

English Communication (ENG 101):	English Communication is a first-semester ESP course designed for students who have successfully completed the Foundation Program and are now enrolled in the Associate Degree programs in the Royal Commission at Yanbu's colleges and institutes division. The course solely focuses on communication for the workplace. Students are exposed to the elements of business letters and to the basics of oral communication in professional settings. Students will write claim, and adjustment letters, and actively take part in group discussions, debates, and deliver effective oral presentations.
Calculus I (GSMA101):	Calculus I deals with the concept of differential calculus needed in mathematics, science, and technology. Topics include limits and continuity, differentiation of algebraic and transcendental functions, and partial differentiation. Emphasis is given to the applications of continuity, derivatives, and partial derivatives. Application problems will be solved during problem-solving sessions.
General Physics (GSPH101):	General Physics is an algebra-based course. The aim of this course is to provide students with basic principles of general physics to support applied fields. It deals with measurements, motion in 1-D and 2-D, dynamics, work and energy, fluids, heat, electrostatics, electricity, magnetism, and light. Laboratory activities reinforce the theoretical aspects of the course.
Physical Education (GSPE101):	Physical Education includes activities designed to improve students' physical health, well-being, and fitness levels, helping them achieve the fitness standards expected of college students. This involves various physical exercises and activities to promote fitness and health.
Electric Circuits I (ELET101):	Electric Circuits I provides the student with an understanding of the concepts and techniques in the characterization of electrical circuits and their components. This course introduces the student to the basic concepts of current, voltage, power, electromagnetism, basic laws, and theorems for the analysis of electric circuits. Students are familiarized with Ohm's law, KVL, KCL, and other basic

	theorems. Theory classes are supported by laboratory experiments to study, test, and verify the characteristics of these basic electrical concepts.
Computer Programming (ELET104):	Computer Programming introduces techniques to solve problems through computer programming using the high-level computer language 'C'. Students will learn problem-solving techniques, basic programming concepts such as input/output statements and control statements, use of sub-programs, and structured data types such as arrays, pointers, and structures. The course is supported by exercises in the laboratory.
General Chemistry (GSCH101):	General Chemistry is intended to provide students with the knowledge and skills for understanding the basic principles of chemistry. The course covers topics on atomic structure, chemical bonding, gases, thermochemistry, solutions, kinetics, chemical equilibrium, acids and bases, electrochemistry, and modern materials. The course is supported by digital media, both on CDs and online, and by experiments in the laboratory and in virtual chemlab using chemlab software.
Calculus II (GSMA102):	Calculus II deals with the concepts of integral calculus needed in mathematics, basic science, and technology. Topics include integration, techniques of integration, definite integrals and their applications, numerical integration, and differential equations.
English Composition (ENG 102):	English Composition is a second-semester ESP course designed for students pursuing their undergraduate studies in Mechanical, Electrical, Chemical, or Electronic Engineering at Yanbu Industrial College, part of the Colleges and Institutes of the Royal Commission at Yanbu, where the medium of instruction is English. Successful completion of ENG 101 - Communication is a prerequisite for this course. This course is part of the Associate Degree Program and focuses on written technical communication for the workplace. Students are exposed to the fundamentals of technical writing, produce graphs and charts, and participate in group work and effective oral presentations.

**Electrical Circuits II
(ELET102):**

Electrical Circuits II provides the student with an understanding of concepts of alternating current fundamentals and AC Circuits. The course includes topics related to three-phase systems, filters, two-port networks, and resonance. Practical circuits are analyzed using fundamental electrical laws and theorems to strengthen students' mathematical and analytical capabilities and help them understand and apply concepts in the implementation of these electrical circuits. Theory classes are supported by laboratory exercises to model, simulate, and test electrical circuits.

**Electrical Machines I
(ELET103):**

Electrical Machines I deals with the fundamentals of magnetism, electromagnetism, magnetic circuits, DC electrical machines, and single-phase transformers. This course covers principles of magnetism, magnetic field, and the study of magnetic behavior of ferromagnetic material, B-H curves, and hysteresis. It includes the study of construction, operation, and characteristics of DC machines (generators and motors), starting speed control, and applications of DC motors in industries. The theory, construction, and operation of ideal and practical transformers and autotransformers are also covered, supported by laboratory exercises.

Electronics I (ELET105):

Electronics I provides students with an understanding of the physical properties and principles of operation of some common solid-state devices. It introduces students to bipolar devices such as semiconductors, diodes, and transistors, as well as unipolar devices like junction field-effect transistors. Concepts of ideal op-amp characteristics and basic applications are also included. The course covers basic electronics circuits such as amplifiers, oscillators, and regulated power supplies, supported by laboratory experiments to study, test, troubleshoot, and verify the characteristics of these devices in typical electronic circuits.

Applied Statistics (GSST201):

Applied Statistics deals with statistical concepts and techniques commonly used in data analyses, particularly in science and technology. Topics include data collection and sampling techniques, frequency distributions and graphs, basic statistical measures of central tendency and variability,

	probability and counting rules, normal distribution, hypothesis testing, correlation and regression, reliability and failure data analysis, and quality control charts. Application problems will be solved during problem-solving sessions.
Industrial Safety (ENGT201):	Industrial Safety provides students insight into safer workplace practices, hazard recognition, hazard minimization, and risk management. The course covers industrial safety principles and practices in the workplace and environments in the mechanical, electrical, chemical, and industrial sectors. Topics include flash points, fire extinguishers, radioactive substances, pressurized containers, confined spaces, symbols, tags, and signs, along with personal protective equipment (PPE) and safety practices for handling chemicals in laboratories.
Basic Industrial Electronics (ELET201):	Basic Industrial Electronics introduces students to power electronic devices typically used in industry, including thyristors, DIACs, TRIACs, SCRs, UJT's, and PUTs. The course deals with fundamentals and applications of rectifiers, controllers, converters, and inverters, as well as high-power products like heat controls, light controls, and power supplies. Troubleshooting of power supplies is also included.
Digital Electronics I (ELET202):	Digital Electronics I introduces students to the basic understanding and application of digital electronics. It covers logic gates, TTL, number systems, codes, adder/subtractor circuits, Boolean algebra laws and rules, analysis of combinational logic circuits, DeMorgan's theorem, and K-map method. The course includes flip-flops, shift registers, counters, and an introduction to the basic microprocessor (8085), supported by laboratory exercises.
Control System Components (ELET203):	Control System Components covers the basics of process control systems, providing fundamentals in theory and practical work. It covers various types of control systems, their comparisons, applications, and the study of control system components and auxiliaries used in industries. Application of control system theory is explored using Simulink software, and the course includes PLC programming.