

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 (GSMA 101)	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 (GSPH 101)	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 (GSPE 101)	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.
Calculus II (GSMA 102)	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.
Applied Statistics (STAT 201)	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 (ENGT 201)	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.
Industrial Supervision (ENGT 202)	Provides knowledge on the role of supervision in industry, focusing on the responsibilities of supervisors and the skills required for effective management.
Electric Circuit Analysis (CSE 251)	Course Description This course covers history and overview of Electric circuits, Electrical Quantities, Resistive circuits and networks, Reactive circuits and networks, Frequency response, and Sinusoidal Analysis.
Computer Programming (CS 101)	Topics covered in this course include: an introduction to basic structured programming skills, basic data types and operators, console input/output, logical expressions, control structures, functions, arrays, pointers, strings, structures & file processing. The

	algorithms and problem solving, analyzing problem, designing solution, testing designed solution, fundamental programming constructs, translation of algorithms to programs are also covered. The laboratory work is designed to implement and support the theoretical concepts covered in the lectures.
Digital logic (CS 201)	Study of digital logic with an introduction to Boolean algebra, number systems and coding. Digital functions are implemented using logic gates, flip-flops and other integrated circuits. Emphasis is on analysis and design, including timing and gate level minimization techniques for combinational and sequential circuits. Coverage includes decoders, encoders, multiplexers, de-multiplexers, latches, flip-flops, registers and counters, ROM and RAM memory. Students are exposed to implementing complex designs using a Hardware Description Language and FPGAs.
Object Oriented Programming (ICT 102)	The Object-Oriented Programming course aims to introduce the students programming and software development skills using object-oriented methodologies. Students will be focused on topics like classes, methods, objects, overloading constructors and arrays. Students will be able to practically implement concepts of abstraction, inheritance, encapsulation and polymorphism. Students will be able to perform error and exception handling, use current API's and packages to design and develop an effective Graphic User Interface (GUI). The theory is supported by extensive laboratory exercises to practically implement the concept using object-oriented programming language and tools
Data and File Structures (ICT 103)	This course introduces the students, core concepts in data and file structures. Students will be focused on topics like structures, linked lists, stacks, queues, binary tree, sorting searching, hashing, sequential and random files. Students will be able to practically design and implement data and file structures using high level programming languages through laboratory exercises.
Computer Organization (ICT 201)	The purpose of this course is to introduce the students, concepts of microprocessor and microcomputer organization, programming input/output (I/O) ports and control hardware

	through assembly language programming, computer hardware structures including peripheral devices. The students will be focused on computer evolution and arithmetic, central processing unit, the control unit, memory organization, input-output organization and parallel organization. The course is supported by practical exercises in the laboratory using assembly language programming.
Network Technology (ICT 211)	The course aims to introduce the students, concepts of computer networking, LAN topologies, transmission media, LAN protocols, and LAN hardware standard, Network protocols, data communication concepts and OSI model, Introduction to WAN, wireless network and network security. Laboratory exercise includes practical exposure to LAN hardware components and network software. Also, the students will establish small LAN in the laboratory.
Network Administration (ICT 212)	The course aims to introduce students the basics of switches, router communication and configuration. Students will learn various network types, network media, switching and routing fundamentals, TCP/IP Suite, IP addressing and subnetting technologies. Students will be able to manage and configure switch and router operating systems, and managing network environments. It is well supported by hands on exercises in laboratory
Wireless Network Technology (ICT 213)	This course introduces the latest wireless networking technologies, wireless communication building blocks, Wireless hardware, wireless network services and protocols, understand the concepts behind RF propagation, operating range and security of wireless network. The students will get practical knowledge in wireless network implementation, and terminologies used in wireless networking. The course is supported by exercises in the laboratory.
Advanced Network Administration (ICT 214)	The course introduces switching configurations, routing protocols including static routing, dynamic routing, OSPF and EIGRP protocols. It covers internet technologies, Network services, Network security, Cloud Computing and Virtualization. This course also guides the students to manage and troubleshoot network data traffic. It is well supported by hands on exercises in laboratory.
Enterprise Network and Security	The course provides an overview on history and examples of computer network security, security

(ICT 215)	definitions, and basic security principles. The course covers security policies, procedures, vulnerability assessment, and risk management. The course discusses physical, communication, and infrastructure security issues. It describes important matters such as security protocols, access controls, authentication technologies, cryptography techniques, external and internal firewalls, VPN, computer viruses, and social engineering.
Computer Troubleshooting and Maintenance (ICT 216)	This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation of system software, commercial programs, system configuration, and device drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair nonfunctioning personal computers.
System Administration (ICT 222)	This course includes system administration concepts, server hardware configuration, install and deploy Network Operating system (NOS), managing network software, administer NOS management. This course also focuses on understanding of file system, process, user and disk space management. Also, it focuses different server roles such as file and print server, database server, DHCP server and DNS server, system accounting and logging, system backup and restores internal and external storage technologies.
Computer Network Tech Co- op Training (ICT 310)	This training program lasts for 14 weeks and is done at the end of the academic program.