EGN - GENERAL ENGINEERING (EGN)

EGN 1133 Design Thinking in Technology (1-4-3)
Covers the design thinking methodology to identify and address engineering problems. Includes solid modeling, rapid prototyping, understanding end users, their unarticulated needs, and creating alternative solutions. Focus on creativity, identify potential solutions, and innovation of new products and work processes. Students will apply design methodologies and innovation tools in an engineering technology problem, build and test it to gain the spirit and initiative of the course.

EGN 2101 Computer Aided Drafting (0-2-1)
Introduces principles of CAD and free hand for drafting two and three dimensional multi-view and sectional representations of geometric shapes.
Prerequisites: EGN 1133

EGN 2233 Engineering Mechanic Fundamentals (3-1-3)
Introduces principles of force systems, stresses, fluids, thermal systems, and motion and power transmission.
Prerequisites: PHY 1103

EGN 2712 Applied Programing for Engineers (0-4-2)
Use algorithms, pseudocode, and flowcharts in the design process of computer programs. High level programming languages consist of primitive data types, operators, flow control, looping structures, error handling, functions, and array data structures, which may be used in the implementation of properly documented programs for engineering technology solutions.
Prerequisites: ICT 2013 or MTH 1203

EGN 2806 Work Placement I (0-40-6)
Engage in practical work experience in an environment that develops skills and knowledge. Experience the activities in aviation maintenance, design industry, related aviation industry such as supply and logistics, test and calibration. This initial work placement may be in other engineering fields. Document journal entries explaining placement objectives and critique of the participant attitude, behavior and accomplishment.

EGN 3012 Project Management (2-1-2)
Introduces the necessary tools and information to manage engineering projects and resources. Covers a range of principles and practices in initiating, planning, staffing, coordinating and completing a project within the triple constraint of schedule, budget, and performance. Examines topics such as work breakdown structure, estimating, project networks, risk management, resource allocation, cost planning and makes use of available industry tools, such as Microsoft Project, to assist in managing real life projects.

EGN 3212 Economics for Engineering (2-1-2)
Covers basics of economic analysis for quantifying engineering business decisions. Includes time value of money; analysis of single and multiple investments; comparison of alternatives; capital recovery and tax implications. Advanced analysis of certainty; uncertainty; risk analysis; public sector analysis and break-even concepts related to engineering projects. Demonstrate competency in key economic analysis using hands-on tools like case studies.

EGN 3333 Health Safety and Environment (3-1-3)
Understand and describe common industrial procedures for employee health, safety and environment. The course covers the identification and control of hazards, occupational health, fire protection and prevention, safety management and ethics, safety regulations, safety inspection, accident investigation, personal protective equipment, and safety report documentation. Discuss environment protection, accident prevention, effective committee operations, accident investigation, and safety training.
Prerequisites: EGN 1133

EGN 3806 Work Placement II (0-40-6)
Gain relevant engineering experience in an actual working environment to provide an opportunity to develop and apply professional work ethics and practices. Transfer of engineering skills learned at college to the workplace is a major feature of this course.
Corequisites: EGN 2806

EGN 4333 Renewable Energy Systems (3-1-3)
Covers renewable energy sources and systems for conversion of various forms of energy into electrical power are essential for sustainable systems. Includes common energy sources such as wind, solar, nuclear, fuel cell, hydro, biomass and geothermal are described by operational principles, block diagrams and construction. Introduces factors affecting generation, efficiency and integration of power sources to the grid from wind and solar-based energy systems.
Prerequisites: PHY 1203