# POSTGRADUATE STUDY

## FACULTY OF ENGINEERING

### SCHOOL OF BIOMEDICAL ENGINEERING & HEALTH SCIENCE

<table>
<thead>
<tr>
<th>Taught Course</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Science</td>
<td>Master of Philosophy</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td></td>
<td>Rehabilitation Technology</td>
</tr>
<tr>
<td>AREA OF RESEARCH</td>
<td>Doctor of Philosophy</td>
</tr>
<tr>
<td>Biomaterials</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td>Biomechantronics</td>
<td>Health Science</td>
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<tr>
<td>Biomedical Imaging</td>
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<td>Biomedical Instrumentation</td>
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<td>Biosignal Processing</td>
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<td></td>
<td>Clinical Engineering</td>
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<td></td>
<td>Health Care Management System</td>
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<td>Medical Computing</td>
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### SCHOOL OF ELECTRICAL ENGINEERING

<table>
<thead>
<tr>
<th>Taught Course</th>
<th>Research</th>
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<tbody>
<tr>
<td>Master of Engineering</td>
<td>Master of Philosophy</td>
</tr>
<tr>
<td>Computer &amp; Microelectronic</td>
<td>Electrical Engineering</td>
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<tr>
<td>System</td>
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<tr>
<td>Electrical Power</td>
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<tr>
<td>Electronic &amp; Telecommunication</td>
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<tr>
<td>Mechatronics &amp; Automatic Control</td>
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<tr>
<td>AREA OF RESEARCH</td>
<td>Doctor of Philosophy</td>
</tr>
<tr>
<td>Analog Mix-Signal</td>
<td>Power Electronic</td>
</tr>
<tr>
<td>Computer Engineering</td>
<td>Power System</td>
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<tr>
<td>Computer Networks</td>
<td>Radio and Wireless Communication</td>
</tr>
<tr>
<td>Control and Instrumentation</td>
<td>Robotic</td>
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<tr>
<td>Electronic System Design</td>
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### SCHOOL OF COMPUTING

<table>
<thead>
<tr>
<th>Taught Course</th>
<th>Mixed Mode</th>
<th>Research</th>
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</thead>
<tbody>
<tr>
<td>Master of Science</td>
<td>Master of Computer Science</td>
<td>Master of Philosophy</td>
</tr>
<tr>
<td>▶ Information Security</td>
<td></td>
<td>▶ Computer Science</td>
</tr>
</tbody>
</table>

#### AREAS OF RESEARCH

**Taught Course**
- Artificial Intelligence
- Augmented Reality Environment
- Bioinformatics
- Body Sensor Network Trust
- Business Process Engineering & Knowledge Management
- Cloud Computing Management & Adoption
- Cloud Computing Protocol & Security
- Co-Creation and Strategic System
- Computer Forensic
- Computer Network & Security
- Corporate Forensic Readiness Framework
- Data Clustering
- Database and Informational Retrieval
- Disaster Recovery Management
- Disaster Recovery Metamodelling
- E-Learning
- E-Services Satisfaction & Quality Management
- Forgery Detection & Optimization
- Framework For E-Government
- Graphics & Multimedia
- Information Security Metamodelling
- Information Service System
- Information System Adoption

**Mixed Mode**
- Information System Management
- Information System Security
- Internet of Things (IoT)
- IT Service Management
- MANET Protocol
- Modelling & Classification
- Network & Security
- Network Forensic
- Object Tracking Algorithm
- Operational Research Business Intelligence
- Optimization and Scheduling
- Pattern Recognition
- Pervasive Computing
- Privacy Modelling
- Privacy Preserving
- Social Media Framework
- Social Networking Adoption
- Soft Computing Virtual
- Software Engineering and Information Assurance
- Software Testing
- VANET
- Visualization and Vision

**Research**
- Master of Philosophy
  - Computer Science
- Doctor of Philosophy
  - Computer Science

### SCHOOL OF CIVIL ENGINEERING

<table>
<thead>
<tr>
<th>Taught Course</th>
<th>Mixed Mode</th>
<th>Research</th>
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</thead>
<tbody>
<tr>
<td>Master of Engineering</td>
<td>Engineering Doctorate Construction Technology &amp; Management</td>
<td>Master of Philosophy</td>
</tr>
<tr>
<td>▶ Civil</td>
<td></td>
<td>▶ Coastal &amp; Maritime</td>
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<tr>
<td>▶ Construction Management</td>
<td></td>
<td>▶ Construction</td>
</tr>
<tr>
<td>▶ Environmental Management</td>
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<td>▶ Environment</td>
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<tr>
<td>▶ Geotechnics</td>
<td></td>
<td>▶ Geotechnics</td>
</tr>
<tr>
<td>▶ Hydraulics &amp; Hydrology</td>
<td></td>
<td>▶ Highway &amp; Traffic</td>
</tr>
<tr>
<td>▶ Structure</td>
<td></td>
<td>▶ Hydraulics</td>
</tr>
<tr>
<td>▶ Transportation</td>
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<td>▶ Hydrology &amp; Water Resources</td>
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</tbody>
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**Master of Forensic Engineering**

**Master of Project Management**

**Research**
- Doctor of Philosophy
  - Civil Engineering
### Areas of Research

- Construction Management
- Environmental Engineering and Management
- Forensic Engineering
- Geotechnics
- Highway & Transportation
- Hydraulics & Hydrology
- Project Management
- Structures & Materials

### School of Mechanical Engineering

#### Taught Course
**Master of Science**
- Advanced Manufacturing Technology
- Aeronautical Engineering
- Automotive Engineering
- Industrial Engineering
- Materials Engineering
- Mechanical Engineering
- Ship and Offshore Engineering

#### Research
**Master of Philosophy**
- Mechanical Engineering
- Marine Technology

**Doctor of Philosophy**
- Mechanical Engineering

### Areas of Research

**Applied Mechanics & Design:**
- Adaptive Control and Intelligent System
- Applied Mechanics & Composite Structures
- Artificial Intelligence
- Automatic Control & System Engineering
- Automotive Systems Engineering
- Biomechanics
- Biomedical Engineering
- CAD & Virtual Reality
- Composite Structure & Ballistic Impact
- Computational Solid Mechanics
- Control & Mechatronics
- Elasticity & Plasticity
- Embedded and Control System
- Fatigue and Fracture Mechanics
- FEM
- Functional Control Systems
- Guided Wave & Acoustic
- Impact Properties of Composite Material Industrial Design
- Instrumentation & Measurement
- Instrumentation and Control
- Mechanical and Electrical Engineering
- Mechatronic and Instrumentation Plates
- Porous Structures
- Reliability & Engineering Design
- Shells & Pressure Vessels
- Structural Vibration and Condition Monitoring
- Structural Dynamic
- Structural Impact & Crashworthiness
- Structural Mechanics
- Thin-Walled and Polymeric Materials
- Tissue Engineering Scaffolds

**Automotive, Aeronautic & Offshore:**
- Advanced Ice-Ship
- Aerodynamics
- Airspace Safety Monitoring System
- Automotive Tribology
- Avionics and Antennae
- Biofuel
- Biofuel and Multiphase Flow
- Brake Design & Safety
- CFD & Combustion
- Combustion Technology
- Computer Vision
- Contact Mechanics
- Electric and Hybrid Vehicles
- Engine Air Management
- Ethnographic Factors in Fishing Boat Design
- Fem & Model Updating
- Flight Guidance and Control
- Flight Simulation
- Helicopter Technology and Aircraft Structures
- Hull-Riser-Mooring Coupled Dynamics
AREAS OF RESEARCH

- Hydromechanics
- Internal Combustion Engines
- Low Emission Combustor
- Marine Active Control
- Marine Environment & Renewable Energy
- Marine Safety and Environment

Marine Transport and Management
- Mega-Float Design & System Modelling
- Rocket Propulsion
- Ship Dynamics
- Smart Offshore Structure Stability & Design

Materials, Manufacturing & Industry:
- Advanced Manufacturing Process
- Advanced Materials
- Automation in Manufacturing
- CAD/CAPP/CAM/CNC
- Carbon Nanomaterials
- Ceramics and Composites
- Ceramics Coating Solid State Kinetics
- Supply Chain Management
- Surface Coating
- Surface Treatment & Industrial Engineering
- Surface Engineering & Composites Machining
- Sustainable Product Design
- System Dynamic Modelling

Tens Operations and Characterisation
- Virtual Manufacturing Work Design
- Structural Dynamics
- Subsea & Offshore Engineering
- System Energy/Waste Heat Recovery
- Tribology
- Tunnel Testing
- Turbomachinery & Aeroacoustics
- Unsteady Aerodynamics
- Vehicle Powertrain
- Vehicle Stability and Control Wind
- Vehicle Dynamics and Control
- Vortex Induced Vibration
- Wave Structure Interaction

Thermofluid:
- Advanced Refrigeration and Air-Conditioning System
- Applied Mathematics in Mechanical Engineering
- Combustion Energy & Advanced Heat Transfer
- Compressible Flow
- Fluid Dynamics

Fuel and Energy
- HVAC
- Micro-Cooling
- Sustainable Energy Technology Thermofluids Measurement and Diagnostics Energy Management
# SCHOOL OF CHEMICAL AND ENERGY ENGINEERING

## Taught Course
- Master of Gas Engineering & Management
- Master of Petroleum Engineering
- Master of Science
  - Energy Management
  - Herbal Technology
  - Process Plant Management
  - Safety, Health and Environment

## Mixed Mode
- Master of Engineering
  - Bioprocess
  - Chemical
  - Environmental
- Master of Science
  - Polymer Technology
- Doctor of Engineering
  - Process Plant Management

## Research
- Master of Philosophy/Doctor of Philosophy
  - Chemical Engineering
  - Bioprocess Engineering
  - Environmental Engineering
  - Polymer Engineering
  - Petroleum Engineering
  - Gas Engineering

## AREAS OF RESEARCH

### Bioprocess Engineering:
- Biopharmaceuticals
- Biotechnology
- Biotransformation
- Cell Cultures
- Fermentation
- Ferro Fluids

### Chemical Engineering:
- Catalysis and Reaction Engineering
- Membrane Separation
- Process Control and Safety
- Process Modelling and Simulation
- Process Plant Management

### Environmental Engineering:
- Environmental System Modelling
- Groundwater Contamination
- Industrial Waste Treatment

### Gas Engineering:
- Advanced Material for Energy Application
- Burner Conversion
- Catalytic Combustion
- Gas Adsorbent Development
- Gas Metering and Calibration
- Membrane Fuel Cell

### Mixed Mode Research:
- Food and Biomaterial Engineering
- Genetic Engineering
- Membrane Technology
- Nanotechnology
- Tissue Engineering

### Research Areas:
- Separation Technology
- Sustainable Energy Management System
- Sustainable Product and Process Design
- Water Minimization

- Solid and Hazardous Waste Management
- Wastewater
- Water and Air Pollution

- Membrane Technology
- NGV Conversion System
- Optical Tomography
- Renewable Energy
AREAS OF RESEARCH

Petroleum Engineering:
- Cementing
- Corrosion
- Cuttings Transport
- Drilling Engineering
- Formation Damage
- Geostatistics and Geoscience Engineering
- Improved and Enhanced Oil Recovery
- Petroleum Geology

Polymer Engineering:
- Biopolymers
- Fibre-Reinforced Composite
- Microwave Processing of Polymers
- Modification of Polymer
- Plastic-Rubber Blend
- Polymer Additive and Adhesive

- Production Engineering
- Rock Mechanics
- Rock-Fluid Interactions
- Sand Control
- Separation of Oil-Water Emulsion
- Shale Problems
- Water Flooding
- Well Bore Stability

Polymer Nano Composites
- Polymer Synthesis and Characterisation
- PVC Technology
- Recycling of Plastics Waste
- Rheology of Polymer Melts

Note:
1. A comprehensive list of research areas can be found at the respective faculty websites.
2. Areas and disciplines for Masters by Research and PhD study other than listed above will be offered as Generic Programmes at faculties and schools.