

# Thrust Area

- Department of Mechanical Engineering
  - Composite materials
  - Fracture mechanics
  - Experimental fluid science
  - Computational fluid dynamics
  - Vibration of crack structure and condition monitoring
  - Mechanics of advance materials
  - Smart structure
  - Non-conventional manufacturing
  - Fuel sale control
  - Soft computing
  - Micro structure of alloys
  - Unsteady of aero dynamics
  - Dynamics of inextensible vesicles
  - Non-linear dynamics
  - Alternative fuel
  
- Department of Computer Science & Engineering
  - Artificial Intelligence and Artificial Neural Networks
  - Bioinformatics
  - Ad-hoc Wireless Networks
  - Data mining and Data warehousing
  - Image Processing
  - Natural Language Processing
  - Mobile Computing

- Department of Computer Applications
  - Micro array Data Analysis Using SVM
  - E-Barnabodha: A Computer Aided Learning Package for Oriya
  - Question Answering System based on Paninian Framework
  - Concept Based Automatic Text Summarization
  - Routing Protocol for Wireless Sensor and Actor Networks
  - Advanced Radix Sort: A Technique for Optimization of radix sort.
  - Spatial Data Processing in GIS
  
- Department of Information Technology
  - Artificial intelligence and Artificial Neural Works
  - Bioinformatics
  - Ad-hoc Wireless Networks
  - Data Mining and Data warehousing
  - Natural Language Processing
  
- Department of Electronics & Communication Engineering
  - Image Processing, Biomedical Image Analysis
  - Robotics
  - Smart Antenna
  - Mobile computing & networking
  - Telematics & Adhoc networks
  - Adaptive Signal Processing
  - VLSI & embedded Systems
  - Blind Signal processing
  - High electron Mobility transistor
  - Digital IC Design
  - Statistical Signal Processing involving Biomedical Signals, like EEG, Speech Signals etc.
  - Design of DDR IMPATT diodes and performance analysis.

- Active Noise Cancellation.
  
- Department of Chemistry
  - Solution Chemistry: To develop new hydrometallurgical processes and to study thermodynamic and acoustic properties of various electrolytes.
  - Materials Chemistry: To develop new materials with technological applications.
  - Environmental Chemistry: To assess water quality and to develop new processes for solid and liquid waste treatment.
  
- Department of Physics
  - Spintronics Materials
  - Magnetic semiconductors
  - Multiferroic materials and films
  - Ferroelectric Materials
  - Ferrite thin films
  - Semiconductor superlattices
  - Quantum Computation and Quantum Information
  - Laser Spectroscopy
  - High Temperature Superconductor
  - Modeling and simulation
  - Binary liquid mixtures
  
- Department of Mathematics
  - Unsteady Flow and Heat Transfer
  - Mathematical modelling on plant growth
  - Numerical quadrature

- Department of Humanities
  - Communication Studies
  - Communication skills of the student
  - Business Communication as it is today
  - Understanding of Business Houses
  - Soft skills, soft powers
  - Personality orientation for organizational adaptability
  - Understanding individual and interpersonal behavior
  - Developing awareness and insight for personal and professional growth
  - Economic processes related to engineering and technology
  - Feminist Studies
  
- Department of Civil Engineering
  - Advanced structural analysis and design
  - Application of remote sensing & GIS
  - Application of soft-computing in Civil Engg. e.g. ANN, Fuzzy logic, Genetic Algorithm, Evolutionary algorithm
  - Water Resources Development
  - Transportation Planning and Design
  - Advanced Constructional Techniques of Roads
  - Advanced Surveying Techniques
  - Optimisation Techniques and its application in various fields of Civil Engineering.
  - Environmental Impact assessment.
  - Waste utilization and environmental pollution control.
  - Disaster mitigation and management
  - Geo-technical problems and solutions.
  - Geo-textile and its use in Civil Engineering works.

- Department of Applied Electronics & Instrumentation Engineering
  - Neural Networks, Image processing & Signal processing
  - Wireless Networks
  - Sensor & signal
  - Process control
  - Micro Electronics
  - VLSI Design and architecture.
  - Micro and Nano-computing
  
- Department of Electrical & Electronics Engineering
  - Study of the interfacing issues for the PV connected and wind connected systems in both standalone and grid connected systems
  - Neural Networks, Image processing & Signal processing
  - Wireless Networks
  - Image Processing, Biomedical Image Analysis
  - Robotics
  - Telematics & Adhoc networks
  
- Department of Instrumentation & Control Engineering
  - Biomedical Instrumentation
  - Telematics & Adhoc networks
  - Adaptive Signal Processing
  - VLSI & embedded Systems
  - Blind Signal processing
  - High electron Mobility transistor
  - Digital IC Design
  - Sensor & signal
  - Process control

- Department of Electrical Engineering
  - Study of the interfacing issues for the PV connected and wind connected systems in both standalone and grid connected systems
  - Energy auditing and testing
  - Energy theft and prevention