SCIENCE (SCIE)

SCIE 1100 Credits: 3
Engineering, Tech & Society Total Hours: 60
This course provides an introduction to the practice of engineering, surveying its history and its current state. The social and political aspects of engineering decisions will be illustrated by a number of case studies. The course also includes examples related to the field of computer science.
Pre-requisite(s): Pre-calculus 12 with a minimum 'C+' grade or equivalent; one of Physics 12, Chemistry 12 or Biology 12 with a minimum 'C+' grade or equivalent; SCIE 1110 taken prior or concurrently

SCIE 1110 Credits: 3
Professional Communication Total Hours: 60
This course introduces engineering and computing science students to the principles of effective communication with special emphasis on the writing process, informative and persuasive writing, research papers, oral presentations, and resumes/cover letters. The course also explores current social and ethical issues in engineering and computer science.

SCIE 1151 Credits: 3
Engineering Graphics & Design Total Hours: 60
This course teaches the fundamentals of graphical communication in order to help students think and communicate visually in the context of engineering design. The course focuses on representing three-dimensional objects in two dimensional space using various views, such as isometric, multi-view sketches, and section view, and auxiliary views. Tolerancing and dimensioning, as well as notation for manufacturing will also be discussed. Through the use of computer-aided design (CAD) tools, students will apply the theory to real-world problems. This course also teaches fundamentals of schematics and printed circuit board design. Students will have the opportunity to create circuits in CAD tools and will understand various conventions and terminology surrounding circuits. This course will also cover basic architectural and structural plans and elevations. Time permitting, some machine parts, bolts and other common mechanical engineering pieces will be reviewed. This course is part of the full-time UT Engineering program.

SCIE 1180 Credits: 3
Intro to Engineering Analysis Total Hours: 60
This course introduces students to problem modeling and simulation in engineering practice using one of the main engineering simulation tools - MATLAB. The course will present the basics of MATLAB programming, including MATLAB's data types, flow control, writing external functions, etc. Using MATLAB, students will learn to implement and analyze various methods and techniques of data analysis applied to real-world examples from a range of engineering disciplines, such as signal and image processing, communications engineering, robotics, etc. At the same time, engineering examples will attempt to illustrate how the concepts from the first-year math courses (Calculus 1 and 2, Applied Linear Algebra) are actually used in engineering practice.
Pre-requisite(s): MATH 1100 or equivalent; CMPT 1010 or equivalent; MATH 1221 or equivalent