Mechanical Engineering

Programs offered

- B Tech (Mechanical Engg D&M)
- Dual Degree (B.Tech + M.Tech)
- M Des (Mechanical Systems Design)
- Doctoral Programs

![Bar chart showing Students Admitted from 2007 to 2014]

Legend:
- UG (B.Tech + DD)
- PG (M.Des)
- PhD

Courses offered:

- Successful Product Design, Practice & Project-based Learning
- Creative Thinking
- Engg Design
- Computer Science & IT
- Planning & Management
- Mechanical
- Electrical & Electronics
- New Manufacturing Methods
- Basic Science & Engg

- Product Planning & Management
Prof Gnanamoorthy R (Dr Eng Japan)
Professor & Director
Research Interests: Mechanical Design and Manufacturing, Surface Engineering

Raja B (Ph.D. CEG, Anna University)
Assistant Professor
Research Interests: Experimental Thermal and Fluid Science, Nanofluids

Dr Venkata Timmaraju Mallina
(Ph.D. IIT Madras)
Assistant Professor
Research Interests: Modeling of Materials Behavior, Fatigue and Fracture, Design with Polymers

Jayabal K (Ph.D. IIT Madras)
Assistant Professor
Research Interests: Computational Mechanics Finite Element Methods, Material Modelling

Shaul Hamid Khan (Ph.D. NIT Trichy)
Assistant Professor
Research Interests: Multi Objective Optimization, Supply Chain Management

Pandithevan P (Ph.D. IIT Guwahati)
Assistant Professor
Research Interests: CAD/CAM, Biomimetic Design, Tissue Engineering

Jayavel S (Ph.D. IIT Madras)
Assistant Professor
Research Interests: CFD, Fluid and Thermal Sciences, Heat Transfer

Sree Kumar M (Ph.D. IIT Madras)
Assistant Professor
Research Interests: Robotics, Mechanisms, Smart Materials, Fuzzy Control

Senthil Kumaran K (Ph.D. IIT Delhi)
Assistant Professor
Research Interests: Additive Manufacturing, Sustainable Manufacturing,
Dr S Jayavel
Assistant Professor (Dept. of Mechanical Engineering)
Ph.D. (IIT Madras)

**Research Interests**
- Fluid flow and thermal sciences
- Computational fluid dynamics

**Research Publications**
- Refereed Journal : 9
- Conference Presentations : 24
- Total : 33
- Research Citations: 21
- h-index: 3

**Sponsored Projects**
Ongoing: 1 Value Rs. 15.05 Lakhs

**Recent Publication**
Dr. B. Raja
Assistant Professor (Dept. of Mechanical Engineering)
Ph.D. (CEG, Anna University - Chennai)

**Research Interests**
- Electronic cooling: Miniaturized heat exchanger, heat pipes, enhanced heat transfer
- Measurements devices: 3-Omega and hot wire techniques for thermal conductivity
- Food processing equipment design: Freeze Drying, Vacuum cooling and frying
- Computational Fluid Dynamics: Two phase flow in OpenFOAM

**Research Publications**
- International Journals: 22
- International Conf.: 3
- National Conf.: 5
- Total: 30

**Sponsored Projects**
Completed: 1 - (Value Rs. 12.89 Lacs)

**Recent publications**
- Siddharth Komini Babu, K.S. Praveen, B. Raja, P. Damodharan, Measurement of thermal conductivity of fluid using single and dual wire transient techniques, Volume 46, Issue 8, October 2013, Pages 2746-2752
Dr Jayabal K
Assistant Professor (Dept. of Mechanical Engineering)
Ph.D. (IIT Madras)

Research Interests
- Computational Mechanics
- Finite Element Methods
- Material Modelling
- Engineering Design, Smart Materials

Research Publications
- Refereed Journals : 08
- Conference Presentations : 09

Recent publications


Dr. Shahul Hamid Khan
Assistant Professor (Dept. of Mechanical Engineering)
Ph.D. (NIT Trichy)

Research Interests
- Multi objective Optimization
- Green Supply Chain Management
- Product Lifecycle Management
- Quality and Reliability Management

Research Publications
- International Journal : 7
- Conferences : 17
- Citations (Total) : 31
- h-index : 3
- i10-index : 1

Recent publications


Dr M Sreekumar
Assistant Professor (Dept. of Mechanical Engineering)
Ph.D. (IIT Madras)

Research Interests
- Serial, Parallel, Compliant Mechanisms
- Robotics, Smart Materials and Smart Structures
- Fuzzy Control

Research Publications
- Refereed Journals : 16
- Conference Presentations : 17
- Research Citations : 132
- h-index : 7 ; i10 index : 3

Foreign Assignments
Visiting Professor-EMARO (European Master on Advanced Robotics), University of Genova, Italy

Recent Publications
Dr Senthilkumaran K
Assistant Professor (Dept. of Mechanical Engineering)
Ph.D. (IIT Delhi)

Research Interests
❖ Additive Manufacturing
❖ Sustainable Manufacturing
❖ Design Manufacturing Integration
❖ Smart Manufacturing

Research Publications
❖ Refereed Journals : 15
❖ Conference Presentations : 09

Recent publications


❖ Numerical and Experimental Investigations on Laser melting of SS316L metal powders, Journal of Manufacturing Processes, Accepted for publication, 2014, (With Kurian Antony and N. Arivazhagan)
Dr. Venkata Timmaraju Mallina
Assistant Professor (Dept. of Mechanical Engineering)
Ph.D. (IIT Madras)

Research Interests
- Mathematical Modeling of Materials Behavior
- Fatigue and Fracture of Engineering materials
- Engineering Design with Polymers and Composites

Research Publications
- Refereed Journals: 04
- Conference Presentations: 09

Recent publications


Dr. P Pandithevan
Assistant Professor (Dept. of Mechanical Engineering)
Ph.D. (IIT Guwahati)

Research Interests

- Geometric Modeling and CAD
- Computational Geometry
- Bio-mimetic Design and Tissue Engineering
- Layered Manufacturing
- Computational Mechanics
- Robotics

Research Publications

- Refereed Journal: 5
- Conference Presentations: 6
- Total: 11
- Research Citations: 24

Recent Publications

COMPUTER ENGINEERING

**Programs offered**
- B Tech Computer Engineering
- Dual Degree (B.Tech+M.Tech)
- Doctoral Programs

The Novel Curriculum is based on ACM – Association of Computing Machinery recommendations

**Some Facilities...**

<table>
<thead>
<tr>
<th>Category</th>
<th>Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Computers</strong></td>
<td>* Fujitsu/IBM Systems X Servers</td>
</tr>
<tr>
<td></td>
<td>* High end Xeon Quad Core Processor based workstations</td>
</tr>
<tr>
<td></td>
<td>* 2 T FLOPS Personal Super Computer</td>
</tr>
<tr>
<td><strong>Software/OS</strong></td>
<td>* Cadence EDA Tools, MATLAB</td>
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<tr>
<td></td>
<td>* Xilinx Prototyping Tools</td>
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<td></td>
<td>* RHEL</td>
</tr>
<tr>
<td><strong>Hardware</strong></td>
<td>* FPGA Prototype Boards</td>
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<tr>
<td></td>
<td>* Microprocessor Kits</td>
</tr>
<tr>
<td></td>
<td>* Interface Cards</td>
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</tbody>
</table>
Faculty

Masilamani V (Ph.D. IIT Madras)  
Assistant Professor  
**Research Interests:** Image Processing, Computer Vision, Data Structures and Algorithms

Noor Mahammad SK (Ph.D. IIT Madras)  
Assistant Professor  
**Research Interests:** Reconfigurable computing, Software for VLSI Design, Evolvable Hardware, Open Flow Networks, Software Designed Radio.

Sivaselvan B (Ph.D. NIT Trichy)  
Assistant Professor  
**Research Interests:** Knowledge and Data Engineering, Human Computer Interaction

Sadagopan N (Ph.D. IIT Madras)  
Assistant Professor  
**Research Interests:** Graph Theory, Combinatorics, Data Structures and Algorithms, Computer Networks, Database Systems.

Umarani Jayaraman (Ph.D. IIT Kanpur)  
Assistant Professor  
**Research Interests:** Knowledge and Data Engineering, Human Computer Interaction
Dr V Masilamani
Assistant Professor (Dept. of CSE)
Ph.D. (IIT Madras)

**Research Interests**
- Image Processing
- Theoretical Computer Science
- Computer Vision

**Research Publications**
- Refereed Journals : 10
- Conference Presentations : 25

**Projects**
1. Smart Home Application
2. Image Security

**Recent publications**
Dr Noor Mahammad Sk
Assistant Professor (Dept. of CSE)
Ph.D. (IIT Madras)

Research Interests
- VLSI Design
- Reconfigurable Computing
- Network System Design
- Software Defined Radio

Projects
1. Baseband Reconfigurable Processor Design
2. SDR based System Design
3. Programmable Network System Design

Recent publications
Dr N Sadagopan
Assistant Professor (Dept. of CSE)
Ph.D. (IIT Madras)

Research Interests
- Graph Theory
- Data Structure and Algorithms
- Parallel Algorithms

Research Publications
- Refereed Journals: 04
- Conference Presentations: 05

Projects
1. Study of Computational Complexity of coloring, odd-cycle transversal on Uni-chord free graphs
2. Design and Analysis of Parallel algorithms for bio-connectivity argumentation on weighted trees

Recent publications
• R. Krithika, Rogers Mathew, N. S. Narayanaswamy, and N. Sadagopan, A Dirac-type Characterization of k-chordal Graphs, DISCRETE MATHEMATICS, Volume 313, Issue 24, 28 December 2013, Pages 2865-2867.
Dr B Sivaselvan
Assistant Professor (Dept. of CSE)
Ph.D. (NIT Trichy)

Research Interests

- Knowledge & Data Engineering
- Evolutionary Computation
- Usability Engineering

Research Publications

- Refereed Journals: 04
- Conference Presentations: 10
- Books Published: 04

Projects:

1. Induction, Search and Approximation Perspectives of Knowledge Engineering

Recent publications

- Sowmya Jain, B.Sivaselvan, Usability Aspects of HCl in the Design of CAPTCHAs, IEEE - ICCIC Dec 2012.
Dr. Umarani Jayaraman
Assistant Professor (Dept. of CSE)
Ph.D. (IIT Kanpur)

Research Interests

- Biometrics
- Pattern Recognition
- Computer Vision and Digital Image Processing.

Research Publications

- Refereed Journals: 05
- Conference Presentations: 10

Recent publications


ELECTRICAL & ELECTRONICS ENGINEERING

Programs offered
- B Tech (Electronics Engg D&M)
- Dual Degree(B.Tech+M.Tech)
- M Des (Electronic Systems Design)
- M Des (Communication Systems Design)
- Doctoral Programs

Students Admitted

<table>
<thead>
<tr>
<th>Year</th>
<th>UG (B.Tech + DD)</th>
<th>PG (M.Des)</th>
<th>PhD</th>
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<td>2014</td>
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<td>5</td>
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</table>
Faculty

**Prabhu K M M (Ph.D. IIT Madras)**
Professor – Emeritus
**Research Interests:** Digital Signal Processing

**Karthikeyan S S (Ph.D. IIT Guwahati)**
Assistant Professor
**Research Interests:** Microwave Passive Devices, Microstrip Antennas, MetaMaterials,

**Premkumar K (Ph.D. IISc Bangalore)**
Assistant Professor
**Research Interests:** Scheduling in Networks, Social Networks, Internet of Things, Big Data Analytics

**Binsu J Kailath (Ph.D. IIT Madras)**
Assistant Professor
**Research Interests:** Micro Electronics and MEMS Modelling Technology

**Selvajothi K (Ph.D. IIT Madras)**
Assistant Professor
**Research Interests:** Power Electronics and Drives, FPGA, DSP control algorithms

**Priyanka Kokil (Ph.D. NIT Allahabad)**
Assistant Professor
**Research Interests:** Nonlinear, Delayed Multidimensional Systems

**Damodharan P (Ph.D. IIT Madras)**
Assistant Professor
**Research Interests:** Power Electronics and Drives

**Selvaraj M D (Ph.D. IIT Delhi)**
Assistant Professor
**Research Interests:** Wireless Communications, Digital Communication over Fading Channels.

**Dr. Shunmugham R. Pandian (Ph.D. IIT Delhi)**
Visiting Faculty
**Research Interests:** Electromechanical Systems, Robot Design, Renewable Energy Systems
Prof K.M.M. Prabhu
Emeritus Professor (Dept. of Electrical & Electronics Engg.,)
Ph.D. (IIT Madras)

Research Interests
- Digital Signal Processing (DSP) and Communications, Analog and Digital Filter Design
- High-speed DSP Algorithms and their Implementation
- Active Noise Control, Non-uniform Sampling, Compressed Sensing

Research Publications
- Refereed International Journals: 80
- International Conference Presentations: 62
- Total: 142

Sponsored Research and Consultancy Projects
Number Completed: 7 Value: Rs ~ Rs. 50 Lakhs

Recent Publications
Dr S R Pandian
Visiting Faculty (Dept. of Electrical & Electronics Engg.,) Ph.D. (IIT Delhi)

Research Interests
- Robotics and autonomous systems
- Controls and Mechatronics

Research Publications
- Refereed Journal: 20
- Conference Presentations: 97
- Total: 117
- Patents: 1
- Research Citations: 223

Sponsored Projects
Completed: 6, Rs. 1.08 crores; Ongoing: 2, Rs. 34.76 lakhs

Recent Publication
Dr Binsu J Kailath
Assistant Professor (Dept. of Electrical & Electronics Engg.,)  
Ph.D. (IIT Madras)

Research Interests
- Micro Electronics & VLSI Design
- Analog & Digital VLSI Design
- Silicon Carbide MOS
- Advanced MOS Devices, HEMTs
- Micro & Nano Electro Mechanical Systems

Research Publications
- Refereed Journals : 7
- Conference Presentations : 12
- Total : 19
- Research Citations: : 16
- h-index : 2

Recent Publications
Dr. P. Damodharan
Assistant Professor (Dept. of Electrical & Electronics Engg.,)
Ph.D. (IIT Madras)

Research Interests
- Power Electronics: Power Supply Design
- Electrical Drives: Permanent Magnet Brushless DC and AC Drives
- Wind Energy Conversion: MPPT and Grid Synchronization
- Measurement Devices: 3-Omega and hot wire techniques for thermal conductivity

Research Publications
- International Journal: 7
- International Conf.: 2

Recent Publications
Dr. S. S. Karthikeyan
Assistant Professor (Dept. of Electrical & Electronics Engg.,)
Ph.D. (IIT Guwahati)

Research Interests
- Microwave passive devices
- Microstrip antennas
- Meta materials
- RFIC & RF MEMS

Research Publications
- Refereed Journal: 12
- Conference Presentations: 14
- Total: 26
- Research Citations: 54
- h-index: 04
- i10 index: 01

Recent Publications
- K. V. Phani Kumar and S. S. Karthikeyan "A compact and high performance band-stop filter using open complementary split ring resonator", in the proceedings of AEMC-2013, Bhubaneshwar, 2013
- K. V. Phani Kumar and S. S. Karthikeyan "A compact and high performance band-stop filter using open complementary split ring resonator", in the proceedings of NCC-2013, IIT Delhi, Delhi, 2013
Dr. Premkumar K.
Assistant Professor (Dept. of Electrical & Electronics Engg.,)
Ph.D. (IISc Bangalore)

Research Interests
- Wireless Networks
- Social Networks
- Cognitive Radio
- Internet of Things

Research Publications
- Refereed Journals : 5
- International Conferences : 10
- National Conferences : 3
- h-index: 7, i10-index: 6, Citations: 222

Recent Publications

Result of an Experiment that demonstrates the increase in lifetime with Sleep-Wake scheduling of WiFi (see [2]).

How to optimally allocate airtimes, and channel coding rates in a multi-hop network (see [1]).
**Research Interests**

- Nonlinear systems
- Delayed systems
- Multidimensional systems

**Research Publications**

- **Refereed Journals**: 09
- **Conference Presentations**: 03
- **Research Citations**: 11

**Recent publications**

- Priyanka Kokil, Anurita Dey, Haranath Kar "Stability of 2-D digital filters described by the Roesser model using any combination of quantization and overflow nonlinearities", in Signal processing, 92 (2), 2012, 2874-2880
- Priyanka Kokil, Haranath Kar "An improved criterion for the global asymptotic stability of fixed-point state-space digital filters with saturation arithmetic", in Digital Signal Processing, 22 (6), 2012, 1063-1067
- Anurita Dey, Priyanka Kokil, Haranath Kar "Stability of two-dimensional digital filters described by the Fornasini–Marchesini second model with quantisation and overflow", in IET signal processing, 6 (7), 2012, 641-647
Dr. K Selvajyothi
Assistant Professor (Dept. of Electrical & Electronics Engg.,)
Ph.D. (IIT Madras)

Research Interests
- Power Electronics, Drives and Control
- DSP Realization of Control Algorithms in Power Electronics
- FPGA/DSP Hardware

Research Publications
- Refereed Journals: 04
- Conference Presentations: 06
- Research Citations: 40

Recent publications
Dr. M.D. Selvaraj
Assistant Professor (Dept. of Electrical & Electronics Engg.,)
Ph.D. (IIT Delhi)

Research Interests
- Wireless Communications
- Cooperative Diversity
- Mobile Communications
- Digital Communication over Fading Channels
- Cognitive Radio
- Green Communications

Research Publications
- Refereed Journals: 08
- Conference Presentations: 10

Recent publications
BASIC SCIENCES

Programs offered

- Doctoral Programs

Student Strength


Bar chart showing student strength in Physics and Maths from 2009 to 2014.
Faculty

Physics

Tapas Sil
(Ph.D. Viswa Bharathi University)
Assistant Professor
Research Interests: Theoretical Nuclear Physics, Quantum Mechanics

Naveen Kumar Vats
(Ph.D. IIT Delhi)
Assistant Professor
Research Interests: Fiber Optics, Solar Thermal Energy application

Mathematics

Shalu MA
(Ph.D. IIT Madras)
Assistant Professor
Research Interests: Graph Theory, Coloring Problems, Algorithms

Vijayakumar S
(Ph.D. IIT Madras)
Assistant Professor
Research Interests: Computational Complexity, Algorithms, Combinatorial Optimization
**Dr. Tapas Sil**
Assistant Professor (Dept. of Physics)
Ph.D. (Visva-Bharati University)

**Research Interests**
- Giant Resonances of Nuclei
- RMF Theory in Nuclear Structure
- Properties of Hot Nuclei
- Supersymmetric Quantum Mechanics

**Research Publications**
- Refereed Journal : 24
- Conference Presentations : 13
- Book (a chapter) : 01
- Total : 38
- Research Citations : 319
  - h-index 09
  - i10 index 09

**Recent Publications**
- MR Anders, S Shlomo, Tapas Sil, DH Youngblood, YW Lui (2013) Giant resonances in \(^{40}\text{Ca}\) and \(^{48}\text{Ca}\), Physical Review C87, pp. 024303
Dr. Naveen Kumar
Assistant Professor (Dept. of Physics)
Ph.D. (IIT Delhi)

Research Interests
- Fiber Optics, Design and Fabrication of All-Fiber DWDM Components/Devices and Fiber Interferometry

Research Publications
- Refereed Journal: 14
- Conference Presentations: 26
- Total: 40
- Research Citations: 83
  h-index: 6  i10 index: 4

Sponsored Projects
No. Completed: 1  Value: Rs ~ Rs.17 Lakhs

Recent Publications
Research Interests

- Algorithms Design
- Combinatorial Optimization
- Lattice Problems

Research Publications

- Refereed Journal: 03
- Conference Presentations: 03

Recent Publications


Dr. Shalu M A  
Assistant Professor (Dept. of Mathematics)  
Ph.D. (IIT Madras)

Research Interests
- Graph Theory
- Algorithms
- Metabolic Networks

Research Publications
- Refereed Journal : 03
- Conference Presentations : 01

Recent Publications
- S. A. Choudum, T. Karthick, M. A. Shalu "Linear Chromatic Bounds for a Subfamily of 3K_1-free Graphs", in Graphs and Combinatorics, 24, 2008, 413-428
- S. A. Choudum, T. Karthick, M. A. Shalu "Perfect coloring and linearly chi-bound P6-free graphs", in Journal of Graph Theory, 54, 2007, 293-306
- Shalu M A, and Devi Yamini S, Counting the maximal independent sets in power set graphs, accepted for publication in Journal of Combinatorial Mathematics and Combinatorial Computing