



# **MUTHAYAMMAL ENGINEERING COLLEGE**

**(An Autonomous Institution)**

**(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram - 637 408, Namakkal Dist., Tamil Nadu**



## **INTERNAL QUALITY ASSURANCE CELL**

### **INNOVATIVE PRACTICES FOR STUDENTS**



# MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)


Rasipuram - 637 408. Namakkal Dt., Tamil Nadu



## INTERNAL QUALITY ASSURANCE CELL

### INNOVATIVE PRACTICES FOR STUDENTS (IPS)

|        |   |
|--------|---|
| IPS#1  | TLeG : Technology Learning Group                            |
| IPS#2  | MuDiL : MultiDisciplinary Lecture                           |
| IPS#3  | MKC : Must Know Concepts (Oral Examination)                 |
| IPS#4  | SACT : Students Activities Credits - Target                 |
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| IPS#7  | PSM : Peer Student Mentoring                                |
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| IPS#12 | VASD : Value Addition/Skill Development Courses             |
| IPS#13 | MuSIC : Muthayammal Student Idea Contest                    |
| IPS#14 | I2P : Idea to Product                                       |
| IPS#15 | IC : Industrial Certification                               |
| IPS#16 | TISIGE : Teachers Support for Idea Generation and Execution |

  
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MUTHAYAMMAL ENGINEERING COLLEGE  
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RASIPURAM-637 408. NAMAKKAL Dt.,  
TAMILNADU.



## IPS#1: TLeG - Technology Learning Group

Students are to be prepared with knowledge in Advanced Technologies to face the challenging world. In this context 50 Emerging Technologies are identified to train the Students. TLeG acts as a knowledge sharing hub in emerging Technologies which helps the students to become expert in minimum of two or three emerging areas during the period of study. This enhances the employability in the challenging environment.

### Objectives

- To facilitate the formation of various Technology Learning Groups
- To focus on Advanced Learning by Students through Expert Lectures, TechTalks, Seminars and Interactions
- To motivate the Students to become masters in the chosen Domain
- To encourage Students to present Papers and Projects in various Technical Competitions

### Implementation Strategy

- Group is established with interested Students.(Minimum of 20 Students)
- Students from allied Departments are encouraged
- Purpose of joining the Group and the expected outcome from the Group is explained
- Technical write up by the Group Lead (Minimum of 4 Pages as per given template) is prepared to share with the Students
- Video for about 20 minutes on the topic emphasizing the future scope on the chosen group is prepared and shared
- Discussion schedule is prepared and executed

### Outcome of the Practice

- Students Learning levels in Emerging Technologies are ensured
- Interaction and Presentation skills are enhanced
- More No. of Certificates earned by Students

### Contribution for PO Attainments

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
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## IPS#2: MuDiL – MultiDisciplinary Lectures

MuDiL is an Multidisciplinary Lectures by the Faculty Members for the Students. The Faculty Members interact with other Department Students and motivate them to share their ideas for finding solution for Real Time Problems.

### Objectives

- To enhance inter-Department Collaborations
- To focus on Multi-Disciplinary activities

### Implementation Strategy

- Students are motivated to share their ideas for finding solution for Real Time Problems
- Idea Ambassadors are identified to interact with peer groups studying in various Programmes
- Collected Ideas are maintained in the Idea Tank
- MultiDisciplinary Activities like Seminars, Projects and Paper Presentation are organized

### Outcome of the Practice

- Interdepartmental collaborations have enhanced
- More No. of Multidisciplinary Projects have been done by students
- Students enrollment in open electives offered by other department has increased
- Students have better Multidisciplinary Knowledge to serve in Industries
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### Contribution for PO Attainments

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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### **IPS#3: MKC - Must Know Concepts (Oral Examination)**

Every Student is expected to know the concepts in their programme of study. The level of understanding is examined through Oral Examination. Must Know Concepts Learning focuses on fundamental as well as advanced learning by the Students through the materials for each Course prepared by the Faculty Members.

#### **Objectives**

- To ensure that the Students learn the concepts in all courses without any ambiguity
- To enhance the Oral Presentation Skill with clarity
- To prepare the Students for Technical Interviews

#### **Implementation Strategy**

- Faculty Members are provided the instructions and format to prepare the concepts, the Students must know in the particular Course
- Faculty prepares the Key Terminologies and concepts without ambiguity
- Senior Faculty Team verifies the materials prepared by the Course Teacher
- Learning Materials (MKC Materials) are provided to Students at the beginning of the Semester
- Viva Voce Examination in regular interval are conducted to evaluate the learning levels
- Internal and External Examiners are invited for evaluating the Students Performance
- Consider this practice as one of the Assessment Tool for the Internal Marks for each course (If Permissible)
- Conduct Regular Review Meetings for the outcome
- Revise the MKC material for further improvement, if needed

#### **Outcome of the Practice**

- Subject Knowledge is augmented and enhanced
- More Innovative Projects by Students
- Understanding and explanation ability of the Students Increased
- Performance in Technical Interviews were enhanced

#### **Contribution for PO Attainments**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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#### **IPS#4: SACT - Student Activities Credits – Target**

Students are to be prepared with multiple skills to become Industry ready as well as to face the challenges ahead. In this context, the Students are encouraged to participate in Curricular and Co-Curricular activities Department motivate and guide the Students to attend various events organized by premier Institutions/Industries and Professional Societies.

##### **Objectives**

- To enhance the number of participation in various activities
- To expand the network among the students of other Institutions
- To create involvement of all students

##### **Implementation Strategy**

- Faculty Members are assigned with group of Students
- Certain number of participation in activities including Internships and Projects are assigned to the Students
- Each participation is awarded Credit Points for activities and Calculated Semester wise
- Credit Targets for each Semester for all the Departments are finalized based on the number of Students on roll in the Department

##### **Student's Participation and Credits earned through various Activities**

##### **Outcome of the Practice**

- Participation of all Students are ensured
- Students are rewarded for their achievements
- Enhanced their skills apart from regular Curriculum Subjects
- Self Confidence of the Students improved

##### **Contribution for PO Attainments**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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## **IPS#5: CTSOC - Credit Transfer System for Online Certification**

Credit Transfer for Online Certification is implemented in the Autonomous System. The Students are encouraged to register for NPTEL/MOOC Courses. The credits earned are transferred for Curriculum Courses.

### **Objectives**

- To motivate the Students for learning from Lectures of Eminent Professors
- To improve Technical Skills in their Domain
- To enhance the Teaching –Learning Process

### **Implementation Strategy**

- Create awareness among the Students on Credit Transfer System
- Approve the Courses and its equivalent Online Courses
- Students are encouraged to register for NPTEL Courses and get the Certificates
- Credits are transferred for Curriculum Subjects based on the Committee's Suggestions

### **Outcome of the Practice**

- Increased students self-learning which promotes the habit of keeping themselves updated
- NPTEL courses on Current and Cutting Edge Technology improved the employment
- Initiative is seen in terms of more number of Certification and quality of Teaching Learning Process

### **Contribution for PO Attainments**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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## **IPS#6: AIM - Alumni Interaction & Mentoring**

Alumni plays a vital role in moulding the Students during the period of study. In this context, Alumni interaction and Student Mentoring is focused to share his/her experience and expectations by the Industry through Lectures, Interaction and Mentoring

### **Objectives**

- To create a forum to have interaction of Alumni and present Students
- To have more contribution by the Alumni in the Department growth and Students
- To mentor the Students with the support of Alumni

### **Implementation Strategy**

- Alumni Volunteers are identified and their expertise are collected
- Guidelines for interaction with the Alumni and effective utilization of their service to mould the present students in the Campus are provided
- Interaction with the present Students to share the Industry expectations
- Active Alumni and the interested Students are grouped for Mentoring
- Details of Interaction between Mentor Alumni and Mentee Student is recorded
- Alumni are appreciated for the Contribution in the Development of Teaching Learning Process in the Department and Institution

### **Outcome of the Practice**

- Increased Interactions with the Alumni and Students
- Students are highly motivated
- Awareness on Recent Technologies in Industries is enhanced
- Industry - Academia Gap is reduced
- Focus and performance on Placement/Higher Studies increased

### **Contribution for PO Attainments**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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## **IPS#7: PSM - Peer Student Mentoring**

The ability and interest of all Students in the class are not equal. However the focus of every Student is almost same. This Peer Student Mentoring will balance the requirement

### **Objectives**

- To enhance the Peer Group Learning
- To improve the Learning Skills of first generation Students
- To ensure the knowledge sharing among the Students in the Class

### **Implementation Strategy**

- Learning levels of Students are assessed considering the performance in continuous assessment and previous semester performance
- Students are interacted for analyzing the various factors influencing the performance
- Students are categorized as Slow and Advanced Learners after the careful counseling with students by the HOD and Mentors
- Advanced Learners are identified and assigned maximum of two slow learners in their respective class
- Bright students will interact with the slow learners to identify the academic difficulties and Personal Issues
- Support to improve their performance is by providing the Learning Materials
- Details of Interaction between Peer to Peer Students are recorded

### **Outcome of the Practice**

- Peer Group Learning is enhanced
- Students Performance level is improved

### **Contribution for PO Attainments:**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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## IPS#8: ST2-Student TechTalks

Communication and Presentation Skills of the Students are very much important for them to excel in their Career. The Students are encouraged to deliver talks to their Peer Groups to improve their Presentation and Technical Skills. With this prime motto, the Students are given opportunity to choose a topic and prepare for presentation.

### Objectives:

- To create an avenue for the Students to share their novel Ideas to the Peer Groups
- To facilitate the Group Discussion activities
- To improve the Presentation Skills of the Students

### Implementation Strategy

- Instructions are provided to Students for the Technical Presentation
- Students will prepare the Presentation in their chosen Domain
- Schedule is prepared by the Faculty and share to the Students
- Students deliver their talks to their peer groups to improve their Presentation and Technical skills

### Outcome of the Practice

- Presentation Skills of the students are improved
- Technical knowledge is augmented and enhanced
- More interaction between Peer Students

### Contribution for PO Attainments:

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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## **IPS#9: MIST- Muthayammal International Series of Talks**

International Speakers are invited to deliver talks in various forums for the benefit of the Students and Faculty Members. MIST provides exposure to enhance their Technical Skill in International Standards. International Series of Talks are planned in all the Departments regularly.

### **Objectives**

- To create awareness on International Cultures and Strategies in Technical Education
- To invite more International Speakers

### **Implementation Strategy**

- Experts are identified from International Universities/Industries
- Experts invited to deliver an International Expert Talk Series
- Workshops, Seminars, Expert Lectures for the benefit of the Students are conducted
- Process and Outcomes are documented

### **Outcome of the Practice**

- Interaction by Students and Faculty Members with the experts improved
- Foreign Collaboration is visible

### **Contribution for PO Attainments**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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## **IPS#10: NETS - National Experts TechTalk Series**

National Experts TechTalk Series are planned in all the departments by Eminent National Experts from both Academic and Industry. NETS provide opportunity for students to get connected with Academicians/Industry Experts.

### **Objectives**

- To invite more National Experts
- To explore the possibility of interaction beyond the talk

### **Implementation Strategy**

- Experts are identified from National Universities/Industries for talks
- Experts are invited to deliver the talk and interact Series
- Workshops, Seminars and Expert Lectures are conducted for the benefit of the Students

### **Outcome of the Practice**

- More No. of National Experts TechTalk Series are Organised
- Students got opportunity to interact with National Experts
- Possibilities of having guidance for the Students by Experts have enhanced

### **Contribution for PO Attainments**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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## IPS#11: UPER - Undergraduate Project Evaluation and Review

Every Engineering Student executes his/her ideas as projects at the end of the course to witness the level of learning during the course of study. In this context, the batch of Students Design and Implement their Ideas in the Final Year to fulfil the requirement for the award of degree. The Project execution is reviewed periodically by the team consisting of Internal Faculty Members and Experts from other reputed Institutions/Organizations.

### Objectives

- To Motivate the Students to identify the ideas
- To guide and review the Projects Execution
- To invite Experts from Reputed Institutions/Industries for Project Evaluation
- To develop the Projects with Multidisciplinary Approach

### Implementation Strategy

- Project guides are assigned based on their specialization to Project Batch Students
- Project guide support the students for finalizing the Project
- Review schedule is prepared and shared to Students by Project Coordinator
- Experts from reputed Institutions /Universities are identified and invited for Project review.
- Reviews are conducted in regular intervals to have the systematic approach to Design, Development and implementation of the Project
- Monitoring and evaluation of the Project is performed as per the given UPER format
- Documentation of the Process and Outcomes are done as a report

### Outcome of the Practice

- Students are motivated to come out with various ideas for providing solution to the day to day problems and beyond
- Students are elaborated on the Importance of Team Project
- Students are encouraged to work in the Industry as well as in the Institute with the support of Industry Experts
- Good No. of Innovative Projects are done
- Students have won Prizes in Regional/National Level Project Contests
  - Hackathon Prizes owned by Students

### Contribution for PO Attainments

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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## **IPS#12: VASD - Value Addition/Skill Development Courses**

Value Addition/ Skill Development Courses are conducted in addition to the regular Academic Learning by Technology Learning Group Leads. VASD Courses are identified on various topics demanded by the Industries as well as the students.

### **Objectives**

- To identify Courses based on Industry needs
- To invite Experts for handling the Course to add value to the Academic Courses
- To offer Skill Development Training to Students

### **Implementation Strategy**

- Group Leads Identify the Courses and invite the registration from the interested Students
- Industries are identified for collaborate to conduct the Course
- Group Lead prepares the Schedule and shared to the Registered Students
- Duration is fixed as either 30 hours or 40 hours
- Experts are involved for handling the Course
- Course Material is prepared and distributed to the Students
- Participants are encouraged to present Seminars and Hands on Training
- Quiz and Oral Exams are conducted to evaluate the performance of participants to provide Certificates
- Report on Course with the details of Registration, Schedule, Experts list and Issue of Certificates as per the Check List

### **Outcome of the Practice**

- Interest among the Students for Value Addition and Skill Development Course has increased
- Involvement of Student for MultiDisciplinary Coursed are witnessed

### **Contribution for PO Attainments**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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### IPS#13: **MuSIC** - **Muthayammal Student Idea Contest**

It is the fact that every product available in the market are conceptualized as Ideas to go through various process. In this context, the Students are motivated to have idea generation and bring more Ideas to undergo possibility and feasibility study. This practice is to encourage the Students to come out with innovative ideas for Real Time Problems. The contest provides the platform for attracting Students in a team and tries to conceptualize the Innovative Thinking and framing them as feasible projects and later as a product.

#### **Objectives**

- To motivate the Students to generate ideas from the Day-to-Day Activities
- To educate the Students to convert the Real-Time issues into realizable Projects / Products
- To train the Students on Design, Prototype making and Innovation

#### **Implementation Strategy**

- Information about Idea Contest is disseminated to all students
- Department Coordinators and overall Coordinator motivates the Students to generate the Ideas
- Ideas are collected for review
- Best Ideas are chosen with the support of Industry Experts
- Presentation session is organized
- Seed Money is given to the best selected Ideas to start the Project
- Prototype is made
- Monitoring on the progress of the Project is made

#### **Outcome of the Practice**

- Smart India Hackathon
  - First Prize with Cash Award of Rs.1,00,000 at National Level Project Contest 2018
  - Second Prize with Cash Award of INR 75,000 at National Level Project Contest 2017
- Tamilnadu Innovations Grand Challenge - First Prize with Cash Award of Rs.1,00,000
- 50+ Projects submitted to TNSCST for funding
- Skillathon by UiPath secured 4<sup>th</sup> place in the National Level
- Students selected for Internship by MNC's
- 10 Students received awards in Skill India Competitions

#### **Contribution for PO Attainments**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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## **IPS#14: I2P - Idea to Product**

Ideas are only converted into Projects. The Students are motivated to generate Ideas and taught on Product Making Skills to convert as Project

### **Objectives**

- To provide opportunity for exhibiting New Ideas
- To develop Ideas into Product
- To create scope for Patent Development

### **Implementation Strategy**

- Students are educated to convert the Real-Time issues into Projects/Products
- Students are trained on Design, Prototype making and Innovation
- Faculty Members motivate the students to generate ideas
- Faculty Members support student Team to develop a Prototype of the proposed Idea
- Technical Talks by Industry Experts are arranged
- Conduct Competitions to consolidate the work
- Students are encouraged to participate in Contest conducted by Industries/Institutions
- Regular Review Meetings are conducted

### **Outcome of the Practice**

- Students are making their own Product
- Increased the possibility of Entrepreneurs

### **Contribution for PO Attainments**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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## **IPS#15: IC- Industrial Certification**

Industrial Certification focuses on Training the Students in Cutting Edge Technologies to meet the Industry Expectations. The Industry Interface has been established and utilized for training the students in various domains.

### **Objectives**

- To Identify Industries for Training the Students
- To encourage students for Industrial Certification

### **Implementation Strategy**

- Identify the Industry who can collaborate for Industrial Certification course
- Department announces the list of Certification courses to students for registration
- Coordinator will prepare the Schedule and share to the registered Students
- Prepare the Course Material and distribute to participants
- Conduct Quiz Programs and evaluate the performance of students for Certificates
- Issue Certificates for successful candidates
- Submit the completion report

### **Outcome of the Practice**

- Industry Collaboration is increased
- More number of Students received Certificates from Industry

### **Contribution for PO Attainments**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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## **IPS#16: TSIGE - Teachers Support for Idea Generation and Execution**

Discussion among the Students and Faculty Members for sharing the solutions for day today needs to be enhanced for more Idea generation. In this context, Faculty – Student forum is created to enhance the involvement of both.

### **Objectives**

- To motivate and Support the student to generate ideas for solving real-time problems
- To analyze the feasibility of executing the idea as Projects/ Products

### **Standard Operating Procedure**

- Faculty Members interact with other Department Students
- Motivate Students to share their ideas for finding solution for Real Time Problems
- Students are encouraged to participate in the Project Contest like Hackathon's
- Faculty Members guide the students for implementation of the Projects
- Conduct interdisciplinary activities like Projects and Paper Presentation

### **Outcome of the Practice**

- 400+ MultiDisciplinary Lectures by Faculty Members
- 200+ Reliable Ideas are Shortlisted
- 64+ Minor Projects are Designed and Implemented by Students
- 14 Start-ups Registered

### **Contribution for PO Attainments**

| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
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