

Unit Description

SIBT
<p>IEPC101 Professional Communication</p> <p>This unit provides the opportunity for you to explore the academic and professional skills required in educational institutions and workplaces, including critical thinking, project and time management, ethics and safety, use of formal language, presenting and supporting arguments, interpreting visual data, and writing reports. You will learn about academic culture and processes, as well as the required conventions as they apply to your own academic research and writing.</p>
<p>ENGN130 Computing for Engineers</p> <p>It is an introductory programming course designed to help students understand the important role of programming languages in solving engineering problems. This unit provides students with fundamental knowledge and illustrates general concepts of programming. It demonstrates how complex engineering and mathematical problems can be solved using MATLAB, traditional programming languages C++, and Excel. By the end of this unit, students will be able to write programs that are well-documented, tested, and easy to read and modify.</p>
<p>MATH099 Foundations of Mathematics</p> <p>Foundations of Mathematics (MATH099) offers opportunities to acquire essential knowledge and skills in key areas of mathematics, including algebra, functions, calculus, and trigonometry. This unit serves as a foundational course for further studies and provides a basic understanding of the mathematical principles that underpin theories in fields such as engineering, technology, and mathematical statistics. You will develop problem-solving skills that can be directly applied to your area of study.</p> <p>This unit is designed for students who have not yet achieved a satisfactory level of proficiency in a calculus-based mathematics course at the high school level.</p>
<p>ENGN120 Materials Science and Engineering</p> <p>This unit introduces the fundamentals of engineering materials and their practical applications in engineering and modern society. It describes the properties, structure, processing, and selection of materials for a wide range of industrial applications. The unit also covers the social, economic, and environmental aspects and addresses the issue of materials sustainability.</p>
<p>MATH100 Mathematics A</p> <p>Mathematics A (MATH100) provides an opportunity to acquire essential knowledge and skills in mathematics, encompassing areas such as algebra, calculus, and trigonometry. This unit establishes a strong foundation for further studies in mathematical simulation and equips you with the mathematical understanding necessary for advanced exploration of engineering studies. You will gain practical experience in mathematical modelling of real-world physical problems relevant to your specific field of Engineering.</p>
<p>ENGN101 Physics</p> <p>ENGN101 introduces fundamental topics in physics that are essential for engineering disciplines such as electrical, mechanical, and civil engineering. The four modules in this</p>

unit cover principles of various types of motion, types of energy, oscillation, mechanical waves, heat, principle of fluid, optics, and the basics of electric circuits. This unit promotes knowledge, understanding, and awareness of scientific approaches that are indispensable in engineering fields. Throughout this course, you will improve your problem-solving, measurement skills, data analysis, and teamwork.

ENGN110 Principles of Electric Circuits

This unit covers fundamental topics in electric circuit analysis, which form the basis for most engineering degrees. It consists of four modules: Module 1: Ohm's and Kirchhoff's Laws; Module 2: Handy Circuit Analysis; Module 3: Basic Capacitor and Inductor Circuits; and Module 4: Transformers, Semiconductors, and Photovoltaics. You will have six practical sessions to apply the principles of these modules. These practical classes will also help you improve your teamwork and reporting skills.

MATH101 Mathematics B

MATH101 consists of two major fields in mathematics: Advanced calculus and linear algebra. In calculus, students will learn multiple variable functions, limits, continuity, differentiation, integration, sequences, series, and differential equations and their applications in engineering. Linear algebra consists of the study of linear systems, their solutions techniques, and the applications of these systems in engineering.

ENGN150 Fundamentals of Engineering Studies

This is the capstone unit of the Diploma of Engineering in SIBT which requires students to apply physical, mathematical, mechanical, and electrical concepts learned in previous sessions to an authentic, real-world engineering design problem. It describes the applications of mechanics-statics in different modern society engineering designs. You are required to become familiar with applying statics to the various systems in civil, electrical, mechatronics, mechanical, and sustainability engineering. The core part of this unit is the design project modules where you can apply some engineering concepts to hands-on projects. You will develop your skills in team collaboration, and improve your engineering sense, engineering drafting principles, sustainability development sense and technical reporting skills.