fixture
2	Computer Labs	Installing and updating hardware/software requirements
	Conference Room	Functioning of projectors, printers, etc
	Classroom Projectors, Printers	VGA/HDMI cables, ports etc.
3	Medical Room	Providing first-aid to students and staff. Giving symptomatic treatment to the needful. Maintenance of first-aid boxes at the reception
4	Sports Facilities	Conducting indoor/outdoor sports activities. Availability and maintenance of sports equipment
5	Electrical Equipment	Taking care of electrical appliances in classrooms, auditoriums etc.
6	Stationery and Administrative Correspondence	Managing stationery required in the department
7	Website	Regularly update events/activities on website
8	Washrooms, floors etc.	Cleanliness and hygiene Filling of cleansing materials

AMC's exists for Lifts, Computers, UPS, and Solar Panel etc. Maintenance is carried out by specialists, whenever required. Ceilings, flooring and glasses are monitored regularly. Window frames and buildings are regularly painted and maintained that increases their sustainability.

8.1.2 Hostel (boys and girls), transportation facility, and canteen (2)

Institute Marks : 2.00

i. Hostel (boys and girls):

The main attraction of SJCET is its excellent residential facilities. St. Joseph's College of Engineering and Technology provides hostel facilities for girls and boys students within the campus itself. The hostel facility is provided to P.G and U.G students of the college. For gents and ladies, we have two hostels each can accommodate both P.G and U.G students. Catholic Priests of the diocese and sisters are the wardens of our hostels. Faculty members residing in the hostel support the wardens. Our hostels provide a disciplined, safe, calm, hygienic and peaceful atmosphere for students for their studies as well as personal growth. We have facilities for mess, chapel, study hall, gymnasium etc. and we are full-fledged Wi-Fi campus. Our hostels aim at Intellectual, Cultural, Moral, Social, Emotional and Spiritual development of the students. They are formation houses and cultural centers that provide excellent ambiance for the holistic development of their inmates. Electricity is provided for 24 hours. In case of power failure, the generator will supply power to all our hostels.

St. Thomas (for men), St. Augustine's (for women), St. Mary's (for women) & St. Alphonsa Hostel (for men) are owned and administered by the Diocese of Palai.

These hostels give accommodation to the students of SJCET.

<b>Hostels</b>	<b>No. of rooms</b>	<b>No. of students accommodated</b>
St. Thomas Hostel (For Men)	308	243
St. Alphonsa Hostel (For Men)	423	281
St. Mary's Hostel (For Ladies)	213	92
St. Augustine Hostel (For Ladies)	381	227

### **Faculty Houses**

A faculty house is available in the campus for male faculty members. A separate wing in the Ladies Hostel is available for lady faculty members.

### **ii. Transportation Facility**



#### **Conveyance facilities at the college**

The college has a well-organized transportation wing with 20 buses to cater to the transportation needs of both students and staff members. Dr. Jyothis Thomas, Professor, Department of S&H serves as the faculty in-charge of the transportation wing. Following are the general guidelines for students using the transportation facility.

**Bus Pass Requirement:** To use the route buses, students must have a valid Bus Pass.

**Route Conditions:** Route buses will only operate if there are enough students to justify the service.

**Queue System:** Students are expected to form a queue at the bus stops, ensuring a disciplined and orderly boarding process.

**Behaviour Expectations:** While inside the bus, students are expected to maintain decent behaviour. Activities such as shouting, howling, or singing loudly should be avoided to create a peaceful and respectful environment.

**Seat and Bus Integrity:** Students are not allowed to tamper with the bus seats, fittings, or accessories. Damaging any of these items may result in a fine, and disciplinary action can be taken against those responsible.

These rules and expectations aim to ensure the safe and responsible use of the transportation facilities provided by the college. They also promote a respectful and conducive environment for all passengers using the bus services.

<b>Sl. No.</b>	<b>Bus route</b>	<b>Staff in Charge</b>	<b>Dept.</b>	<b>Contact No.</b>
1	SJCET - Karukachal -Mallappally	Mr. Ajay S	MCA	9744140490
2	SJCET - Moolamattom	Mr. Vijayan M K	ME	9495313474
3	SJCET - Kanjirapally - Parathodu	Mr. Thomas John	CS	9946324895
4	SJCET - Koothattukulam	Mr. Bineesh Vijayan	EC	9496804608
5	SJCET - Mannanam - Kottayam	Mr. Jose James	CE	9447767794
6	SJCET - Pallickathodu -Pampady	Mr. Sunny Cyriac	EC	9946664156
7	SJCET - Manarcad- Kottayam	Ms. Tinu Thomas	ES	9526725379
8	SJCET - Thodupuzha - Cheenikuzhy	Mr. Centil Jose	LIB.	9496464673
9	SJCET - Poonjar - Teekoy	Ms. Ligi Simon	CE	8547639751
10	SJCET - Kallara	Mr. Mathew V. M	ME	9495662712
11	SJCET - Piravom	Ms. Athirasree Das	CS	7593015863
12	SJCET - Kanjirathanam	Mr. Dijomon N B	EE	9446906819
13	SJCET - Thalayolaparambu - Vaikom	Mr. Babu T M	ME	9745364436

14	SJCET - Changannacherry - Thiruvalla	Mr. Balakrishnan K. K.	EE	9446364465
15	SJCET - Ettumanoor - Kanakkary	Mr. Justine Tom	EC	9847845120
16	SJCET - Bharananganam - Pala	Mr. Jipson Mathew	ME	9446602900
17	SJCET - Melukavumattom - Pius Mount	Mr. Jibin Philip	CS	8281042328
18	SJCET - Manimala - Nedumkunnam	Mr. Adarsh C Ravi	AD	9496986007
19	SJCET - Kudackachira	Mr. Johnson Joseph	ME	9446714176

### iii. Canteen

The organisation has set up two full-fledged hygienic canteen & 1 Cafeteria to make sure the students get wholesome and healthy food while they are in the campus. The canteen is open from 8:00 a.m. to 6:00 p.m. and has adequate space and seating capacity. Canteen staff is adequate in number to cater the needs of students. Apart from preparing food items, regular cleaning of canteen space, utensils, pest-control, dumping of expired inventory are few responsibilities of the canteen staff. Feedback and review pertaining to quality, quantity of food and hygiene is taken periodically from students.

Name	Space	Seating Capacity	Location
Food court (Canteen 1)	Food court Students' area 1	180	In front of the College
	Food court Students' area 2		
	Food court faculty area		
	Food court Guests area		
Canteen 2	Canteen-Student area	140	St. Francis Block
	Canteen-Faculty area		
	Visitors Dining		
Cafeteria	Madonna Cafeteria	25	Near central Library



Figure 1: Food Court (Canteen 1)



Figure 2 : Canteen 2

8.1.3 Electricity, power backup, telecom facility, drinking water, and security (4)  
**(Instruction: Specify the details of installed capacity, quality, availability, etc.)**

Institute Marks : 4.00

### Electric power

Power availed from KSEB Ltd at HT level (HT Service Connection.)

Contract Demand: 250kVA

Recorded maximum demand: 200kVA

KSEB substation capacity: - 11kV

connected load is around 1500kVA

Transformer Capacity: 315kVA, 11000/433V, Unipower Oil filled Outdoor transformer with Off-Load Tap changer

Power backup

Backup Power sources 320kVA, 125kVA, 82.5kVA and 20kVA

Solar power plant 210KW

College wanted to have continuous electric supply 24x7 throughout the year. Their desire for uninterrupted supply was fulfilled through a number of generators that turn on automatically when grid supply fails. The generator for automatic changeover is selected by microprocessors and PLCs based on the power rating just before the failure of grid supply.

#### **Telecom facility**

From the very inception of the college, a private telephone exchange (EPABX) was established in the college for catering the needs of communication from various locations of laboratories, staff rooms and other administrative sections. Subsequently this was upgraded with IP Phone facility to all required stations and rooms. Altogether more than 50 IP phones are provided for internal use. These phones could be used for external communications also by selected top officials.

<https://sjcetpalai.ac.in/telephone-directory/>

#### **Drinking water**

Neat & clean fresh water collected in three ponds are chlorinated and periodically tested for its potable quality. The treated fresh water is pumped to the storage tanks at building roof tops for distribution. All the discharged ends of the pumps are piped in parallel so that discharge of any pump can be routed to any overhead tank with the redundancy of the pumps. If any pump becomes faulty other pumps can be used for water pumping without any interruption in water supply. Most of the pumping is done during the early hours of the day so that energy conservation is made possible. These pumps can be fed from grid supply or from any of the generator preferably from 82.5kVA generator.

Purified clean drinking water is made available at all vantage locations of all buildings and also at several locations on the campus. The facility is provided in hostels as well.

#### **Security**

In the campus CCTV Surveillance cameras are provided at more than 250 locations to monitor work performance and student activities inside the campus. Central monitoring as well as monitoring by main administrative heads is provided for live security observations. In addition to this security personnel is available on 24x7 basis in the campus ensuring secured traffic to and from the college. Students are permitted to go out from the campus only with written permission of the Principal/HoDs/Staff Advisor during class hours. Altogether, 10 security persons including women look after the security inside the campus during day and night.

## **8.2 Organisation, Governance, and Transparency (10)**

**Total Marks : 10.00**

### 8.2.1 Governing body, administrative setup, and functions of various bodies (2)

Institute Marks : 2.00

(Instruction: List the governing, senate, and all other academic and administrative bodies; their memberships, functions, and responsibilities; frequency of the meetings; and attendance therein, in a tabular form. A few sample minutes of the meetings and action taken reports should be annexed.)

St. Joseph's College of Engineering and Technology (SJCET) stands as a beacon of excellence in the realm of technical education in Kerala. Established in 2002 by the Catholic Diocese of Pala, SJCET has consistently set high benchmarks for its peer institutions to aspire to achieve. The college's primary objective has been to contribute positively to national development by imparting top-tier technical education and training to aspiring individuals. Nestled amidst the serene foothills of the Eastern High ranges, SJCET enjoys a picturesque location that provides an ideal backdrop for learning. Its tranquil and ethereal environment fosters an atmosphere conducive to academic growth and excellence.

#### **Board of Trustees**

The Board of Trustees meet once or twice in a year, as necessary, to discuss and assess the financial status and other matters connected to the affairs of the Institution. They frame rules and regulations necessary for the proper and efficient administration of the Trust and institution under the Trust.

#### **Members of Board of Trustees**

Sl. No	Name of the member	Designation
1	<b>H.E. Mar Joseph Kallarangatt,</b> Bishop, Diocese of Palai.	Parton
2	<b>Msgr. Dr. Joseph Maleparampil,</b> Vicar General & Chairman of the Diocesan Technical Education Trust	Chairman
3	<b>Fr. Berchmans Kunnumpuram,</b> Secretary, Corporate Educational Agency, Bishop's House, Palai.	Secretary
4	<b>Fr. Joseph Muthanattu</b> Procurator, Bishop's House, Palai	Treasurer
5	<b>Rev. Fr. Joseph Vallompurayidam</b>	Member

6	<b>Mr. Jose Abraham Vadakel</b>	Member
7	<b>Mgr. Abraham Kollithanathumalayil,</b> Bishop's House, Palai.	Member
8	<b>Mgr. Dr. Joseph Thadathil,</b> Bishop's House Pala	Member
9	<b>Mgr. Dr. Sebastian Vethanathu,</b> Bishop's House, Palai	Member

### Governing Body

The Governing body formulates policy and directs the affairs of the institution. The Governing body of SJCET consists of 13 members headed by His Excellency Mar Joseph Kallarangatt, Patron of the College, Chairman of the trust and Principal as the Secretary. It includes members nominated by the Board of Trustees and nominated members from AICTE. The term of the Governing Body shall be governed by the provisions of statutes 4.2 of Chapter 4 APJAKTU statutes 2020. It meets once or twice in a year to assess the performance of the institution and to discuss the future developmental activities.

### Members of the Governing Body

Sl. No	Name of Member	Designation	Responsibility
1	H.E. Mar Joseph Kallarangatt	Bishop, Diocese of Palai	Patron of the College
2	Mgr. Dr. Joseph Maleparampil	Vicar General & Chairman of the Diocesan Technical Education Trust	Chairman
3	Mr. T. K Jose IAS	Additional Chief Secretary, Govt. of Kerala	Member
4	Dr. Tessy Thomas	Distinguished Scientist, Defense Research and Development, Bangalore	Member
5	Dr. Ramesh Unnikrishnan	Advisor II Policy & Academic Planning Bureau, AICTE, New Delhi	Member AICTE Nominee
6	Mr. Tom Thomas Kadankavil	Director- Technical & CTO, KTS Info Tech Pvt. Ltd, Palai	Member Industrialist
7	Dr. Job Kurian	Dean Administration, IIT, Palakkad	Member
8	Dr. Sarith P Sathian	Associate Professor, IIT Madras	Member
9	Dr. V. V Georgekutty	Principal, Civil Service Institute, Palai	Member
10	Dr. Madhukumar S	Professor & Vice-Principal, SJCET	Member
11	Dr. Ance Mathew	Associate Professor & HoD, Civil Engineering, SJCET	Member
12	University Nominee	-	Ex-Officio
13	Dr. V P Devassia	Principal	Member Secretary

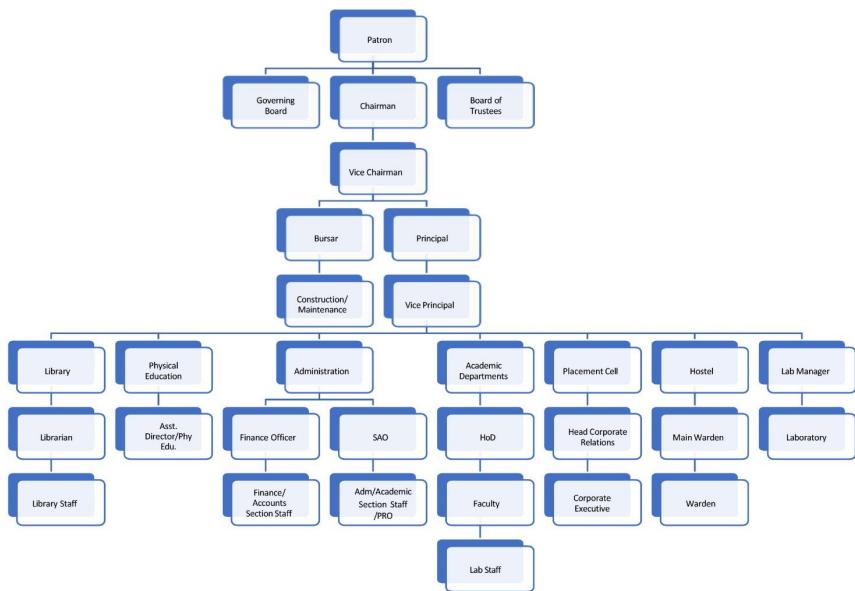
### Frequency and Attendance of Governing Body Meeting

A copy of minutes of meeting of Governing Board and action taken report is enclosed for reference.

Sl. No	Dates of Meeting	Academic Year	No. of participants	Important decisions taken at the meeting
1	27-05-2023	2022-23	11 + 3 Special Invitee	Faculty members shall pay much attention to AICTE "SWAYAM/NPTEL courses  Add on courses shall be included in the curriculum to enhance the employability skills  Encourage Faculty members to take up IT/Non IT related Projects
2	07-05-2022	2021-22	11 + 3 Special Invitee	The students of our college shall take up internship opportunities provided by AICTE to improve their skills  The college may apply for NIRF/NAAC Ranking  The college shall acquire the status of autonomy at the earliest
			10	Resolved to motivate the faculty members to acquire Ph.D. degree

3	14-08-2021 (Online Platform)	2020-21	+ 3 Special invitee	Revolved to forge tie up with industries to augment placement  Revolved to make the institution more vibrant by motivating the doctoral degree holders to expedite steps for acquiring Research guide ship.
4	31/10/2020 (Online Platform)	2019-20	12 + 3 Special invitee	Resolved to take urgent steps to secure NBA Accreditation for all the courses offered by SJCET.  Also resolved to take urgent steps to secure the autonomous status for the college.

### Organizational Structure



### Functions of key Academic positions

The functions of various key positions are depicted in the table below.

Positions	Functions
<b>Board of Trustees</b>	<ul style="list-style-type: none"> <li>• Frames directive principles and policies.</li> <li>• Manages, administers and controls the Trust fund, properties, and institutions belonging to the Trust under its management</li> <li>• Frames rules and regulations necessary for the proper and efficient administration of the Trust and institution under the Trust</li> </ul>
<b>Chairman</b>	<ul style="list-style-type: none"> <li>• Manages, control and supervise the affairs /management of the properties belonging to the Institution and further development</li> <li>• Coordinates the various activities undertaken by the Trust</li> <li>• Subject to the general direction and control of the Patron, the Chairman shall be in charge of the administration of the college and shall have the power to fix and define the functions and duties of teaching and non-teaching staff of the college</li> <li>• Takes prompt steps for the efficient working of the college</li> </ul>
<b>Governing Body</b>	<ul style="list-style-type: none"> <li>• Approves the Budget presented by the finance Officer and monitors the budget utilization.</li> <li>• Advises the institution in academics, student, faculty development, and R&amp;D</li> <li>• Helps the institution in its pursuit to become a center of excellence and establish milestones in continuous improvement</li> </ul>
<b>Vice Chairman</b>	<ul style="list-style-type: none"> <li>• The Vice Chairman shall be the authority next to the Chairman</li> <li>• Assists the chairman in the discharge of his duties</li> </ul>
	<ul style="list-style-type: none"> <li>• Defines and delegates various responsibilities in the organization.</li> <li>• Conducts meeting of HoDs once in a week or more often to discuss and finalize important matters concerning the College</li> </ul>

<b>Principal</b>	<ul style="list-style-type: none"> <li>●Encourages and promotes various co-curricular and extra- curricular activities among the students</li> <li>●Encourages conducting Seminars and Workshops in various departments and arranges experts from various fields to give lectures to the students and faculty</li> <li>●Ensures periodic monitoring &amp; evaluation of various processes in the institute</li> <li>●Ensures effective purchase procedure</li> <li>●Conducts periodic meeting of various bodies such as College Council, Disciplinary action committee, Anti ragging committee, and Grievances Redressal Committee etc.</li> <li>●Prepares and executes college academic calendar</li> <li>●Maintain academic standard of the institution</li> <li>●Maintain discipline among students and staff</li> <li>●Monitors and evaluates teaching learning process periodically and suggests corrective measures.</li> <li>●Promotes Research and consultancy activities</li> <li>●Maintains minutes of all meetings</li> <li>●Initiates new academic proposals</li> <li>●Arranges Faculty/Staff Development Programs</li> </ul>
<b>Vice Principal</b>	<ul style="list-style-type: none"> <li>●Admission</li> <li>●Coordinator of Accreditation Process</li> <li>●IQAC</li> <li>●Conducting of PTA</li> <li>●Industrial Interaction Monitoring</li> <li>●Alumni Interactions</li> <li>●KTU/AICTE approval process</li> </ul>
<b>Bursar</b>	<ul style="list-style-type: none"> <li>●Maintains and updates building plans</li> <li>●Executes overall building maintenance</li> <li>●Supervise the rectification of failures of common facilities in the college and hostels</li> </ul>
<b>Lab Manager</b>	<ul style="list-style-type: none"> <li>●Ensures smooth running of college laboratories/workshops</li> <li>●Scrutinize the proposals of laboratory material requirements submitted by the departments</li> <li>●General supervision of lab staff</li> </ul>
<b>College Council</b>	<ul style="list-style-type: none"> <li>●Maintain discipline of the students</li> <li>●Discusses new academic proposals</li> <li>●Monitoring student's activities</li> <li>●Proposes FDP</li> <li>●Keep vigil over the student's residence</li> </ul>
<b>Heads of Departments</b>	<ul style="list-style-type: none"> <li>●Allocates workload for faculty members</li> <li>●Ensures the efficient functioning of the department by assigning and supervising work for the faculty members and lab staff of the department concerned</li> <li>●Ensures the smooth conduct of Internal Examinations of the department concerned</li> <li>●Reviews students' performance and supplement remedial measures</li> <li>●Adopts measures for modernizing and developing labs</li> <li>●Initiates measures for motivating faculty and developing team spirit</li> <li>●Chairs Department Academic Committee</li> <li>●Organizes interactive meetings with students, and arranges feedback sessions.</li> <li>●Oversees the creation and maintains a departmental database of faculty, alumni and students.</li> </ul>

	<ul style="list-style-type: none"> <li>●Motivates staff members to organize consultancy and continuing education programs</li> <li>●Develops proposals for improved teaching methods by implementing Outcome based Education teaching learning process</li> <li>●Implements and monitors the academic time table of the department</li> <li>●Prepares the budget for the department</li> <li>●Maintains overall students discipline in the department as per policy of the college with due coordination with the faculty advisors</li> <li>●Resolves difficulties faced by students' academic and non- academic areas in consultation with the faculty advisors and refer essential cases to the counsellor</li> <li>●Identifies training needs of faculty and supporting staff.</li> <li>●Reviews the progress of sponsored projects, if any.</li> <li>●Carries out performance assessment of faculty to improve faculty performance</li> <li>●Conducts monthly meeting of faculty to review the department work and maintains minutes of meeting (MoM)</li> <li>●Conducts meetings of supporting staff of the department, at appropriate intervals</li> </ul>
<b>Administrative/ Finance Sections</b>	<ul style="list-style-type: none"> <li>●Coordinates the administrative and accounting activities</li> <li>●Prepares budget for the Institution</li> <li>●Oversees Employee Attendance System &amp; maintains the monthly attendance report</li> <li>●Manages public relations</li> <li>●Maintains service book of Faculty/Staff</li> </ul>

8.2.2 Defined rules, procedures, recruitment, and promotional policies, etc (2)

Institute Marks : 2.00

(Instruction: List the published rules, policies, and procedures; year of publications; and state the extent of awareness among the employees/students. Also comment on its availability on the internet, etc.)

Staff policy first published in 2010 and revised subsequently in 2015, 2017 and 2021. The Staff policy includes service rules, Recruitment and Promotional policies etc. Copies of the Staff policy have been distributed among the staff members from time to time.

<https://sjcepalai.ac.in/wp-content/uploads/2022/04/SJCET-STAFF-POLICY-compressed.pdf>

8.2.3 Decentralisation in working including delegation of financial power and grievance redressal system (3)

Institute Marks : 3.00

(Instruction: List the names of the faculty members who are administrators/decision makers for various responsibilities. Specify the mechanism and composition of grievance redressal system, including faculty association, staff-union, if any.)

St. Joseph's College of Engineering and Technology, Palai functions with perfect decentralized administration that has complete transparency in the decision-making process. For the smooth functioning of the Institution, various committees are constituted. The key functions of these committees are listed below.

#### **Decentralization in working**

- Faculty development is delegated to the Head of the Department
- Heads of the Departments delegate various duties to their staff
- Examination work is delegated to Exam cell with a senior faculty member as controller of Examination
- Training & Development Cell and Placement Cell are delegated to Corporate Relations, training and placement Department
- Co-Curricular & Extra-curricular activities are delegated to Faculty Advisors of Various Clubs
- Senior Administrative Officer is delegated with non-financial and non-academic matters

#### **Delegation of financial powers**

The principal acts as the joint signatory of the college financial accounts with the Chairman. He is empowered to sanction the requisite amount of money on submission by College Student Council, Alumni Association, PTA and Research Centre subject to the approval of the Chairman. He functions as the joint signatory of the Minority Cum Means Scholarship and The Central Sector Scholarship. Besides, The Help Line Fund to be used in contingency for the benefit of staff and students is operated by him. Further, The Principal and HoDs are delegated to use upto Rs 60000/-and Rs 10,000/- per year respectively in emergency purchases and repairs for the smooth running of each department and Institution.

#### **Grievance redressal system:**

"Grievance Redressal" primarily covers the receipt and processing of complaints from students, a wider definition includes sanctions taken on any issue raised by them to avail services more effectively

Brings to the notice of the higher authorities complaints from Students/Staff regarding the amenities /facilities

- Maintains records of complaints registered and pertinent actions taken
- Maintains a harmonious atmosphere in the campus/ hostels with a feel of concern and sense of belonging
- Maintain reports on Actions taken on the complaints registered
- Bring to the Students / Staff complaints regarding the amenities / facilities to be brought to the notice of the higher authorities
- Maintain a harmonious atmosphere in the campus with a feel of concern and sense of belonging

#### **Grievance redressal system:**

- A grievance redressal committee is formed to look into the complaints from the aggrieved
- An online Grievances reporting mechanism is provided in the college website
- Suggestion / compliant boxes are set up at publically accessible spots in the college
- The report of grievance committee is forwarded to Principal for further action.

8.2.4 Transparency and availability of correct/unambiguous information (3)

Institute Marks : 3.00

(Instruction: Availability and dissemination of information through the internet. Information provisioning in accordance with the Right to Information Act, 2005).

The institution being a private college functioning in the self-financing mode and is not a public authority as per clause 2(h) of the RTI Act 2005. Hence it is not mandatory to establish Right to Information Act 2005 in the institution.

#### **8.3 Budget Allocation, Utilisation, and Public Accounting (10)**

**Total Marks : 10.00**

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

(Instruction: The preceding list of items is not exhaustive. One may add other relevant items if applicable.)

Item	Budgeted in 2023-24	Expenses in 2023-24	Expenses in 2022-23	Expenses in 2021-22
Infrastructure built-up	310	69.12	184.75	7.04
Library	15	3.24	2.66	6.97
Laboratory equipment	120	69.12	102.13	46.21
Laboratory consumables	5	1.09	0.96	4.36
Teaching and non-teaching staff salary	1090	451.31	1013.67	944.70
R&D	12	0	7.30	0
Training and Travel	30	6.32	24.23	14.02
Others	964.70	125.97	1121.84	1189.56
<b>Total</b>	<b>2546.70</b>	<b>726.17</b>	<b>2457.54</b>	<b>2212.86</b>

8.3.1 Adequacy of budget allocation (4)

Institute Marks : 4.00

(Instruction: Here, the institution needs to justify that the budget allocated over the years was adequate.)

Budget requirements under 'recurring' and 'Non-recurring' heads are collected from all the departments/activities before the commencement of the financial year. Allocations are made as per the availability of funds. Spending is monitored by the Senior Administrative Officer. Supplementary allocations are made in special case if needed. The institution carefully monitors the expenses such that the necessities are met without affecting the smooth working of the institution. The management has been very efficiently and effectively doing this over the past years that the institution never had any budget crunch that affected the normal functioning of the institution.

8.3.2 Utilisation of allocated funds (5)

Institute Marks : 5.00

(Instruction: Here the institution needs to state how the budget was utilised during the last three years.)

SI No.	Assessment Year	Budget Allocated (Rs. in lakhs)	Actual Expenditure (Rs. in lakhs)	Percentage of Utilization
1	CFY	2546.70	726.17 <i>-till 30-09-23</i>	28%
2	CFYm1	1975.43	2457.54	124%

3	CFYm2	1756.51	2212.86	126%
4	CFYm3	2149.98	1865.36	87%

## 8.3.3 Availability of the audited statements on the institute's website (1)

Institute Marks : 1.00

(Instruction: Here, the institution needs to state whether the audited statements are available on its website.)

The audited statements of accounts of the institution for the last 3 years are made available on the website of the institution.

Link: <https://sjeetpalai.ac.in/financialreports/>

**8.4 Programme Specific Budget Allocation, Utilisation (10)****Total Marks : 10.00**

Summary of budget for the CFY and the actual expenditure incurred in the CFYm1, CFYm2 and CFYm3 (exclusively for this programme in the department):

Items	Budgeted in 2023-24	Actual Expenses in 2023-24	Budgeted in 2022-23	Actual Expenses in 2022-23	Budgeted in 2021-22	Actual Expenses in 2021-22
Laboratory equipment	3.50	1.64	4.22	0	0.85	0
Software	0	0	0	0	0	0
R&D	0	0	0	0	0	0
Laboratory consumables	0	0	0	0	0	0
Maintenance and spares	0	0.09	0	0	0	0
Training and Travel	0	0	0	0	0	0
Miscellaneous expenses for academic activities	0.90	0	0.98	0.51	0.85	0
Total	4.40	1.73	5.20	0.51	1.70	0

## 8.4.1 Adequacy of budget allocation (5)

Institute Marks : 5.00

(Instruction: Here, the institution needs to justify that the budget allocated over the years was adequate.)

Budget requirements under 'recurring' and 'Non-recurring' heads are collected from all the departments/activities before the commencement of the financial year. Allocations are made as per the availability of funds. Spending is monitored by the Senior Administrative Officer. Supplementary allocations are made in special cases if needed. The institution carefully monitors the expenses such that the necessities are met without affecting the smooth working of the institution. The management has been very efficiently and effectively doing this over the past years that the institution never had any budget crunch that affected the normal functioning of the institution.

## 8.4.2 Utilisation of allocated funds (5)

Institute Marks : 5.00

(Instruction: Here the institution needs to state how the budget was utilised during the last three years.)

All the heads of departments are intimated of the extent of fund allocated against their budget proposals. Major works like construction, upgradation of existing infrastructure, procurement and maintenance of common utilities, housekeeping, procurement of furniture etc. are managed by the Construction Department controlled by the Bursar of the Institution in consultation with the Chairman of the Institution.

**8.5 Library (20)****Total Marks : 20.00**

## 8.5.1 Library space and ambience, timings and usage, availability of a qualified librarian and other staff, library automation, online access, networking, etc (5)

Institute Marks : 5.00

(Instruction: Provide information on the following items.)

- |   |   |
|---|---|
| • Library Services  | Yes   |
| • Carpet area of library (in m <sup>2</sup> )   | 1088  |
| • Reading space (in m <sup>2</sup> )  | 400   |
| • Number of seats in reading space  | 200   |
| • Number of users (issue book) per day  | 36  |
| • Number of users (reading space) per day   | 136   |
| • Timings: During working day, weekend, and vacation                                    | 8.30 am – 6.30 pm, 9.00 am – 3.30 pm (vacation) |
| • Number of library staff   | 5   |
| • Number of library staff with degree in Library  | 3   |
| • Management Computerisation for search, indexing, issue/return records Bar coding used |   |

The library is automated using Koha, an integrated library management system (ILMS) with Web OPAC.

- Library services on Internet/Intranet INDEST or other similar membership Archives
- Library is a member of National Library Network – DELNET.

Library and Information Division of SJCET was established in the year 2002, and serves as a knowledge hub containing resources not only in the form of print but also in e-resources and provides students with access to a vast repository of resources, including books and Journals both print and online. In any academic institution Library plays an important role in the dissemination of knowledge. In fact, the ambiance of the library reflects the quality of the education imparted by the College. SJCET has recognized the importance of the academic vibrations required in the library and has been growing in this direction, right from its very inception. Library is a member of National Library Network – DELNET. Information from National Program on Technology Enhanced Learning (NPTEL) and other Electronic Resources are also available for the user community. Only Library members are allowed to access all materials (such as Books, Journals, Magazines, Digital materials and E-Journals etc.) available in the library collection. The library reading space can accommodate more than 200 students. Library functions such as Acquisition, Circulation, and Cataloging have been automated using KOHA, an integrated library management system (ILMS) with Web OPAC.

#### 8.5.2 Titles and volumes per title (4)

Institute Marks : 4.00

Year	Number Of New Titles Added	Number Of New Editions Added	Number Of New Volumes Added
2021-22	152	122	789
2022-23	69	55	209
2023-24	241	193	802

Number of Titles : 462

Number of Volumes : 1800

#### 8.5.3 Scholarly journal subscription (3)

Institute Marks : 3.00

Details	2023-24	2022-23	2021-22	2020-21
Science as soft copy	3	3	3	3
Science as hard copy	2	2	2	2
Engg. and Tech. as soft copy	465	465	465	465
Engg. and Tech. as hard copy	76	44	39	23
Pharmacy as soft copy				
Pharmacy as hard copy				
Architecture as soft copy				
Architecture as hard copy				
Hotel Management as soft copy				
Hotel Management as hard copy				
Management as soft copy	8398	8398	8398	8398
Management as hard copy	14	3	3	3

#### 8.5.4 Digital Library (3)

Institute Marks : 3.00

- Digital Library Services Yes
- Availability of digital library contents (If available, then mention number of courses, number of e-books, etc. Availability of an exclusive server) IEEE Xplore Digital Library 6867 E-books
- Availability of an exclusive server No
- Availability over Intranet/Internet Yes
- Availability of exclusive space/room Yes
- Number of users per day 82

SJCET digital library is a comprehensive electronic information resource that encompasses a vast array of digital content and publications. It serves as a centralized platform for accessing and managing a diverse range of scholarly materials. With the inclusion of renowned databases such as IEEE Explore, JSSH, Elsevier Science Direct, and Journal of Social Science and Humanities with a total collection of more than 12,500 journals, as well as a collection of 6867 e-books from EBSCO, this digital library offers an extensive collection of resources across various disciplines. The digital library, offers an extensive and diverse range of scholarly materials. It caters to the needs of researchers, academics, and professionals, providing them with a centralized platform for accessing and utilizing valuable information across multiple disciplines. It fosters interdisciplinary dialogue and academic collaboration among scholars in these areas.

#### 8.5.5 Library expenditure on books, magazines/journals, and miscellaneous contents (5)

Institute Marks : 5.00

Year	Expenditure (in Rs.)	Comments, If Any

	Book	Magazines/Journals (for hard copy subscription)	Magazines/Journals (for soft copy subscription)	Misc. Contents	
2021-22	697211	123683	1769046	37270	
2022-23	265676	251404	1948317	35880	
2023-24	327507	65030	13570		As on 31/10/2023. Major payments will be in the month of January 2024 for e-journal subscription

**8.6 Internet (5)****Total Marks : 5.00**

Institute Marks : 5.00

(Instruction: The institute may report the availability of internet in the campus and its quality of service.)

- Internet Services Yes
- Name of the Internet provider BSNL
- Available bandwidth 600 MBPS Leased line 1:1 Ratio
- Access speed Unlimited
- Availability of Internet in an exclusive lab Yes (63)
- Availability in most computing labs Yes
- Availability in departments and other units Yes (30)
- Availability in faculty rooms Yes
- Institute's own e-mail facility to faculty/students Yes (@sjcetpalai.ac.in for faculty and students)
- Security/privacy to e-mail/Internet users Yes (Secure with Sophos XGS 4500)

24 hours Wi-Fi and wired internet is available inside the college campus and Hostels

Internet details	
Service Provider	BSNL
Usage limit	Unlimited
Bandwidth	600 MBPS 1:1
Security	Enabled (with <b>SOPHOS XGS 4500</b> Firmware SFOS 19.0.1 MR-1)
Wired network points	1400 +
Wi Fi	83 Access Points (Sophos Ap 55 and AP320) (Restricted Mode with Authentication and MAC Filtering)

**8.7 Safety Norms and Checks (5)****Total Marks : 5.00**

8.7.1 Checks for wiring and electrical installations for leakage and earthing (1)

Institute Marks : 1.00

**1. Safety Earthing**

All metallic structures, metallic bodies of switchgears, motors, appliances and other electrical equipment's are provided with duplicate earthing conductors as per Indian Standards 3043. There are 18 earth electrodes distributed in the campus for maintaining the potential of the metallic body of equipment's near to the ground potential. The measured earth resistance is less than  $1\Omega$  and the neutral potential is around 1V which is very much less than permissible value.

**2. Earth Leakage Protection**

Earth Leakage Protection of class rooms and laboratories, all the final distribution boards are either TPN MCB DBs or SPN MCB DBs. All these MCB DBs are provided with ELCBs of sensitivity 30mA except for lift installation. For lift installation the sensitivity of the ELCB is 100mA as specified by the Electrical Inspectorate. In addition to this the main supply at substation is backed up with standby earth fault relay at the substation.

8.7.2 Fire-fighting measurements: Effective safety arrangements with emergency / multiple exits and ventilation/exhausts in auditoriums and large classrooms/laboratories, fire-fighting equipment and training, availability of water, and such other facilities (1)

Institute Marks : 1.00

All the buildings in the college campus are regularly inspected and checked from the Kerala Government Fire & Rescue department every year. They issue safety certificate after every such inspection. We have valid safety certificate till March 2024. All the buildings in the campus have multiple exits from upper floor to the ground floor and facility to move to the assembly station. All our instructors are trained to make use of fire extinguishers and firefighting systems. Our campus is blessed with perineal water. Over head tanks are provided at roof tops for fire hydrant systems.

More than adequate natural window ventilation is provided for all class rooms and laboratories as per ECBC norms. In addition, all class rooms are provided with 1200mm sweep ceiling fans at the rate of one fan for 10 to 15 students. Our laboratories are fully air conditioned with air conditioners of more than adequate tonnage.

## 8.7.3 Safety of civil structure (1)

Institute Marks : 1.00

## Report on Safety of Civil Structure and Soil Testing

- i. Soil Test Report (2001 & 2010)
- ii. Structural Stability Report

**Safety of Civil Structure like Soil Testing and Inspected by PWD**

Whenever a new building is proposed, the first thing done is soil investigation. This principle is followed for all buildings in our college and soil investigation report is enclosed under this heading namely the reports of 2001 & 2010.

The Structural Stability report/ Certificate are obtained from Structural Consultant after completing the buildings. We have structural stability certificate for 21 buildings in our campus. The buildings are numbered depending upon the dates of completion of the buildings or building extensions. The latest certificate dated 15/12/2016 is filed. The validity of the certificate is 10 years.

## 8.7.4 Handling of hazardous chemicals and such other activities (2)

Institute Marks : 2.00

(Instruction: The institution may provide evidence that it is taking enough measures for the safety of the civil structures, fire, electrical installations, wiring, and safety of handling and disposal of hazardous substances. Moreover, the institution needs to show the effectiveness of the measures that it has developed to accomplish these tasks.)

- i. Report on handling of hazardous chemicals & e-waste
- ii. Cash bill of e-waste disposal

**Handling of Hazardous chemicals, E-waste at Labs**

In our college hazardous materials or explosive substances are not at all used. Very negligible quantity of chemical reagents or other chemistry related experimental chemicals alone are purchased and kept in our chemistry and water testing laboratories. The chemicals purchased will be fully utilized and the subsequent purchases are made. Disposal of chemicals has not arisen till date.

**E- Waste Disposal**

Substantial quantity of e-waste is generated in our engineering college when computer related gadgets become outdated. Recently, we have disposed several components of computer related items these are sold out to sub-contractor of licenced e-waste collector. A list of e-waste components disposed on 10/05/2022 is given below.

Sl. No.	Item Description	Quantity
1	CRT Monitor	135
2	LCD Monitor	67
3	CPU Full set	172
4	SMPS	40
5	UPS small	2
6	Printer	8
7	Mother Board	35
8	Key board & mouse	85kg
9	Photocopier	1
10	Projectors & Switches	lumpsum

All the above items were sold for a total salvage amount of **Rs. 88,420/-**. Cash bill for the above transaction is attached. Such disposal happens when large amounts of e-waste are generated, usually once in ten years.

**8.8 Counselling and Emergency Medical Care and First-aid (5)****Total Marks : 5.00**

## 8.8.1 Availability of counselling facility (1)

Institute Marks : 1.00

(Instruction: The institution needs to report the availability of the facilities discussed here.)

Counselling facility is available for the students and the employee of this college at the following levels: -

- **Academic Counselling**

There are two professional counsellors here in the college. The students are free to approach the counsellors for help and support. The students can contact their respective faculty member for guidance for any issue affecting them.

Each faculty member is entrusted with 20 students to keep track to their progress and performance. Class committee meetings conducted frequently to know the problems of the students. The mentors are free to send the weak and needed students to the counsellors. The counsellors will try to understand the student's

academic performance. The weak students' have many problems that causes to hinder their learning process. The mentors as well as the counsellors together help the students and their parents to solve his/her problems and help them to get progressed in their academic performances. The College Etlab Software will help the counsellors to understand the students' academic performance and progress.

- **Personal Counselling**

The mentors, the teachers and students are free to approach the counsellors for help and support. The counsellors prefer to give personal counsellors to the students and their parents whenever it is necessary. The students can contact their respective faculty member for guidance for any issue affecting them. The counsellors can give the necessary counselling and guidance for the students, especially the weak students come into the knowledge of that how they can improve their leading strategy and get high academic performances through that to acquire good result.

- **Career Counselling**

Career Guidance and motivational program by Alumni, External guests and faculty are organized often. Career and Placement cell of the college under the guidance of a placement officer offers career counseling the students.

- **Psycho-Social Counselling**

Psycho-social counselling is provided through various programme like retreat, social service NSS etc.In order to equip the members for effective mentoring SJCET has organize a membership training programme. Training is imparted to mentors by experts for outside.

- **Anti-Ragging Committee**

The committee Facilitate with help of counsellors as well as the students mentors the students are free to contact with their mentors as well as the counsellor for seeking help for any kind of harassments. The College is ever ready to stretch their hands to the students and workers.

- **Internal Complaint Committee**

The Cell is working very actively. The internal complaint committee has been constituted as per SJCET regulations. The Women employees, the girl students and their parents can approach the committee members for any complaint pertaining to gender sanitation and sexual harassment. The committee members and the mentor can send them to the counsellors for counselling help.

8.8.2 Arrangement for emergency medical care (2)

Institute Marks : 2.00

#### **College Medicare**

College Medicare provides first aid facilities and basic medical attention to the students and staff members of SJCET, Palai. The team of Medicare ensures immediate medical attention when an emergency occurs. The services of a visiting doctor and a permanent nurse are available at the Medicare Centre.

#### **Staff:**

**Doctor:** Dr. Roshan Rose Mathew, MBBS, Medical Officer, Internal Medicine, Mar Sleeva Medicity, Palai, Kottayam, Kerala

**Staff Nurse:** Ms. Pilsa Philip, General Nursing

#### **Services provided:**

- First aid services
- Wound dressing
- Nebulization
- Steam inhalation
- BP checking
- Blood sugar testing
- Fever diagnosing.

#### **Equipment's:**

- Digital infrared thermometer
- Thermometer
- BP apparatus
- Nebulizer
- Steam inhaler
- Hot water bag
- Glucometer
- Stethoscope
- Induction cooker
- Beds
- Sanitary Napkin Vending Machine

- Wall Mounted Height Measuring Scale
  - Body Weighing Scale

## Registers:

- Student and staff admission register
  - Doctor consultation register
  - Blood group register
  - Blood donation register
  - Medicine and equipment purchase stock and bill register
  - Napkin Pad register

## **Medicines:**

First aid medicines for pain relief, fever, cold, wound, dermatitis medicine etc.

## **MOU with Hospital:**

St. Joseph's College of Engineering and Technology, Pala has signed an MOU with Mar Sleeva Medicity, Palai for exclusive Healthcare benefits for our students and employees. As per the MOU, on one day in every week service of a doctor from Mar Sleeva Medicity, Palai will be available at the college campus (at Medicare) for the Staff and Students. On all other days whenever a Staff member or a Student needs any kind of medical attention, the cases will be handled by the doctors of Mar Sleeva Medicity, Palai. In case of an accident or any other emergency situation, the hospital authorities will give urgent medical attention to the patients.

In case of an emergency, hospital authorities shall provide an ambulance to bring the patient to the hospital.



Fig: Images of College Medicare facility

### 8.8.3 Availability of first-aid unit (2)

Institute Marks : 2.00

First-aid units are made available in

- Medi-care (St. Francis Block, Ground Floor, Room No: 002)
  - Laboratories

## **9 Continuous Improvement (100)**

Total Marks : 81.87

**This criterion essentially evaluates the improvement of the different indices that have already been discussed in earlier sections**

### 9.1 Improvement in Success Index of Students (10)

**Total Marks : 7.75**

Institute Marks : 7.75

From 4.1

a, b and c are the success indices which correspond to LYGM2, LYGM1 and LYG respectively

Assessment =  $(b-a) + (c-b) + (a+b+c)x(10/3)$

Items	2019-20(c)	2018-19(b)	2017-18(a)	Assessment
Success Index	0.83	0.56	0.98	7.75

### 9.2 Improvement in Academic Performance Index of Students (10)

**Total Marks : 7.94**

Institute Marks : 7.94

From 4.2

a, b and c are calculated respectively for LYGM2, LYGM1 and LYG by dividing the API values, obtained from the criterion 4.2 by 10 . The maximum value of a, b, and c should not exceed one.

Assessment =  $(b-a) + (c-b) + (a+b+c)x(10/3)$

Items	2019-20(c)	2018-19(b)	2017-18(a)	Assessment
API	0.81	0.79	0.77	7.94

### 9.3 Improvement in Student-Teacher Ratio (10)

**Total Marks : 8.16**

Institute Marks : 8.16

From 5.1

a, b and c are calculated respectively for CAYM2, CAYM1 and CAY by dividing the STR values, obtained from the criterion 5.1 by 20. The maximum value of a, b, and c should not exceed one.

Assessment =  $(b-a) + (c-b) + (a+b+c)x(10/3)$

Items	2023-24 (c)	2022-23 (b)	2021-22 (a)	Assessment
STR	0.86	0.86	0.67	8.16

### 9.4 Enhancement of Faculty Qualification Index (10)

**Total Marks : 5.94**

Institute Marks : 5.94

From 5.3

a, b and c are calculated respectively for CAYM2, CAYM1 and CAY by dividing the FQI values, obtained from the criterion 5.3 by 10. The maximum value of a, b, and c should not exceed one.

Assessment =  $(b-a) + (c-b) + (a+b+c)x(10/3)$

Items	2023-24 (c)	2022-23 (b)	2021-22 (a)	Assessment
FQI	0.58	0.58	0.64	5.94

### 9.5 Improvement in Faculty Research Publications, R&D Work and Consultancy Work (10)

**Total Marks : 2.08**

Institute Marks : 2.08

From 5.7 & 5.9

a, b and c are calculated respectively for CAYM2, CAYM1 and CAY by dividing the FRP and FRDC values, obtained from the criterion 5.7 and 5.9 by 20 . The maximum value of a, b, and c should not exceed one.

Assessment =  $(b-a) + (c-b) + (a+b+c)x(10/3)$

Items	2023-24 (c)	2022-23 (b)	2021-22 (a)	Assessment
FRP	0.48	0.50	0.18	4.17
FRDC	0.00	0.00	0.00	0.00

**9.6 Continuing Education (10)****Total Marks : 10.00**

Institute Marks : 10.00

In this criterion, the institution needs to specify the contributory efforts made by the faculty members by developing the course/laboratory modules, conducting short-term courses/workshops, etc., for continuing education during the last three years

<b>Module Description</b>	<b>Any Other Contributory Institute/Industry</b>	<b>Developed/Organized By</b>	<b>Duration</b>	<b>Resource Persons</b>	<b>Target Audience</b>	<b>Usage and Citation,etc</b>
Advanced Web Development Technology	Disha Soft Pvt. Ltd	Department of Computer Applications,	30 Hours	Faculties from Department and Experts from Disha Soft Pvt. Ltd.	Final year MCA Students	60
Machine Learning Application an Industrial Perspective.	NIL	Department of Computer Applications,	36 Hours	Dr. Soumya George	External research scholars and MCA final year students	60
Introduction to Emerging Technologies in Industry and Research	NIL	Department of Computer Applications,	36 Hours	Faculties from Department	Final year MCA Students	60
Techsphere- workshop series	NIL	Department of Computer Applications,	1 Day Session	Faculties from Department	MCA students & external Participation	200
Computer hardware and networking	NIL	Department of Computer Applications,	3 hours	Mr.Alex Jose	MCA students	54

**9.7 New Facility Created (15)****Total Marks : 15.00**

Institute Marks : 15.00

The Department of Computer Applications was established in 2008, initially admitting 60 students. The inaugural MCA batch commenced in 2008, affiliated with Mahatma Gandhi University. In 2015, in accordance with AICET norms, the department gained approval for lateral entry admissions during the 2nd year.

In 2016, the department switched its affiliation to APJ Abdul Kalam University. By 2019, the total intake has been revised to 120 for the MCA 3-year Course. In the year 2020, the intake reduced to 60, and the MCA course duration was shortened to 2 years.

In 2022, the department attained the status of a research center, currently hosting two PhD research scholars: 1 part-time scholar & 1 full-time scholar. Students are encouraged to publish their academic seminar presentations as research papers. The department provides a Research Room with PCs and internet access to foster research interests. An increasing number of students have shown enthusiasm for attending conferences and presenting papers, contributing to improved self-confidence and communication skills.

Department always encourages the research aptitude of the faculty members. More than 80% of faculties currently pursuing their PhDs in various reputed universities.

From its inception, the department has emphasized enhancing creativity alongside academics. The Department Association SMASH was formed to develop students' overall skill sets.

The annual technical fest, "FENSTRA," serves as a platform for students to explore cutting-edge technology, showcasing their skills in programming, website/software development, event organizing, and management. FENSTRA features captivating competitive events, including website development, algorithm design, and coding challenges, creating an atmosphere of healthy competition and innovation. These contests not only provide an exhilarating experience but also empower our students, offering an extra edge in their technical journey.

Collaborating with the Department Association, annual invited talks enhance students' technical and social skills, aligning them with the evolving IT industry. The department also conducts add-on courses to impart technical knowledge beyond the curriculum.

The department prioritizes student placements, organizing aptitude training, mock interviews, and English communication sessions. A dedicated hour weekly is allocated for placement training, covering aptitude sessions, mock group discussions, and coding challenges.

Campus Software Etlab gives an up-to-date account of the academic and non-academic details of students and provides the relevant information as per the requirement. Parent login facility allows the parents to monitor the attendance and academic performance of students.

The Department Learning Management System (MOODLE) houses a repository of aptitude questions, providing individual access for each student. Teachers monitor student progress and have unrestricted access to aptitude tests on MOODLE.

The MCA course welcomes graduates from any discipline, offering a postgraduate degree in Computer Applications. The department provides a robust bridge course aimed at strengthening students' foundational skills for the demanding MCA curriculum. This comprehensive course explores into key areas such as C Programming and Data Structures, Operating Systems, and Mathematics, extending beyond the regular syllabus to equip students with practical competencies. By incorporating supplementary resources and reference books, especially for students from non-computer science backgrounds, benefit from a well-rounded learning experience.

The department library provides reference text books prescribed by the syllabus as well as books on various emerging technologies and topics allowing students to update their knowledge. The department has introduced a book donation campaign in view of increasing the general book count.

To enhance academic performance, the department conducts remedial sessions for weak learners after each internal assessment examination.

Department provides exclusive facilities like seminar hall, conference room, department library, computer lab, waiting rooms for both boys and girls, water dispenser etc which satisfies the various requirements of students during their course duration.

Institution hostels have an exclusive wing for PG students, which provides a serene environment for pursuing their academic activities.

Recognizing the transformative phase students undergo, the department instituted a mentoring system. Each faculty mentor oversees 15-20 students, organizing individual sessions to address personal difficulties. Professional counselors may be recommended if needed, with follow-up sessions conducted at their discretion. Regular communication with parents ensures they are informed about their child's progress, challenges, and overall development. This approach has resulted in noticeable improvements in students' behavior, confidence levels, and work ethic.

The SJCET Start-up Bootcamp- IEDC (Innovation and Entrepreneurship Development Centre) was set up on 9th March 2015 as a part of the Kerala Start-up Mission (KSUM) initiative to develop a start-up culture amongst students. The IEDCs are platforms set up in Engineering, Management, Arts and Science Colleges and Polytechnics with an aim to provide students an opportunity to experiment and innovate. The aim of the Innovation and Entrepreneurship Development Cell (IEDC) is to develop and strengthen entrepreneurial qualities in budding professionals who are interested in starting their own ventures. The Institute provides infrastructure and technical support to the students who have innovative ideas to transform into new products and services for the betterment of society. In collaboration with IEDC, the department has organized various sessions to identify and promote Entrepreneurship skills of students.

**9.8 Overall improvement since last accreditation, if any, otherwise, since the commencement of the programme (25)**

**Total Marks : 25.00**

Institute Marks : 25.00

Specify the overall improvement:

Specify the Strengths/Weakness	Improvement Brought In	Contributed By	List the PO(s), which are strengthened	Comments, if any
2023-24	Additional infrastructure provided exclusively for the department	Management	All POs	Exclusive facilities are always contribute positively towards the overall growth of the department
2022-23	Department recognized as a Research Centre	APJAKTU, Trivandrum	PO1 to PO11	Students get opportunity to continue their higher studies in the department
2021-22	Research Activities of faculties Increased	Faculty	PO1 to PO11	Enhancement of qualification of the faculty helps the students to attain their goals
2020-21	Revised Syllabus introduced by considering the industrial needs	APJAKTU, Trivandrum	All POs	Students perform well in the companies after getting placements