



MANGALORE INSTITUTE OF TECHNOLOGY & ENGINEERING

(A Unit of Rajalaxmi Education Trust[®], Mangalore)
Autonomous Institute affiliated to VTU, Belagavi, Approved by AICTE, New Delhi
Accredited by NAAC with A+ Grade & ISO 9001:2015 Certified Institution

INTERNAL QUALITY ASSURANCE CELL (IQAC)

Report for the AY 2023-24

COMPOSITION OF THE INTERNAL QUALITY ASSURANCE CELL (IQAC) AY 2023-24

The composition for the IQAC for the Academic Year 2023-24 is as follows:

Sl. No.	Name	Representation	Role
1	Dr Prashanth C M	Principal	Chairperson
2	Dr Vinayambika S Bhat	Dean Quality Assurance and HoD - Electronics & Communication Engineering	Convener
3	Mr Rajesh Chowta	President, Rajalaxmi Education Trust	Management Representative
4	Mr Shiva Prakash Rao	Local Society	External Member
5	Dr C R Rajashekar	Vice-Principal, Professor & HoD - Mechanical Engineering	Internal Members
6	Dr Anand S N	Professor & HoD - Aeronautical Engineering	
7	Dr K G Madhwaraj	Professor & HoD - MCA	
8	Dr Ravinarayana B	Associate Professor & HoD - Computer Science & Engineering	
9	Dr Jyothi S	Professor & HoD - Mathematics	
10	Mr Narendra U P	Director Placements, Training & Industrial Relations	
11	Dr Shreekanth G Naik	Assistant Professor, Dept of Management Studies	
12	Mr Sunil Kumar	Sr. Assistant Professor & HoD -AIML	

06/12/2023

Sl. No.	Name	Representation	Role
13	Mr Avinash N J	Assistant Professor, Dept of Electronics & Communication Engineering	Internal Members
14	Ms Mallika Shetty	Head of Accounts	
15	Mr Mohammed Azzan Patni	Director, PACE Wisdom Solutions Pvt. Ltd. Mangaluru. [2011 Graduate-Alumni]	Alumni Member
16	Prabal Raj	3 rd year, Dept. of Electronics & Communication Engineering [USN:4MT21EC062]	Student Member



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PROCEEDINGS OF IQAC MEETING HELD ON 20/01/2024

A meeting of the Internal Quality Assurance Cell (IQAC) was held on 20.01.2024 at 2.30 pm in Conference Hall - 2.

The agenda for the meeting is given below:

1. Review of the outcomes observed for the previous meeting agenda.
2. Review the preparation for the NBA expert team for the verification of the compliance report of the Electronics & Communication Engineering program.
3. Preparation and submission of the Annual Quality Assurance Report (AQAR) AY 2022-23 as per the NAAC guidelines.
4. Review of structured feedback action plan and suggestions for shortcomings.
5. Formation of 5 members external committee comprising Academicians and senior Industry personnel to carry out the Academic audit.
6. Preparedness of contents for the 2nd year syllabus under the Autonomous scheme.
7. Successful completion of FDP - Series I on “Critical Thinking, Programming Techniques and Problem-Solving Strategies”.
8. Any other matter with the permission of the chair.

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Dr Vinayambika S Bhat, Dean of Quality Assurance and Convener - IQAC, welcomed the members of IQAC constituted for the Academic Years 2023-24 and 2024-25.

The following members were present during the meeting:

Name	Representation		
Dr Prashanth C M	Principal	Chairperson	
Mr Rajesh Chowta	President, Rajalaxmi Education Trust	Management Representative	
Mr Shiva Prakash Rao	Local Society	External Member	
Dr C R Rajashekar	Vice-Principal Professor & HoD- Mechanical	Internal Members	
Dr Anand S N	Professor & HoD - Aeronautical Engineering		
Dr K G Madhwaraj	Professor & HoD - MCA		
Dr Ravinarayana B	Associate Professor & HoD - Computer Science & Engineering		
Dr Jyothi S	Professor & HoD - Mathematics		
Mr Sunil Kumar	Sr. Assistant Professor & HoD - AIML		
Dr Shreekanth G Naik	Assistant Professor, Dept of Management Studies		
Mr Avinash N J	Assistant Professor, Dept. of Electronics & Communication Engineering		
Mr Mohammed Patni Azzan	Director, PACE Wisdom Solutions Pvt. Ltd. Mangaluru.		Alumni Member
Mr Prabhal Raj	3 rd year, Dept. of Electronics & Communication Engineering		Student Member
Dr Vinayambika S Bhat	Dean Quality Assurance, Professor & HoD - Electronics & Communication Engineering	Convener	



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Following are the outcomes of the meeting:

1. Review of the outcomes observed for the previous meeting agenda

Swayam - NPTEL Certification Course

- Convener - IQAC presented Department-wise statistics of certification by the faculty members, lab instructors, and students for the AY 2022-23.
- By noting the statistics, Mr Rajesh Chowta expressed his unhappiness, since majority of faculties across all the departments have not completed enough certifications.
- Convener - IQAC briefed about the importance of taking up the certification relevant to the program or research-based courses. Dr Jyothi also suggested that certification in OBE-related topics can also be taken up, which adds value during the accreditation process.
- Dr Vinayambika S Bhat & Dr Madhwaraj briefed that by completing a minimum of 8- week / 12-week course a faculty can get the FDP certification. Further, Dr Vinayambika S Bhat presented few certifications from NITTTR, AICTE etc. that are also available on the SWAYAM platform apart from NPTEL which helps to acquire domain knowledge.
- Further, members decided to make an IQAC policy stating that faculty members & laboratory staff must complete at least one NPTEL certification (8 / 12 Weeks) in an Academic Year (between August – July) and members of IQAC requested Management representative to provide Special Casual Leave for faculty and staff members to take-up the exam along with the existing financial support extended for the staff members, for which Mr Rajesh Chowta responded positively.

Journal / Conference Publication

- Convener - IQAC briefed about the statistics of Journal / Conference publication by the faculty and the students across all departments for the AY 2022-23. Mr Rajesh Chowta and Dr Rajashekar stressed the need for improvement in the publications from all the Departments including Management Studies.
- Mr Rajesh Chowta briefed about the importance of faculties having quality publication which helps for NIRF and other accreditation processes, also for getting research funds.

- Mr Azzan expressed his view of having a well-equipped research laboratory in every Department to get quality research outcomes. Mr Shiva Prakash Rao expressed that the Institute should have a large mission to improve the publication in terms of quality.
- Mr Sunil Kumar suggested having a research slot in the timetable to achieve the goal of publication, i.e. to improve the research outcome in the near future.
- Mr Rajesh Chowta suggested of having classes between 9.00am -12noon every Saturday, and utilize the post lunch session between 1.00pm to 4.00pm for department documentation work and updating about research progress in the Department.
- In this regard, members of IQAC decided to dedicate every 1st & 3rd Saturday afternoon session for department documentation work with regards to accreditation proces and the 2nd & 4th Saturday for discussions & updates about the progress of research work in the respective Departments. In this regard, a monthly report needs to be submitted by Head of the Departments to Convener – IQAC and this will be implemented from 1st of February 2024. Meantime every Departments.should make sure students are utilizing this time slot for participating in various club activities and their project works.

Activities through MOUs

- Dr Vinayambika S Bhat presented the importance about Departments organizing activities through the MOUs they entered with. In this regard, all the members of IQAC suggested to advice the Departments to conduct at least two activities in a semester through an MOU. In case if any of the MOUs not active also decided to advice the Department to renew the same.
- Members of the IQAC expressed the importance of every technical talk having hands-on session. In this regard, it has been decided to advice every Department to strictly conduct technical sessions / talk / workshop with hands-on sessions only. Duration of such events must be restricted to maximum of three days and while designing the activity Departments should make sure the arranged program will be mapped to at least one Program Outcome. In this regard every Department program coordinator/s must take an approval from IQAC by sending the soft copy of the program brochure with minimum of 15 days prior to the scheduled activity date/s.
- Also, all the members of IQAC given responsibility to convener IQAC to form a three members technical committee for the approval of such activities.



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Professional body membership

- Members decided that apart from ISTE, all faculty members must have at least one Professional body membership specific to their domain.
- For example:
 - Dept of ECE and Mechatronics: **IEEE Professional Body membership.**
 - Dept Mechanical Engineering: **Indian Institute of Production Engineering (IIPE)**
 - Dept Aeronautical Engineering: **Aeronautical Society of India (ASI).**
 - Computer Science & Engineering and Allied branches: **Computer Society of India (CSI)** etc.
- Mr Rajesh Chowta expressed his view on this, and extended his support to those faculty who finding it difficult to pay the membership fee in one installment. For all those faculty finding difficult management will make the payments and the same will be recovered in 3-4 equal installments from their salary. The list of such faculties needs to be submitted by the respective Head of the Department to Convener - IQAC.
- Since the membership is on the basis of calendar year all the IQAC members decided to instruct all department faculties to complete this before 29th February 2024 and this should be continued for every year.

Awareness session of Outcome Based Education (OBE)

- Convener - IQAC presented the importance about all faculty member and student having strong knowledge of OBE. Members discussed regarding this and suggested to arrange regular informative workshop about OBE to educate all the faculty members. Also, suggested all such workshop must be conducted in a group of not more than 25 members at a time. Mr Rajesh Chowta extended the financial support to arrange such activity. Convener of IQAC requested for the support of all the members in identifying suitable resource person / organization for such workshops.

2. Review the preparation for the NBA expert team for the verification of the compliance report of the Electronics & Communication Engineering Program.

- Dr Vinayambika S Bhat presented the preparation made for the NBA expert team visit to verify the Compliance Report. All the members expressed their satisfaction in this regard, Also, members suggested that from the upcoming AY onwards Institute should make sure at least three Departments going for accreditation at a time, by doing so Institute can reduce documentation work.

3. Presentation and submission of the Annual Quality Assurance Report (AQAR) AY 2022-23 as per the NAAC guidelines.

- Convener – IQAC presented the preparedness & the shortcomings in AQAR preparation to the submission of NAAC. Also, expressed the satisfaction regarding the work in progress in this regard and brought to the notice of all members about submission of AQAR will be made as per the schedule.

4. Review the structured feedback action plan and suggestions for shortcomings.

- Suggestion / Action Proposed was discussed, all members expressed their satisfaction in this regard.

5. Formation of 5 members external committee comprising Academicians and Senior Industry personnel to carry out Academic audits.

- Keeping institution vision “To attain perfection in providing Globally Competitive Quality Education” in mind all the members welcomed this agenda to continuously improve the teaching-learning and student support in the Institution. Members actively involved in discussion about the formation of the committee and finally decided to have two highly qualified and knowledgeable external academicians along with one industry expert provided he/she having work experience in academic institution along with Dean Academics / Associate Dean Academics as an Internal member in the committee.
- Members suggested to have this audit at the end of even semester and also suggested to reduce the two internal audits to one and decided to have the same at the end of odd semester. Convener - IQAC requested the support of all the members in identifying the suitable external members.

6. Preparedness of contents for the 2nd year syllabus under the Autonomous scheme.

- Convener - IQAC presented the schemes that are prepared across all the Departments and also briefed about the progress of syllabus preparation. All the members expressed the urgency in completion of syllabus designing and set April 30th 2024 as the last date to submit the detailed draft syllabus. This will help in corrections of shortcomings and also provide ample time to arrange any FDP if required. All members handed these responsibilities to Principal to communicate the same to all the departments.

7. Successful completion of FDP- Series 1 on “Critical Thinking Programming Techniques and Problem-Solving Strategies”.

- After going through the feedback submitted by the participating faculties, all the members of IQAC appreciated this initiative and suggested to continue the same wherever and whenever it required.

8. Any other matter with the permission of the chair.

Grievance report on Continuous Internal Evaluation (CIE) from the students:

- Convener – IQAC raised the above issue and briefed the members the system currently followed in the Institution to address the grievance on CIE reported by the students. During this, student member Mr Prabal Raj suggested to discuss the scheme of evaluation after distributing the evaluated answer booklets in the class room. This will provide highest level of clarify about evaluation to all the students. Members accepted the suggestions and given the responsibility to Principal to communicate this to all the Department across the Institution and to be followed strictly.
- Further, Convener IQAC presented newly designed Grievance submission format, which will be submitted to the respective Head of the Department by the student if any student grievance not resolved / solved by the respective course in-charge. Also, decided to educate students to submit such grievances within 24 hours after the distribution of answer booklets. Members suggested few corrections in the format and handed the responsibility to convener – IQAC to finalize and distribute the formats to all the Depts.



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Student Project Publication

- To ignite research in students mind all Departments across the Institution guiding students to publish outcome of their project work in Conferences / Journals. Result of this, students of all Departments across the Institutions are publishing their project outcomes in Conference / Journals during the last two years. All the members of IQAC appreciated these efforts. Further, as a policy matter it has been decided to guide the students to complete their project works during 7th semester itself, so that students are getting ample time to improve the article about their project outcomes and can publish in quality Journals too. This is very much useful to the students in campus recruitment's as well when they are applying for their higher education.



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Policies and Recommendations are made during the year 2023-24

IQAC POLICIES

1. Every Faculty member & laboratory staff of the institution must complete at least one NPTEL certification (8 / 12 Weeks) in an Academic Year (between August - July, applicable from 23-24 academic year).
2. Every faculty member must have at least one Professional body membership specific to their domain / specialization apart from ISTE life membership.
3. All student project outcomes should be published in Journal / Conference Proceedings / Patent Applications.
4. Decided to introduce New Grievance Report format for students with regard to Continuous Internal Evaluation (CIE), which will be submitted to the respective Head of the Department by the student if any grievance is not resolved / solved by the respective course in-charge with respect to CIE.

RECOMMENDATIONS

1. To have better documentation across all the departments and to strengthen Research, it has been recommended to dedicate every 1st & 3rd Saturday afternoon session (1pm to 4pm) for department documentation work with regards to accreditation processes and 2nd & 4th Saturday for discussions & updates about the progress of research work / research proposal submission in respective Departments, and recommended to have classes between 9am to 12noon and all departments must advice their students to utilize the post lunch session for various club activities. This will be implemented across all Engg. departments from the beginning of the upcoming Even semester, in case of MBA & MCA this will be from the beginning of Odd semester for 23-24. With regard to research progress all HOD's must send a progress report to convener IQAC every month.



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2. It is recommended to conduct technical sessions / talk / workshop with hands-on sessions only across all the departments using association funds, Duration of such events must be restricted to maximum of three days and while designing the activity Departments should make sure the arranged program will be mapped to at least one Program Outcome. In this regard every program coordinator/s must take an approval from IQAC by sending the soft copy of the program brochure with minimum of 15 days prior to the scheduled activity date/s.
3. All departments hereby advised to conduct at least two activities in a semester through an MOU at department Level, so that departments should make sure the MOU's are active in nature.
4. All Departments advised to complete the syllabus design of the autonomous scheme for 2nd year by 30th April 2024.
5. It has been recommended to arrange regular informative workshops about OBE to educate all the faculty members and also to conduct FDP on critical thinking, programming techniques and problem solving. Convener - IQAC will do the needful in this regard.
6. To further strengthen the Teaching - Learning it is recommended to conduct External Audit apart from the existing Internal Audit by forming a committee comprising of two highly qualified and knowledgeable external academicians along with one industry expert provided he/she having work experience in academic institution along with Dean Academics / Associate Dean Academics as an Internal member in the committee and decided to conduct this audit at the end of Even semester, meantime it is recommended to have internal audit and the same will be conducted at the end of Odd semester.

Every department has motivated the students, faculty and staff to take up the online certification courses to enhance their knowledge & skills.

- The summary of the same is depicted in the tabular column below:

<u>Department Statistics on IOAC Policies for the Academic Year 2023-24</u>																	
Sl.No.	Particulars		Name of the Department														
			AE	CIVIL	ECE	CSE	AIML	CS(IOT)	CS(AIML)	ISE	ME	MT	MBA	MCA	Physics	Chemistry	Mathematics
1	Swayam - NPTEL Certifications	No. of Student	8	0	31	21	2	7	3	30	2	1	31	56	1	-	NA
		No. of Faculty	1	3	21	3	1	0	0	2	6	5	4	4	-	2	1
		No. of Technical Staff	2	0	3	0	0	0	0	1	3	-	-	-	-	-	NA
2	Journal Publications	No. of Student	0	14	37	48	16	0	0	14	8	12	-	-	-	-	NA
		No. of Faculty	2	9	2	16	4	0	0	14	9	16	2	-	7	5	7
3	Conference Proceeding /Book/ Book Chapter Publications	No. of Student	15	0	0	0	1	0	0	0	0	-	-	-	-	-	NA
		No. of Faculty	0	3	4	8	0	4	0	4	1	-	-	3	-	-	-
4	Professional Body Membership	No. of Student	0	14	235	201	69	64	63	67	40	30	144	-	-	-	NA
		No. of Faculty	6	9	22	20	4	5	0	6	12	5	11	8	6	-	10
5	Number of Workshop/ hands-on sessions organised through Department Association / Student Chapters / Dept MOUs		2	1	11	10	0	2	0	13	4	14	2	6	-	-	-

Composition of Internal Quality Assurance Cell (IQAC) - External Audit Committee

The constitution of the IQAC external audit peer team is as follows:

Sl. No.	Name	Designation & Affiliation	Role
1	Dr. L. D. Dhinesh Babu	Professor and Associate Dean, School of Computer Science Engineering and Information Systems Vellore Institute of Technology, Vellore	Members
2	Dr. Shivashankar R. Srivatsa	Associate Professor Department of Mechanical Engineering B.M.S College of Engineering, Bengaluru	
3	Dr. Shylashree N	Associate Professor Department of Electronics & Communication Engineering R.V.College of Engineering, Bengaluru	

The IQAC external audit peer team will be responsible, to audit the academic activities of the college at the end of the academic year.



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Date: 22-07-2024

Recomposition of Internal Quality Assurance Cell (IQAC) - External Audit Committee

The re-constitution of the IQAC external audit peer team is as follows:

Sl. No.	Name	Designation & Affiliation	Role
1	Dr. Chandrasekaran K	Professor Department of Computer Science & Engineering, NITK. Surathkal, Mangalore	Members
2	Dr. L. D. Dhinesh Babu	Professor and Associate Dean School of Computer Science Engineering and Information Systems Vellore Institute of Technology, Vellore	
3	Dr. Shivashankar R. Srivatsa	Associate Professor Department of Mechanical Engineering, B.M.S College of Engineering, Bengaluru	
4	Dr. Shylashree N	Associate Professor Department of Electronics & Communication Engineering R.V.College of Engineering, Bengaluru	

The IQAC external audit peer team will be responsible, to audit the academic activities of the college at the end of the academic year.

ACTIVITIES ORGANIZED BY IQAC DURING AY 2023-24

A good number of activities were organized by the IQAC for the AY 2023-24. The details are as follows:

Activity No.	Particulars	Date
1	Workshop on 'Effective pedagogy for design thinking course'	10/08/2023
2	Faculty Development Program (FDP) On Critical Thinking and Problem-Solving Strategies	23/12/2023 30/12/2023 06/01/2024
3	Faculty Development Program (FDP) on "MATLAB Mastery: Crafting Innovative Workflows for Physical Modeling and Analysis	05 th to 07 th Feb 2024
4	Faculty Development Program (FDP) on "Future Tech Fusion: Unleashing Innovation with MATLAB and Simulink for Communication, AI, IoT, and Electric Vehicles Modelling	08 th to 10 th February 2024
5	A Short-Term Course on Innovations & Inventions on Autonomous Vehicle	4 th to 6 th March 2024
6	A Workshop on Electrification of Transportation Sector: Opportunities and Challenges	4 th to 5 th July 2024

1. Workshop on ‘Effective pedagogy for design thinking course’

Internal Quality Assurance Cell (IQAC) - MITE in collaboration with ISTE organized the one-day workshop on effective pedagogy for design thinking course on August 10, 2023. The goal is to improve the teaching approach and offer useful course material to the design thinking discipline. Dr. Ashok Rao, a former head of the Network Project at the DESE at the IISc in Bangalore gave a quick overview of the various design thinking ideas in relation to academic curriculum. He also provided information on the many design thinking stages that might be applied to academics. He provided us with a roadmap for creating effective approaches that will significantly alter how students, professors, and management think. Additionally, he discussed several Design Thinking issues and several Action Plans to consider when developing new academic curriculum. 39 faculty members were presented and gained knowledge in the workshop.



The snapshot of the Workshop on ‘Effective pedagogy for design thinking course’

2. Faculty Development Program (FDP) On Critical Thinking And Problem-Solving Strategies

Faculty Development Program (FDP) on "Critical Thinking and Problem- Solving Strategies" aimed to equip our young faculty members with comprehensive tools and methodologies essential for enhancing teaching methodologies and problem-solving skills. The Expert Resource Faculty for the FDP was Mr. Girish Aithal, Co-founder and Learning Solutions Head at 4Edge IT Solutions.

The first session commenced with exploring critical thinking fundamentals, emphasizing strategies to foster student interest in reading. The second session involved practical application through Algorithm Design for real-time scenarios, where participants formulated solutions for stated problems. The third session continued with Algorithm Design, followed by an introduction to Code Optimization, focusing on reducing code length without compromising efficiency. Participants engaged in both group and individual tasks, emphasizing Software Requirements Specification (SRS), module identification, functional requirements, and programming assignments. The sessions collectively aimed to enhance critical thinking, problem-solving, and programming skills.



The snapshot of the FDP on On Critical Thinking And Problem-Solving Strategies

3. Faculty Development Program (FDP) on "MATLAB Mastery: Crafting Innovative Workflows for Physical Modeling and Analysis."

Faculty Development Program (FDP) on "MATLAB Mastery: Crafting Innovative Workflows for Physical Modeling and Analysis" from 5th February, 2024 to 7th February, 2024 in association with MathWorks & CorEL Technologies, Bangalore.

MathWorks is the developer of mathematical computing software for Engineers and Scientists. MathWorks is leading worldwide supplier of technical computing software. The business activities are characterized by quality, innovation, and timeliness; competitive awareness; ethical business practices; and outstanding service to the customers. MathWorks actively support local and professional communities through initiatives that advance STEM education, foster staff volunteerism, build environmental sustainability, and aid global relief efforts. Matlab Mastery involves the creation of new convenient ways that deploy cutting-edge simulation techniques, data analysis and visualization, optimization and integration with other tools. By developing efficient and collaborative workflows, engineers and scientists can significantly enhance their productivity and the accuracy of their physical modeling and analysis tasks. Despite the ever-changing technological landscape, Matlab is still an invaluable tool for driving innovation in engineering as well as scientific pursuits towards excellence. 17 faculties participated in the workshop & benefited by the trainer Mr. Rakshith B S is the Senior Application Engineer for Mathworks products at CoreEL Technologies, Bengaluru. The outcome of the FDP is to make participants familiar with the theory and practical aspects of Image Processing, physical modeling, Robotic System Modelling..



The snapshot of (FDP) on "MATLAB Mastery: Crafting Innovative Workflows for Physical Modeling and Analysis".

4. FDP on “Future Tech Fusion: Unleashing Innovation with MATLAB and Simulink for Communication, AI, IoT, and Electric Vehicles Modelling.

Faculty Development Program (FDP) on “Future Tech Fusion: Unleashing Innovation with MATLAB and Simulink for Communication, AI, IoT, and Electric Vehicles Modelling” from 8th to 10th February 2024 in association with MathWorks & CoreEL Technologies, Bangalore.

The technological fusion of MATLAB with Simulink has been an innovative driver and has allowed for quick progress in areas such as communication, AI, IoT, and electric vehicles. These devices provide engineers and scientists with a complete set of modelling, simulation, and analysis solutions to address intricate problems faced by them during the development of the next generation.

.CoreEL Technologies is driven by innovation and a multi-disciplinary approach towards technology. CoreEL offer innovative solutions ranging from Intellectual Property (IP) cores, Design and Development, System Design and Prototype Development, Next-Gen Digital products, Integrated solutions, Low Volume Manufacturing, System Upgrades, Obsolescence management, EDA tools, COTS products, to Semiconductor solutions, and Technology Training. were 17 faculties participated in the workshop & benefited by the trainer Mr. Rakshith B S is the Senior Application and Mr. Avinash Vulasa is the Application Engineer for MathWorks products at CoreEL Technologies, Bengaluru. The outcome of the FDP is to make participants familiar with the theory and practical aspects of Communication, AI, IoT, and Electric Vehicles Modelling.



The snapshot of (FDP) on Future Tech Fusion: Unleashing Innovation with MATLAB and Simulink for Communication, AI, IoT, and Electric Vehicles Modelling

5. A Short-Term Course on Innovations & Inventions on Autonomous Vehicle

Internal Quality Assurance Cell (IQAC) - MITE in association with Binghamton University, New York, USA organized a Short-Term Course on Innovations & Inventions on Autonomous Vehicle from 4th to 6th March 2024. Autonomous vehicles have rapidly gained popularity, showcasing the seamless integration of various artificial intelligence components through a systems approach to ensure their efficient operation. These vehicles stand as prime examples of cutting-edge AI applications, adeptly sensing their surroundings and navigating safely with minimal human intervention. The widespread adoption of autonomous vehicles across diverse transportation sectors underscores their increasing significance. This concise course provides an insight into autonomous vehicle technologies, detailing the array of smart sensors employed (including LIDAR, RADAR, Ultrasonic, Monocular, Stereo, and Infrared Cameras), and delving into the fusion techniques pivotal for autonomous driving. Participants were engaged in the hands-on computer programming tutorials focused on detecting and tracking road users and objects, alongside lane detection and identification of lane lines, within a dedicated computer lab setting. Were 9 faculties from various department and 78 students actively participated and gained the knowledge in the short term course & Participants were engaged in hands-on within a dedicated computer lab setting by Dr. Yong Wang, PhD Associate Professor and Associate Department Chair, Department of Systems Science and Industrial Engineering, Thomas J. Watson College of Engineering and Applied Science, Binghamton University, New York, USA.



The snapshot of Dr. Wang addressing on AI in Autonomous Vehicles



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6. A Workshop on Electrification of Transportation Sector: Opportunities and Challenges.

A workshop on Electrification of Transportation Sector: Opportunities and Challenges. The workshop will delve into the exciting world of electric vehicles (EVs) and explore the opportunities and challenges associated with electrifying the transportation sector. Through a mix of presentations, discussions, and activities, participants will gain a comprehensive understanding of the critical transition by Hands-on session and discussion. An overview on the vehicle dynamics will be provided along with sufficient algorithms and equations describing the motion of vehicles. covers Battery Management Systems (BMS), including their role, integration with the vehicle, and how they leverage the Internet of Things (IoT) for functionality.

Ms. Divya D. Shetty offered invaluable insights into the profound societal shifts driven by vehicle electrification, captivating the audience and stimulating a lively discussion.

The workshop Resource person Dr. Sowmya R. handled the session on Intelligent Battery Management System and Electric Vehicle Grid Integration based on IoT. The objectives of the workshop were to generate awareness among the participants about the various aspects of vehicle dynamics, components present in an EV model, their subsystems and their impact on the global market. The outcome of the workshop for students is to gain a solid understanding of electric vehicle components, battery technology, charging infrastructure, and power electronics. This also provides exposure to real-world challenges in the EV sector will stimulate critical thinking and problem-solving abilities.

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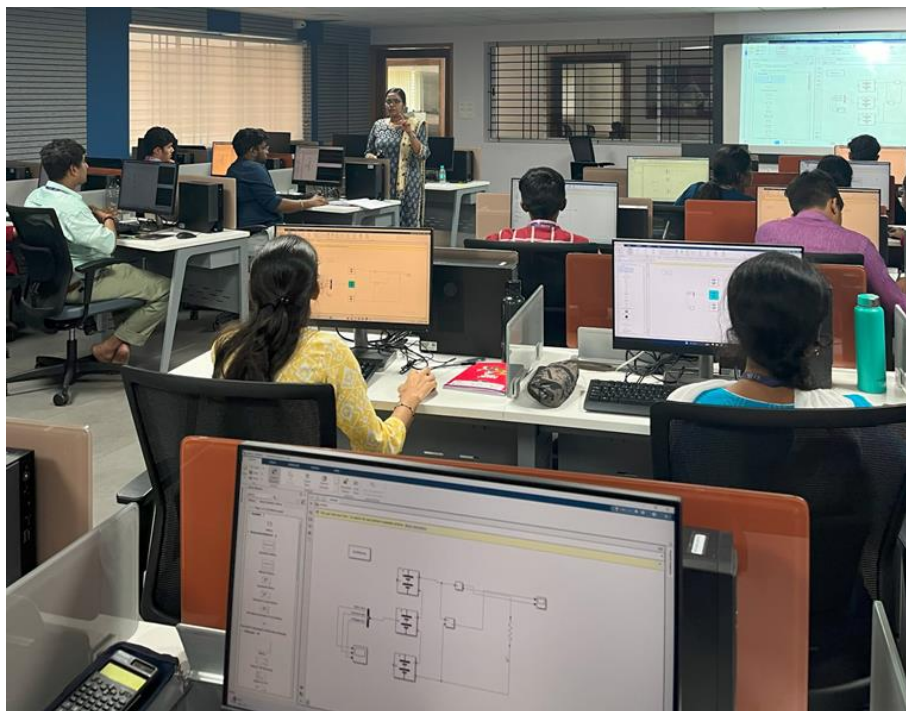
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The snapshot of Ms. Divya Shetty addressing on Battery Management Systems (BMS)



Hands-on session on “Intelligent Battery Management System and Electric Vehicle Grid Integration based on IoT” by Dr. Sowmya R