MECHANICAL ENGINEERING
(MECHATRONICS SPECIALISATION)

Mechatronics is the synergistic integration of mechanics, electronics and computer engineering towards developing automated products and systems. Mechatronic Engineers provide solutions to robotics, automated manufacturing, smart products and other contemporary engineering problems.

It is a very modern and emerging area of engineering. Through mechatronics students gain a specialized knowledge on robotics, industrial automation, sensors, instrumentation, control systems and artificial intelligence. Mechatronic engineers possess a broad multidisciplinary knowledge in engineering together with hands on skills to implement such systems.

Mechatronics Specialization in Mechanical Engineering has a set of state-of-the-art subjects intended to provide the required knowledge and hands-on skills. The degree program includes lectures, labs, engineering design work and projects. The Mechatronics curriculum has been designed in consultation with the industry and academic experts in the field. Hence, the graduates could pursue careers in both academia and industry.

CAREER OPPORTUNITIES

- Mechanical Engineer
- Electronics Design Engineer
- Instrumentation Engineer
- Data Scientist/Big Data Analyst
- Entrepreneur
- Researcher
- Robotics Engineer
- Automation Engineer
- Control Systems Engineer
- Software Engineer
- University Lecturer

ENTRY REQUIREMENTS

Minimum of two "C" passes and one "S" pass in GCE Advanced Level (Local) in the Physical Science Stream (Combined Mathematics, Physics and Chemistry) in one and the same sitting and a pass at the Aptitude test conducted by SLIIT OR Minimum of two "B" passes and one "C" pass in GCE Advanced Level (Cambridge or Edexcel) covering Combined Mathematics, Physics and Chemistry in one and the same sitting and a pass at the Aptitude test conducted by SLIIT

YEAR ONE

SEMESTER 01

CE1020	Engineering Mechanics	03
ME1050	Introduction to Engineering Design and Communication	04
EC1022	Electrical Systems	03
MA1112	Algebra	04
EL1203	English Language Skills I	03
CE1913	Introduction to Sustainable Engineering	02

SEMESTER 02

ME1031	Engineering Skills Development	03
ME1060	Dynamics	03
MT1011	Engineering Materials	04
MA1122	Calculus	04
C1450	Fundamentals of Programming	03
EL1213	English Language Skills II	02

YEAR TWO

SEMESTER 01

EC2092	Foundations of Digital Design	03
ME2021	Mechanics of Machines I	04
EC2202	Electrical Circuits	03
ME2680	Computer Aided Drawing	03
MA2302	Engineering Mathematics III	03
ME2610	Mechatronics Design Project I	03

SEMESTER 02

ME2510	Electronics for Mechatronic Engineers	03
ME2541	Mechatronic Systems Engineering	03
ME2041	Thermodynamics	03
EC2212	Electromagnetic and Electromechanical Energy Conversion	03
ME2620	Manufacturing Technology	03
ME2650	Mechatronics Design Project II	03
	Humanities I	
ME2911	Industrial Training I	

YEAR THREE

SEMESTER 01

ME3512	Embedded Systems Engineering	03
ME3620	Control Systems	03
ME3660	Computer Aided Design and Manufacture	03
ME3531	Solid Mechanics and Mechanical Design	03
ME3110	Fluid Mechanics and Hydraulic Machinery	03
ME3580	Automation Systems	03
	Humanities II	

SEMESTER 02

EC3032	Power Electronics	03
EC3102	Advanced Digital Design	03
ME3081	Engineering Management	03
ME3091	Law for Engineers	03
ME3571	Mechatronic Systems Modelling	03
ME3610	Design of Mechatronic Systems	03
ME3911	Industrial Training II	

YEAR FOUR

SEMESTER 01

ME4500	Mechatronics Research Project	03
ME4600	Comprehensive Design Project	03
ME4521	Advanced Automation Systems	03
ME4071	Production and Operations Management	03
ME4132	Professional Practice	02

2 Elective Modules from the following:

ME4111	Industrial Management and Marketing	03
EC4012	Power Electronics and Drives	03
ME 4630	Artificial Intelligence and Machine Learning	03
ME 4650	Industrial Machine Vision	03
EC4432	Embedded Systems Engineering II	03
ME4091	Energy Technology and Sustainability	03

SEMESTER 02

ME4500	Mechatronics Research Project	03
ME4600	Comprehensive Design Project	03
ME4181	Industrial Engineering	03

2 Elective Modules from the following:

ME 4541	Robotics and Autonomous Systems	03
ME4150	Automatic Control II	03
ME 4550	Object Oreinted programming for Mechatronics Engineers	03
ME4220	Automotive Engineering	03
ME4670	Advanced Topics in Mechatronics Engineering	03
ME4570	Micro-Mechatronics	03

* Electives to be chosen with the prior approval of the Acadamic Department