**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE**

(UGC-AUTONOMOUS INSTITUTION)
Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA

## Department of Computer Applications

Date: 23.05.2024

### Composition and approval of Program Assessment Committee (PAC)

The Following members are nominated and approved for constitutions of Program Assessment Committee (PAC).

| | |
|---|---|
| 1. | **Dr. N. Naveen Kumar** <br> Associate Professor & HoD, <br> Dept. of Computer Applications, MITS. |
| 2. | **Dr. M. Saravanamuthu** <br> Assistant Professor, <br> Dept. of Computer Applications, MITS. |
| 3. | **Dr. J. Srinivasan** <br> Assistant Professor, <br> Dept. of Computer Applications, MITS. |
| 4. | **Dr. C. Sivaraj** <br> Assistant Professor, <br> Dept. of Computer Applications, MITS |
| 5. | **Dr. R. Maruthamuthu** <br> Assistant Professor, <br> Dept. of Computer Applications, MITS. |

Responsibilities of the committee:
1. Monitors attainment of COs, POs and PEOs
2. PAC evaluates programme effectiveness and process necessary changes
3. Preparation of periodic reports, records on program activities, progress and status reports.

HOD/Computer Applications

Principal

Copy to
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- Vice Principal Academics
- Programme Assessment Committee
- Department File

Date: 25.05.2024

## Department of Computer Applications

### Circular

It is hereby informed to all the members of **Program Assessment Committee (PAC)** that Program Assessment Committee (PAC) Meeting is scheduled on 29-05-2024, at 11:00 AM in the HoD Chamber, Department of Computer Applications, MITS, Madanapalle, for addressing and reviewing the assessment method for attainment of Course Outcomes (COs), Program Outcomes (POs) and Program Educational Outcomes (PEOs).

**Agenda:**

1. Assessment on previous results and analysis of Course outcomes (COs), Program Outcomes (POs) and Program Educational Outcomes (PEOs) of 2023-24 Academic year, I semester subjects.
2. Discussion on assessment methods to achieve attainment level in R-22 Regulation for PG syllabus.
3. Collection of feedback and analysing it.
4. Corrective actions based on the feedback received.
5. Discussion on department vision and mission.
6. Any other matter with the permission of the chair.

Dr. N. Naveen Kumar

HoD/MCA

PAC Members

| 1. | Dr. N. Naveen Kumar |
|----|---------------------|
| 2. | Dr. M. Saravanamuthu |
| 3. | Dr. J. Srinivasan |
| 4. | Dr. C. Sivaraj |
| 5. | Dr. R. Maruthamuthu |

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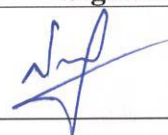
## Department of Computer Applications

### Program Assessment Committee (PAC) Meeting

**Date: 29.05.2024**

### Minutes of the Meeting

In concern with the Semester wise Feedback analysis and corrective actions, PAC has been assembled on 29th May 2024 at 11:00 AM in the HoD Chamber for addressing and reviewing the assessment method for attainment of Course Outcomes (COs), Program Outcomes (POs) and Faculty Feedbacks.

**Agenda:**

1. Assessment on previous results and analysis of Course outcomes (COs), Program Outcomes (POs) and Program Educational Outcomes (PEOs) of 2023-24 Academic year, I semester subjects.
2. Discussion on assessment methods to achieve attainment level in R-24 Regulation for PG syllabus.
3. Discussion on R24 curriculum Structure and proposed COs of First year courses.
4. Collection of feedback and analysing it.
5. Corrective actions based on the feedback received.
6. Discussion on department vision and mission.
7. Any other matter with the permission of the chair.

**Members Present:**

| S. No | Name of the Faculty with Designation | Signature |
|-------|--------------------------------------|-----------|
| 1. | **Dr. N. Naveen Kumar** Associate Professor & HoD, Dept. of Computer Applications, MITS. | |
| 2. | **Dr. M. Saravanamuthu** Assistant Professor, Dept. of Computer Applications, MITS. | |
| 3. | **Dr. J. Srinivasan** Assistant Professor, Dept. of Computer Applications, MITS. | |
| 4. | **Dr. C. Sivaraj** Assistant Professor, Dept. of Computer Applications, MITS | |
| 5. | **Dr. R. Maruthamuthu** Assistant Professor, Dept. of Computer Applications, MITS. | |

HoD, welcomed the members of the committee who had assembled for reviewing the assessment method of Course Outcomes (COs), Program Outcomes (POs) and Feedbacks for the department of computer applications.

## Department of Computer Applications

The following points were discussed during the meeting and the minutes were recorded as below,

### A. MCA – I Year I Semester (23 Admitted)

The CO attainment of I-I courses indicates that most courses meet or exceed the target CO attainment level of 2.0, with strong performance in lab and communication skills courses. However, specific COs in core theory subjects like Operating Systems, Computer Networks, and Mathematical Foundations show gaps requiring targeted instructional improvements.

- In **22MATP101 – Mathematical Foundations for Computer Applications**, CO2 (1.88) has not met the target of 2.0. This CO focuses on constructing matrices, digraphs, and Hasse diagrams. The gap suggests that students face difficulty in understanding abstract relational structures. To bridge the gap, Introduce more visual aids and real-life applications during instruction, and conduct additional tutorials focused on problem-solving with matrices and relations.

- In **22MCAP102 – Database Management Systems**, CO2 (2.04) is marginally above target, but CO4 (1.56) is below target. CO4 relates to transaction processing and concurrency control. Students likely struggle with the abstract and theoretical aspects of transaction handling. To bridge the gap, include interactive simulations of transaction scenarios and add group-based mini projects to simulate real-time concurrent transactions.

- In **22MCAP103 – Computer Organization and Architecture**, CO4 (1.88) falls below the benchmark. This CO deals with memory organization structures. The complexity of understanding different types of memory hierarchies may be the root cause. To bridge the gap: provide more real time example during instruction.

- In **22MCAP104 – Operating Systems**, CO4 (1.56) and CO5 (2.04) are problematic. CO4 addresses memory management, and CO5 concerns file systems. These technical areas may not be well-supported by practical examples in the classroom. To bridge the gap, increase exposure to memory allocation methods and file system structures via case studies.

- In **22MCAP105 – Computer Networks**, CO4 (1.56) is below target, which involves selecting the correct network layer functionality for given applications. This gap indicates insufficient understanding of protocol layer selection.

### B. MCA – II Year I Semester

The attainment of MCA II-I 2022 admitted shows that the most courses meet or exceed the target level of 2.0, though several core and elective theory courses show underperformance in key COs, particularly in applied and technical concepts.

- In 22MCAP111 – Mobile Application Development, CO2 (1.24), CO3 (1.56), and CO4 (1.36) are below the target. These outcomes relate to UI development, broadcast receivers/services, and database use in Android. Students may be struggling with implementing backend components. Reinforce learning with hands-on mini projects and integrate step-by-step tutorials for broadcast services.

- In 22MCAP113 – Java Programming, CO1 (1.56), CO2 (1.24), and CO4 (0.92) are underperforming, especially in areas of basic constructs, inheritance, and I/O operations. This suggests foundational gaps in Java syntax and object-oriented principles. Action Plan: Begin with remedial Java sessions and enhance lab support for inheritance and I/O-based exercises.

## Department of Computer Applications

- In 22MCAP408 – Deep Learning, CO4 and CO5 (1.56 each) fall below the benchmark. These COs concern RNN applications and writing DL algorithms. Students may lack exposure to real datasets and coding complex models. To bridge the gap, introduce more tutorial and demonstration on the specific topics and encourage students to self-learning with case studies.

- In 22MCAP415 – Reinforcement Learning, CO4 (1.08) is significantly below target, which involves understanding policy gradient methods. The abstract nature of RL algorithms may hinder comprehension. To bridge the gap, introduce more tutorial and demonstration on the specific topics and encourage students to self-learning with case studies.

- In 22MCAP417 – Software Project Management, CO3 (1.56), CO4 (0.92), and CO5 (1.72) are below threshold, dealing with planning, risk, monitoring, and team management. Students likely struggle with applying theoretical models to practical situations. To address the gap, Use case studies and project simulations, assign group tasks with defined roles.

- In 22MBAP303 – Management Information System, CO4 (1.56) and CO5 (1.24) are weak, focusing on system vulnerabilities, decision-making processes, and security. This suggests a gap in real-world application understanding. Action Plan: Incorporate cybersecurity case discussions and organize guest lectures by industry experts.

C. The Committee members have not suggested any modification in the department vision & mission as it is in line with the institutional vision & mission, POs, PEOs. The **Mapping of PEO (Program Educational Objectives)** to the **Department Mission** has been retained as per the previous structure, ensuring continuity in alignment with the program's overarching goals and the department's mission.

D. Committee members discussed on the Collected feedback from the students for the I year I semester, and II year I semester for all the theoretical, practical, and open electives using the respective template.

E. In feedback analysis, all the subjects have attained more than the threshold value 3.5.

F. The committee members have discussed about R24 Course Structure along with proposed course outcomes (COs) of first year courses and approved the same with recommendation of incorporating possible suggestions from stakeholder feedback.

G. Direct and Indirect assessment tools for all the attainment calculations (CO and PO) also recommended to retained for the attainment calculation of R24 regulation. The Tools details are attached.

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## Department of Computer Applications

**H.** On identifying the results for poor performance of the few faculties, members suggested,

- Ensure the syllabus is completed within the stipulated timeframe without compromising on quality.
- Organize lectures more systematically by incorporating ICT tools and facilities to facilitate better understanding.
- Use relevant and practical examples wherever possible to clarify concepts and enhance learning.
- Conducted extra tutorial sessions and provided remedial classes if necessary to support struggling students and bridge learning gaps.

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- Vice Principal Academics
- Program Assessment Committee
- Department File

Dr.N.Naveen Kumar

PAC Chairperson

HOD/Computer Applications

Head of the Department

Master of Computer Applications

Madanapalle Institute of Technology & Science

MADANAPALLE - 517 325

## Department of Computer Applications

Date: 10.10.2024

### Composition and approval of Program Assessment Committee (PAC)

Following members are nominated and approved for constitutions of Program Assessment Committee (PAC).

| 1. | **Dr. N. Naveen Kumar** Professor & HoD, Dept. of Computer Applications, MITS. |
|----|----|
| 2. | **Dr. M. Saravanamuthu** Associate Professor, Dept. of Computer Applications, MITS. |
| 3. | **Dr. C. Sivaraj** Associate Professor, Dept. of Computer Applications, MITS |
| 4. | **Dr. J. Srinivasan** Assistant Professor, Dept. of Computer Applications, MITS. |
| 5. | **Dr. N. Nirmala Devi** Assistant Professor, Dept. of Computer Applications, MITS |

Responsibilities of the committee:
1. Monitors attainment of COs, POs and PEOs.
2. PAC evaluates programme effectiveness and process necessary changes.
3. Preparation of periodic reports, records on program activities, progress and status reports.


HoD/Computer Applications

Principal

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## Department of Computer Applications

Date: 14.10.2024

## Circular

It is hereby informed to all the members of Program Assessment Committee (PAC) that Program Assessment Committee (PAC) Meeting is scheduled on 18-10-2024, 11:00 AM in the HoD Chamber, MITS, Madanapalle, for addressing and reviewing the assessment method for attainment of Course Outcomes (COs), Program Outcomes (POs) and Program Educational Outcomes (PEOs).

**Agenda:**

1. Assessment on previous results and analysis of Course outcomes (COs), Program Outcomes (POs) and Program Educational Outcomes (PEOs) of 2023-24 Academic year, II semester subjects.
2. Discussion on assessment methods to achieve attainment level in R-24 Regulation for PG syllabus.
3. Discussion on department vision and mission.
4. Discussion on R24 curriculum Structure and proposed COs.
5. Any other matter with the permission of the chair.

Dr.N.Naveen Kumar

HoD/Computer Applications

| | |
|---|---|
| 1. | Dr. N. Naveen Kumar |
| 2. | Dr. M. Saravanamuthu |
| 3. | Dr. C. Sivaraj |
| 4. | Dr. J. Srinivasan |
| 5. | Dr. N. Nirmala Devi |

## Department of Computer Applications

### Program Assessment Committee (PAC) Meeting

**Date: 18.10.2024**

### Minutes of the Meeting

In concern with the Semester wise Feedback analysis and corrective actions, PAC has been assembled on 18. October, 2024 at 11.00 a.m. in the HoD Chamber for addressing and reviewing the assessment method for attainment of Course Outcomes (COs), Program Outcomes (POs) and Faculty Feedbacks.

**Agenda:**

A. Assessment on previous results and analysis of Course outcomes (COs), Program Outcomes (POs) and Program Educational Outcomes (PEOs) of 2023-24 Academic year, II semester subjects.
B. Discussion on assessment methods to achieve attainment level in R-24 Regulation for PG syllabus.
C. Discussion on overall 2024 admitted batch PO attainment.
D. Discussion on department vision and mission.
E. Discussion on R24 curriculum Structure and proposed COs.
F. Any other matter with the permission of the chair.

**During the meeting, the following Committee Members were Present:**

| S.No | Name of the Faculty with Designation | Signature |
|------|--------------------------------------|-----------|
| 1. | **Dr. N. Naveen Kumar** <br> Professor & HoD, <br> Dept. of Computer Applications, MITS. | |
| 2. | **Dr. M. Saravanamuthu** <br> Associate Professor, <br> Dept. of Computer Applications, MITS. | |
| 3. | **Dr. C. Sivaraj** <br> Associate Professor, <br> Dept. of Computer Applications, MITS | |
| 4. | **Dr. J. Srinivasan** <br> Assistant Professor, <br> Dept. of Computer Applications, MITS. | |
| 5. | **Dr. N. Nirmala Devi** <br> Assistant Professor, <br> Dept. of Computer Applications, MITS | |

## Department of Computer Applications

HoD, welcomed the members of the committee who had assembled for reviewing the assessment method of Course Outcomes (COs), Program Outcomes (POs) and Feedbacks for the Department of Computer Applications.

The following points were discussed during the meeting and the minutes were recorded as below,

### A. MCA – II Year II Semester (2022 Admitted)

The attainment of all the courses 22MCAP703-comprehensive viva, 22MCAP702 Internship/Major Project are achieved the target level of 2.

### B. MCA – I Year II Semester (2023 Admitted)

The attainment table reveals that most courses have achieved or exceeded the target CO level of 2, except for specific COs in subjects like Data Structures, Cryptography, and AI. Practical labs show high attainment in all COs. Gap analysis indicates that several courses have COs falling below the target threshold.

- In **22MCAP107 – Data Structure Algorithms**, CO2 (1.72), CO3 (1.56), and CO5 (1.24) are below target, indicating a need for reinforcement in linked list operations, non-linear structures, and problem-solving strategies.

- **22MCAP109 – Cryptography and Network Security** shows gaps in CO3 (1.88) and CO4 (1.56), suggesting a need to strengthen concepts around secure hashing, digital signatures, and authentication mechanisms.

- Similarly, **22MCAP110 – Artificial Intelligence** requires attention in CO3 (1.40) and CO4 (1.88), corresponding to image processing, computer vision, and reinforcement learning, warranting additional case studies or project-based learning.

- **22MCAP401 – Machine Learning Algorithms and Applications** has a shortfall in CO4 (1.88), necessitating deeper engagement in clustering techniques.

- **22MCAP403 – Agile Software Development Process** shows a CO4 (2.00) just at the threshold but may still benefit from improved exposure to agile frameworks.

- For lab-integrated or skill courses, **22MCAP203, 204, and 205 (Full Stack Web Development Lab, Data Structures Lab, Software Engineering Lab)** show high attainment on all COs.

- In **22MCAP602 – Programming with MATLAB**, all COs are above target, hence no gap exists.

- **Bridging strategies** should include additional tutorial sessions, focused assignments, project-based learning, mini projects on clustering/image processing, hands-on lab enhancements, and targeted assessments that directly map to the underachieved COs.

## Department of Computer Applications

**C.** PO attainment of 2022 Admitted Batch

| Assessment Method | PO1 | PO 2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 |
|---|---|---|---|---|---|---|---|---|
| Attainment Level | 2.40 | 2.32 | 2.34 | 2.42 | 2.36 | 2.30 | 2.47 | 2.31 |
| Target Attainment | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |

The gap analysis for the MCA program, reveals that the program performs well in most areas but still has some areas that need improvement.

- **PO1: Foundation Knowledge** has perfectly met the target, with an attainment level of 2.40, showing strong proficiency in core concepts like mathematics, programming, and coding.
- **PO2: Problem Analysis** is slightly below target (2.32 vs. 2.4), with a small gap of 0.08, indicating room for improvement in problem formulation and critical thinking, especially around customer-centric issues.
- Similarly, **PO3: Development of Solutions** has a minor gap (2.34 vs. 2.4), suggesting the need for more focus on integrating **ESG/SDG goals** in solution development.
- **PO4: Modern Tool Usage** slightly exceeds the target (2.42 vs. 2.4), reflecting strong performance in selecting and applying modern computational tools.
- **PO5: Individual and Teamwork** shows a small gap (2.36 vs. 2.4), indicating that teamwork and leadership development, especially in agile methodologies, could be further emphasized.
- The largest gap is in **PO6: Project Management and Finance** (2.30 vs. 2.4), where students could benefit from additional practical experience in managing projects and understanding financial principles.
- **PO7: Ethics**, however, exceeds the target with an attainment of 2.47, showing that students are performing well in applying ethical standards and understanding cybersecurity. Finally,
- **PO8: Life-long Learning** has a slight gap (2.31 vs. 2.4), indicating that while students are aware of the need for continuous learning, more focus is needed to install the mindset of adapting to emerging technologies throughout their careers.

These gaps suggest a need for strengthening practical exposure to real-world project handling, integrating ethical considerations in software development, and promoting continuous learning through industry-relevant training or certifications.

**D.** The committee members have suggested to conduct guest lectures, workshops, industrial visits, student development programs to improve the COs more than the target level.

**E.** Since a few Program Outcomes (POs) did not meet the target attainment level, the committee has recommended retaining the PO attainment target level of **2.4** for the **2024 admitted batch,** to ensure consistent monitoring and improvement in the underperforming areas.

**F.** Direct and Indirect assessment tools for all the attainment calculations (CO and PO) also recommended to retained for the attainment calculation of R22 regulation. The Tools details are attached.

## Department of Computer Applications

G. The Committee members have not suggested any modification in the department vision & mission as it is in line with the institutional vision & mission, POs, PEOs. Also, PEOs with Mission mapping is retained and attached with the minutes.

H. Direct and Indirect assessment tools for all the attainment calculations (CO and PO) also recommended to retained for the attainment calculation of R24 regulation. The Tools details are attached.

I. The Committee members have not suggested any modification in the department vision & mission as it is in line with the institutional vision & mission, POs, PEOs. Also, PEOs with Mission mapping is retained and attached with the minutes.

J. Committee members discussed on the Collected feedback from the students for the I year II semester, II-year II semester, for all the theoretical, practical, open electives and audit courses, MOOCs using the respective template.

**K.** In feedback analysis, all the subjects have attained more than the threshold value 3.5.

**L.** On identifying the results for poor performance of the few faculties, members suggested,
  - Incorporate regular assessments (quizzes, assignments, and projects) to monitor student progress and identify areas of improvement.
  - Implement peer learning activities to encourage collaborative learning and knowledge sharing among students.
  - Use case studies, group discussions, and role-playing exercises to make learning more engaging and interactive.
  - Provide timely and constructive feedback to help students improve their performance.
  - Encourage the use of online resources like MOOCs, webinars, and e-libraries to supplement classroom learning.
  - Conduct practical workshops and hands-on training sessions to bridge the gap between theory and practice.

Dr.N.Naveen Kumar
PAC Chairperson
HoD/Computer Applications
Head of the Department
Dept. of Computer Applications
Madanapalle Institute of
Technology & Science
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