

DEPARTMENT OF MECHANICAL ENGINEERING **MECHANICAL ENGINEERING ASSOCIATION**







EDITORS: Dr. C. Velmurugan Dr. B. N. Sreeharan

MAY 2022

ASSOCIATE EDITORS: Mr. B. Praveen Mr. S. V. Nithesh Mr. K. T. Imayan



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ASSOCIATE EDITOR'S PORTFOLIO

Engineering nonlinearity:

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NONLINEAR DYNAMICS

To build in a way that is cost-efficient and less resource-intensive structures, the operating envelopes are in the way of expanding by resulting in larger deflections and geometric nonlinearities. These types of developments result in the need for an analysis technique that must take care of nonlinearity. Now they are developing the dynamic design tools which not only allow the structures that are to be designed to operate in the nonlinear region but also potentially transform their operating envelope. They even allow the design of structures that actively exploit

Mr. Nithesh S V 20BME080 2nd Mech.- B

dynamic nonlinearity, hence giving a major step change in their performance.

Numerical continuation for industry:

The steady-state solutions are found using time-integration methods. Anyway, stable, and unstable solutions can also be found using a dynamic system approach and

numerical continuations. This helps in generating "maps of solution" to provide an exceptionally good insight into the overall dynamic behaviour of the system to influence the design process. This has been employed in the military aircraft control community to understand the effectiveness of the controllers and has also been used for industrial purposes. They also cover the study of "Shimmy dynamics of aircraft landing gears."

Human-structure interaction:

Humans considering research in this field should concentrate on the dynamic behaviour of slender structures such as longspan bridges and cables, including wind- and humaninduced vibrations. This includes dynamic interactions between:

- different structural components.
- fluid-structure interactions; and
- human-structure interactions.







PROGRAMMES ORGANIZED

The Department, in association with the Institution of Engineers, Coimbatore Chapter, organized a hands-on training in Industrial Robotics on 22-04-2022. Dr. S. Balasubramanian, Associate Professor, and Dr. M. A. Vinayagamoorthi, Assistant Professor—II, oversaw the training. Mr. N. Sriram from M/s. ROBORAM Technologies, Nagercoil, was the resource person.



A guest lecture on "Intelligent Welding Systems" was organized by the department on 13-04-2022. Dr. Devkumar, BHEL, Trichy, was the resource person. Dr. S. Balasubramanian, Associate Professor, and Dr. M. A. Vinayagamoorthi, Assistant Professor, were the coordinators of the guest lecture.





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DEPARTMENTAL ACTIVITIES

In association with the Mechanical Engineering Association, the department conducted a couple of competitions titled "CAD-MAN" and "BRAIN RAIN" was conducted on 20-04-2022, 21-04-2022, and 22-04-2022. The competition was coordinated by Dr. V. R. Muruganantham, Associate Professor, and Dr. M. A. Vinayagamoorthi, Assistant Professor – II.









A value-added programme titled "Industrial Robotics" was conducted in the department from 14-04-2022 to 29-04-2022 for about 31 hours for 34 students in II and III years. **Mr. N. Sriram** from ROBORAM Technologies was the resource person. **Dr. S. Balasubramanian,** Associate Professor, was the coordinator of the quest lecture.

FACULTY AS RESOURCE PERSONS

Dr. V. Muthukumaran, Professor, delivered a Guest Lecture on "Mass Reading" for the Nirmala Women's College, Coimbatore, students on 20-04-2022.



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Dr. S. Bhaskar, Associate Professor, delivered a guest lecture on "Impact of BSQ" for the PG students of KCT in the KCT PG Forum on 28-04-2022.

Dr. B. N. Sreeharan, Assistant Professor-II, was the resource person in a Faculty Development Programme and trained faculty members in Facilitating Microsoft EXCEL, held by Pioneer College of Arts and Science, Coimbatore on 04-08-2022.





At the Board of Studies Meeting conducted at MCET, Pollachi on April 23, 2022, **Dr. R. Manivel**, Professor, acted as Anna University Nominee in the Board of Studies Meeting.

MANUSCRIPT SUBMISSION

The following faculty members submitted their respective prepared manuscripts to the Scopus/SCI indexed journals.

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Dr. V. Muthukumaran, Professor	1	Scopus
Dr. V. Manivelmuralidaran, Assistant Professor – II	1	SCI
Dr. S. Sivakumar, Assistant	2+1	Scopus + SCI
Dr. M. A. Vinayagamoorthi	2	Scopus



Dr. K. Krishnamoorthi, Assistant Professor – II; **Dr. A. P. Arun**, Assistant Professor – II; and **Dr. V. Manivelmuralidaran**, Assistant Professor – II, published their paper entitled "Effect of B4C particle reinforcement on the tensile properties of Al7075/B4C composites" in Materials Today Proceedings.





Dr. M. A. Vinayagamoorthi, Assistant Professor – II, published his paper entitled "Mechanical characterization of alkaline treated Ananus Comosus and Musa Sepientum fibers reinforced epoxy hybrid composites" in Material Todays Proceedings.

PAPERS REVIEWED



Dr. C. Velmurugan, Professor and HoD/ME, reviewed a manuscript titled "Chip profile studies on SiC reinforced mono and SiC and graphite reinforced hybrid ZA43 MMCs" for the International Journal of Advances in Materials and Processing Technologies.

DEPARTMENTAL ACTIVITIES

Dr. N. Sangeetha, Sr. Associate Professor, reviewed a manuscript titled "Manuscript ID AEAT-02-2022-0035 for the Aircraft Engineering and Aerospace Technology" for the Aircraft Engineering and Aerospace Technology Journal.



COLLABORATIVE ACTIVITIES

Dr. N. Sangeetha, Sr. Associate Professor, is serving on the Government College of Technology, Coimbatore's Program Advisory Committee to improve the quality of the Post Graduate program.





Dr. K. M. Senthil Kumar, Associate Professor, was invited to be a Member of the Si'Tarc Research Advisory Board Scientific and Industrial Testing and Research Centre (Si'Tarc), Coimbatore for up-gradation, development, and R & D activities of Si'Tarc. He also nominated as Anna University Nominee in Board of Studies of M. Kumarasamy College of Engineering (Autonomous) and discussed about Syllabi for B.E. Mechanical Engineering (Regulation

System based on domain knowledge" for the Textile Research Journal.

2018), Syllabi for M.E., Manufacturing Engineering (Regulation 2019), Syllabi for New Electives of B.E. Mechanical Engineering (Regulation 2018).

AWARDS RECEIVED

Following faculty members were awarded Employee Service Recognition by KCT on 25-03-2022 for the Milestone of Decennial (10 Years of Service).

Dr. P. R. Ayyappan, AP (SRG) Mr. S. Sivakumar, AP – II Dr. A. P. Arun, AP – II Dr. S. Balaji, AP - I Mr. S. Prabhu, AP - I







DEPARTMENTAL ACTIVITIES

CONSULTANCY



Dr. N. Sangeetha, Sr. Associate Professor, provided consultancy on "FE Analysis of Paddy Soaking Tank" for M/s. SKF Boilers and Driers Pvt Ltd, Belvai, Moodbidri, Mangalore using KCIRI - Ansys software for Rs. 35,000 + GST.

Mr. P. D. Devan, Assistant Professor – I, provided consultancy on Modal Analysis of Composites using a Vibration Analyser for NIT, Calicut for Rs. 5,310/-.



PROGRAMMES ATTENDED / COURSES COMPLETED



Mr. B. Jeeva, Assistant Professor – I, participated in a webinar on "NDLI Awareness and IEEE Xplore Digital Library Online Training" on 07-04-2022, organized by KCT, India. He also participated in an Online lecture meeting on "Advanced Battery Technology: Beyond Li-Ion"" from 11-04-2022 to 15-04-2022, organized by SAE INDIA Southern Section, India.

Mr. K. Manikanda Prasath, Assistant Professor - I completed an online course on "Certified Supply Chain Professional" on 13-04-2021 organized by V Skills, India.





Dr. S. Thirumurugaveerakumar, Associate Professor, participated in a One-Day Workshop on "Product Development Life Cycle/System Engineering for Start-ups in Industrial Automation" on 29-04-2022 organized by KCT, Department of Electronics & Instrumentation Engineering, Kumaraguru College of Technology, Coimbatore.

Dr. R. Manivel, Professor, participated in a workshop on "Glue Grant" on 29-04-2022 organized by Bharathiar University, Coimbatore.





Dr. M. Balaji, Associate Professor, participated in a Doctoral Committee Meeting on 20-04-2022 organized by SNS College of Engineering, Coimbatore.

Dr. B. N. Sreeharan, Assistant Professor-II, participated in a Workshop on "Beginning DAX Functions" on 06-04-2022 organized by Pragmati Works, Finland. He also participated in a webinar on "Sustainable Manufacturing" on 04-05-2022 organized by Nadar Saraswathi College of Engineering and Technology, Theni. Further, he completed an online course on "Data Visualization with Power BI" from 05-04-2022 to 15-04-2022, organized by Great Learning, India.



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SMART FARM GRANT CHALLENGE 2022 I START-UP CONTEST

Registration Ends: 8th June 2022 (Check Contest Website)

Reward: Fund Upto 10 Lakh INR/Year for 2 Years

Stages of the Contest: Blind Review: An expert panel (hereinafter referred to as Jury) from MeitY, STPI, DCM Shriram Sugar Mills, Academia, Industry, etc. will evaluate the proposals and will shortlist 25 proposals.



First International Conference on Advancements in Management, Entrepreneurship, Sciences and Engineering ICAMESE-2022, I Business Institute, Greater Noida, Uttar Pradesh and Global Conference Hub, Coimbatore, Tamil Nādu, International Conference, Greater Noida, Uttar Pradesh, 28th - 29th May 2022

LAST DATES FOR REGISTRATION

Paper submission last Date: 24/05/2022

REGISTRATION FEES : Conference only / Poster Presentation - INR 1499 (Three to Five Authors)

Student - Conference+ publication in CROSSREF DOI , Academia & Google scholar indexed journal - INR 2799

Faculty - Conference+ publication in CROSSREF DOI , Academia & Google scholar indexed journal - INR 2999

DESCRIPTION

Greetings from I Business Institute, Greater Noida, Uttar Pradesh, India & Global Conference Hub, Coimbatore, Tamil Nādu, India

Date: 28/05/2022 & 29/05/2022

Time: 9.00 am to 5.00 pm

Mode of Conduction: Google Meet

Paper submission last date: 24/05/2022

Open to All: Students (UG/PG), Research Scholars, Professors & Educators. For Abstract & Full Paper Registration: <u>tinyurl.com/ICAMESE2022</u>



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Register:

https://docs.google.com/forms/d/e/1FAIpQLSdFbypWRQfP591KTgLrf6Cfhwqr94D_w4qTYX AyGZGksCCl0A/viewform

CERTIFICATIONS

The following students got certified by M/s. Dassault Systems as Certified SolidWorks Associate (CSWA) – Additive Manufacturing through Centre of Exemplary Learning (COEL). COEL trained the students in SolidWorks to get the certifications.

S. No.	Roll Number	Name		
1	20BME105	Mr. M. SHAKTHIESWARAN		
2	20BME128	Mr. K. VISVA		
3	20BME075	Ms. V. MURUGASHRI		
4	20BME227	Mr. N. LALITKISHORE		
5	20BME001	Mr. B. AAKASH		
6	20BME012	Mr. G. V. ANANTHU KRISHNA		
7	20BME120	Mr. S. L. VASEEKARAN		
8	20BME215	Mr. D. DINESH KUMAR		
9	20BME101	Mr. S. SANJAI		
10	20BME064	Mr. KRITHIK SIVASUBRAMANIAN		
11	20BME121	Mr. U. VENKATESAN		
12	20BME044	Mr. P. V. HARSHAVARDDHAN		
13	20BME020	Mr. P. BALAVIGNESH		
14	20BME263	Mr. V. VIKASH		
15	20BME076	Mr. M. NANDEESH		
16	20BME046	Mr. D. P. JAGDISH CASTRO		
17	20BME109	Mr. J. STEVE LEO		
18	20BME045	Mr. K. T. IMAYAN		
19	20BME017	Mr. A. R. ATHARSH		
20	20BME013	Ms. ANJANA PRASAD		
21	20BME240	Mr. L. PRADHEEP		
22	20BME098	Mr. J. SAM TIRSHATH		
23	20BME038	Mr. S. GOWTHAM		
24	20BME080	Mr. S. V. NITHESH		
25	20BME050	Mr. K. P. JEYASURIYAA		
26	20BME067	Mr. G. S. MADHAVAN		
27	20BME065	Mr. R. KUMARASAMY		
28	19BME008	Mr. H. N. LALITH		

BRAIN RAIN

To achieve as the student's gained knowledge based on science stuffs., MEA has planned to conduct an event named as BRAIN RAIN.



BRAIN RAIN was conducted on April 20th, 2022. This event consisted of two rounds.

In Round-1, an introductory round to explore some science riddles was conducted, and the best performers were selected and moved to the final round.

In Round 2, selected participants play the riddles with a higher difficulty level, and this round decides the podium winner.

Participants have been shortlisted based on the following criteria:

• Both round 1 and round 2 results were calculated by the number of questions answered correctly.



	Question	Question Type	Question Accuracy	Average Time per Question (mmss)	Correct	Incorrect	Unattempte d	Praveen R (Praveen R)	Pradheep p (Pradheep p)	Vaseekaran SL (Vaseekara n SL)	Sujith kumar S (Sujith kumar S)
1	1. What is the loneliest of all physics concept	Fill-in-the-Blank	10%	01:39	3	24	3	The singulari	The singulari	t The Singular	Singularity
2	2. What fails but never breaks?	Fill-in-the-Blank	6%	00:54	2	25	3	Dusk	Dusk	Feather	Feather I
3	3. What kind of chemical element hates to be	Fill-in-the-Blank	83%	00:52	25	1	4	Lead	Lead	Lead	Lead I
4	4. You will find me in Mercury, Earth, Mars an	Fill-in-the-Blank	70%	00:45	21	5	4	R	R	R	R I
5	5. If you take four years, how many days are	Fill-in-the-Blank	50%	00:53	15	7	8	1461	1461	1461	1467
6	6. You cannot see me, I cannot be touched	Fill-in-the-Blank	6%	00:38	2	23	5	Mcrowave pa	Microwave pa	Dream	Heat I
7	7. What can eat a lot of iron without getting s	Fill-in-the-Blank	66%	00:29	20	5	5	Rust	Rust	Rust	Rust I
8	8. What can be measured but has no width, I	Fill-in-the-Blank	36%	00:31	11	12	7	Temperature	Temperature	Temperature	Temperature 1
9	9. What are ten things you can always count	Fill-in-the-Blank	70%	00:18	21	2	7	Fingers	Fingers	Fingers	Fingers I
10	10. Many have heard it, but nobody has ever	Fill-in-the-Blank	46%	00:44	14	13	3	Edho	Echo	Echo	Echo I
			44%	07:43	134	117	49	90 %	90 %	70 %	70 %
	Quizizz	View Player D	ata		View Ti	me Data]	View St	ummary		

This event was coordinated by **Mr. Nishanth S** from 3rd year Mechanical Engineering. **Mr. Atharsh A R** from 2nd year Mechanical Engineering, **Mr. Mohamad Asik K** from 2nd year Mechanical Engineering, and their team successfully carried out the event. More than 30 students participated in this event. **Mr. Vaseekaran S. L** from 2nd year Mechanical Engineering was declared the winner, and **Mr. Sujith Kumar S** from 2nd year Mechanical Engineering was declared the runner-up. The prize money for the winner and runner-up was Rs. 1500 each.





This event was organized by MEA under the guidance of **Dr. V. R. Muruganantham**, Associate Professor, and **Dr. M. A. Vinayagamoorthi**, Assistant Professor – II.

CAD MAN

To achieve what the students gained little technical knowledge in modelling software, MEA has planned to conduct an event named CAD MAN.



CAD MAN was conducted on April 21st and 22nd, 2022 in offline mode, especially for the second year of Mechanical Engineering students. This event consisted of two rounds.

- 1. Part modelling
- 2. Assembly

In Round-1: Part Modelling, a 2D drawing will be given and the participants must prepare a 3D model in SolidWorks with the given material and find the correct mass of the prepared 3D model.

Round-2: Assembly – 3D parts will be provided, and participants must assemble the parts and determine the assembly's centre of mass as well as the distances between two edges/parts.



Participants have been shortlisted based on the following criteria:

- 1. Both round 1 and round 2 results were calculated by the number of questions answered correctly.
- 2. A screenshot of their model was made to be uploaded, and it was evaluated.

This event was coordinated by **Mr. Manav R. Samant** from 3rd year Mechanical Engineering. The event was successfully executed by **Mr. Vaseekaran S. L.** from 2nd year Mechanical Engineering and **Mr. Vidhun C. R.** from 2nd year Mechanical Engineering. More than 15 students participated in this event. **Mr. Steve Leo J** from 2nd year Mechanical Engineering was announced as the winner of this event. **Mr. Joel David** from 2nd year Mechanical Engineering was announced as the runner for this event. The prize money for the winner and runner-up was Rs. 3000 each.





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This event was organized by MEA under the guidance of **Dr. V. R. Muruganantham**, Associate Professor, and **Dr. M. A. Vinayagamoorthi**, Assistant Professor – II.

- Mr. Vaseekaran S L (20BME120) of Second Year Mechanical Engineering attended a workshop named "Autodesk Design Now (3D Modelling) by Autodesk" organized by IIT Roorkee from 24/03/2022 to 28/04/2022.
- **Mr. Subramanian M** (20BME111) of Second Year Mechanical Engineering completed a course in NPTEL from 24/01/2022 to 27/03/2022 and got recognition as "Elite Silver".

The below students have been selected for mentoring of engineering students by INAE Fellows. Only 60 students from all over India will be given an opportunity under this scheme.

Two students from the department have been selected. The training will be for two months. Training for this scheme and mentoring from KCT was facilitated by Mr. Jeeva B, Assistant Professor-I.

SI. No.	Name of the student	Roll No.	Year of study	To be mentored by INAE Fellow	Area
1	Mr. Rahul. P	19BME020	Third Year	Dr. Chennu Ranganayakulu, Visiting Professor, BITS Pilani , Pilani campus. [Formerly Scientist H/Outstanding Scientist, Technology Director (General Systems) & Director (Materials Management), Aeronautical Development Agency (ADA), Bangalore]	Heat Transfer and Heat Exchangers
2	Ms. Madhumitta. P	18BME064	Final year	Prof. Bijoy Bhattacharyya, Professor, Department of Production Engineering, Jadavpur University, Kolkata. A researcher with more than 7200 citations, h-Index - 44, I - 10 Index = 188.	Advanced Manufacturing Technology, Micromachining

REVIEWER'S POINT

ROYAL ENFIELD HUNTER 350

Introduction:

Royal Enfield is in the process of expanding their 350 cc motorcycles and has recently named them as Hunter. The new Royal Enfield Hunter 350 has been put through many test runs on Indian roads in semi-covered forms, which indicate that the motorcycle has an all-new design with the same engine as that of the Classic 350 and Meteor 350.

Design:

Mr. Nithesh S V 20BME080 2nd Mech.- B

Compared to the Classic 350 and Meteor 350, the Royal Enfield Hunter 350 has a more upright roadster-like stance, which is very much like the Interceptor 650. The Hunter 350 has a good design with some unique characteristics such as a round-themed halogen headlamp, turn indicators, tail lamp, tear-drop shaped fuel tank, round-edged side body

panels, and a nicely curved long seat. The handlebar will be slightly more upright, and like the Meteor 350, it is expected to come with alloy wheels as standard. The alloy wheels and engine are expected to have an all-black theme. Alloy wheels also mean this bike will have tubeless tyres, something missing on some of the other Enfield models that are on sale in India. It comes with a powerful 349 cc engine that produces a torque of 20.4 Ps at 6100 rpm.

Likely features:

- Sporty design
- Light weight to improve dynamics
- Impressive J-Series engine from the new Classic 350 and Meteor 350

Mechanics:

The new Hunter 350 is a radical departure from the

Classic 350 and Meteor 350 in its design. It will have the same engine as the other two motorcycles. The new four-stroke, single-cylinder, liquid-cooled, 349.34 cc engine produces 20.2 PS of power and 27 Nm of torque in the Classic 350 and Meteor 350. It has a standard 5-speed gearbox..

Expected Price:

In Royal Enfield's line-up, the Hunter 350 will be positioned in between the Classic 350 and Meteor 350, which indicates a price range of Rs 2-2.5 lakh for the motorcycle.



Department of Mechanical Engineering

INSTITUTE VISION:

The vision of the college is to become a technical university of International Standards through continuous improvement.

INSTITUTE MISSION:

Kumaraguru College of Technology (KCT) is committed to providing quality Education and Training in Engineering and Technology to prepare students for life and work equipping them to contribute to the technological, economic, and social development of India. The College pursues excellence in providing training to develop a sense of professional responsibility, social and cultural awareness and set students on the path to leadership.

DEPARTMENT VISION:

To emerge as a centre, that imparts quality higher education through the programme in the field of Mechanical Engineering and to meet the changing needs of the society.

DEPARTMENT MISSION:

The department involves in sustained curricular and co-curricular activities with competent faculty through teaching and research that generates technically capable Mechanical Engineering professionals to serve the society with delight and gratification.

B. E. MECHANICAL ENGINEERING

PROGRAM EDUCATIONAL OUTCOMES (PEO's):

- **PEO 1 :** Graduates will take up career in manufacturing and design related disciplines.
- **PEO 2 :** Graduates will be involved in the execution of Mechanical Engineering projects.
- **PEO 3 :** Graduates will take up educational programme in mastering Mechanical sciences and management studies.

PROGRAM OUTCOMES (PO's):

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

- 2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- **5. Engineering knowledge:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 7. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 8. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- **9. Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- **11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **12. Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSO's):

- 1. Apply the fundamentals of science and mathematics to solve complex problems in the field of design and thermal sciences.
- 2. Apply the concepts of production planning and industrial engineering techniques in the field of manufacturing engineering.

M. E. INDUSTRIAL ENGINEERING

PROGRAM EDUCATIONAL OBJECTIVES (PEO's):

- **PEO 1 :** Graduates will be mid to higher level management / engineering professionals with responsibilities in engineering management, data analysis and business operations.
- **PEO 2 :** Graduates will be engineering professionals, and technology leaders who would manage such functions as plant engineering, production, supply chain and quality management.
- **PE03 :** Graduates would function as educators or researchers in academic institutions.

PROGRAM OUTCOMES (PO's):

- **P01 :** An ability to independently carry out research /investigation and development work to solve practical problems.
- **P02** : An ability to write and present a substantial technical report/document.
- **PO3** : Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
- **P04 :** Apply knowledge and competencies in manufacturing, analytics, supply chain, quality and engineering management.
- **P05** : Apply principles of industrial engineering to solve problems in industry.
- **P06 :** An ability to work as part of interdisciplinary teams, communicate effectively, model and design engineering systems optimally.

PROGRAM SPECIFIC OUTCOMES (PSO's):

- **PS01 :** Graduates will be able to apply the engineering management and data management concepts in industrial engineering areas.
- **PS02 :** Graduates will be able to apply industrial engineering skills and knowledge to effectively manage the functions of production and supply chain management.