

ECT - ELECTRICAL TECHNOLOGY

ECT 100 Create Simple Software Programs (2-2-4)

This unit is targeted at students who have no prior programming knowledge or experience. The aim of this unit is to help these students to gain basic programming skills and to learn how to use a number of special educational tools and system.

ECT 101 Explore AC electrical circuits (2-2-4)

This course is designed to provide students with a comprehensive understanding of electrical AC circuits, while emphasizing the importance of safe working practices. Students will learn how to analyze, measure, and solve electrical AC circuits effectively. They will gain knowledge and skills in defining and applying appropriate procedures to calculate and measure power factor in AC circuits. Additionally, the course will cover the behavior of three-phase circuits in special situations.

ECT 120 Explore combination logics (1-2-3)

The Unit provides an introduction to the devices, circuits and techniques of digital electronics. Candidates investigate the logical and electrical characteristics of logic gates. From given Boolean expressions logic gates are combined to form combinational logic circuits, which are built and tested. The binary number system used by digital circuits, the decimal number system and the hexadecimal number system are investigated along with methods of conversion between them.

ECT 121 Explore electronics (1-3-4)

The aim of this unit is to provide learner with skills and fundamental knowledge of basic industrial electronics and instrumentation. Learners will understand the operation of digital electronics and semiconductor. Learners will be able to demonstrate the knowledge of logic gates and operational amplifiers used in industrial measurement.

ECT 122 Maintain electrical circuits and systems (1-2-3)

The aim of this unit is to provide the learner with skills and knowledge to conduct preventive and corrective maintenance for an appropriate range of electrical equipment and circuits

ECT 123 Apply DC and AC machines in engineering (1-1-2)

This course's overall objectives are to develop student practical skills by learning while doing and provide hands-on training with AC & DC electrical machines equipment and systems. In addition to this, developing students' skills such as observation, measurement, recording data, data analysis, writing a technical report, presentation, and developing student team working skills.

ECT 124 Write programs using C++ (1-2-3)

This unit aims to introduce students to the fundamentals of the modern high-level programming language of C++. This unit also introduces students to the object-oriented programming in a modern object-oriented language such as C++. The unit relies on intensive laboratory exercises on programming concepts and applications.

ECT 210 Illustrate the fundamentals of Programmable Logic Controllers (PLCs) (1-3-4)

The overall objective of this unit is to develop students' skills in using PLC's in industry. It is designed to equip the novice with no prior PLC programming experience with the basic tools necessary to create a complete PLC program using ladder logic common to most current platforms. Using the Siemens S7300. Topics will include general controls, digital and analog IO, ladder logic programming, alarm / notification handling, HMI, emulation, best practices and more. In the end, Students will go through an entire, working PLC program and HMI line by line to solidify comprehension of the learnin

ECT 211 Develop leadership skills in work environment (1-1-2)

This unit helps learners to develop the skills and knowledge required to make a transition from an individual contributor to a leader. This unit applies to new and aspiring leaders to unleash the potential in themselves and others and cultivate high-performing teams. This supports the learners to become more versatile leaders who can mobilise others by immersing yourself in real-world leadership challenges, self-assessments, and 360-degree feedback from colleagues and peers.

ECT 212 Explore the knowledge and skills of codes and standards in electrical engineering (2-2-2)

This unit covers the use of standards, codes, and specifications as they apply to the various electrotechnology work functions. It includes the fundamentals for working with schematics, wiring, and electrical diagrams and equipment; cable/connections schedules; manuals, site, and architectural drawings.

ECT 220 Test and maintain electrical transformers (1-2-3)

The aim of this unit is to provide the learner with the skills and knowledge related to electrical transformers to be able to: test, install, operate, monitor, diagnose and repair electrical transformers within the scope of this unit

ECT 221 Create printed circuit boards (1-1-2)

Provide students with knowledge and hands-on skills in computer aided design (CAD) for printed circuit board (PCB), copper board fabrication & assembly and testing of functional electronic boards.

ECT 222 Analyse Electrical Machines (1-3-4)

This unit gives an understanding of a range of electrical devices such as motors and transformers. Learners will be introduced to the techniques used for AC analysis and the concept of magnetic circuits. They will study the constructional features, principle of operation, performance characteristics and applications of DC motors, single phase motors, three phase motors, synchronous generators and motors, and transformers.

ECT 223 Explore simulations of electrical circuits (0-2-2)

This unit provides a practice-oriented training of new key competencies in areas of electrical circuit simulation. The unit covers wide range of techniques in simulating circuits and provides direct experience in designing electrical circuits from simple to advanced stages using different simulation software.

ECT 224 Terminate and connect low voltage electrical cables (1-2-3)

This unit provides the learner with the skills and knowledge required to install and test electrical equipment. On completion of the course the learner will be able to:

- Terminate and connect signal cables
- Terminate and connect power cables under supervision
- Identify, select and use different types of cable support systems

ECT 225 Demonstrate AC and DC principles in electronic circuits (2-1-3)

This course aims to provide learners with the knowledge, skills and competencies to apply electrical laws to solve basic electrical and electronic problems. In addition to this, learners will progress to develop the knowledge and skills to solve more complex problems involving R – L and R – C DC series circuits and single phase AC circuits.