

## CNM

### **CNM 120 Intro Engineering Sci and Calc 4.0 UNITS**

This is a preparatory class for the students who intend to pursue a career in Construction Management or in the field of Civil Engineering. The course develops an understanding of the science and mathematics involved in engineering. Students learn to perform mathematical calculations used in construction and project management. Students analyze physical laws and how to apply that analysis in engineering fields.

### **CNM 201 Introduction to Basic Structures 3.0 UNITS**

This course provides students with a basic knowledge of structural analysis and design for buildings, bridges and other structures. Students investigate the behavior of structural systems and elements through design exercises, case studies, and load testing of models. Students design structures using timber, masonry, steel, and concrete and gain an appreciation of structural design, with an emphasis on environmental impact associated with large scale construction.

### **CNM 222 Construction Project Management 4.0 UNITS**

Students learn the processes, techniques and procedures involved in a construction project from conception to completion. The course provides an opportunity to learn about common construction methods and materials involved. Students also learn technical skills involving in the areas of cost control, scheduling, risk analysis, delay analysis, administrative procedures, safety regulations, labor relations, and record keeping.

### **CNM 220 Construction Codes 3.0 UNITS**

This course provides students with a theoretical understanding of how to examine new and old structures to ensure they are built properly and follow applicable building codes and safety regulations. This course provides an introduction to the basics of working in the building inspection field with the knowledge of construction codes, required documentation protocol, and standard practices.

### **CNM 205 Surveying and Site Planning 3.0 UNITS**

Students learn site development, site selection, site analysis, site plans, designs, and approval processes. Students are introduced to the principles of construction surveying, project layout, and operation of surveying equipment. Topics include: interaction of surveying

with other disciplines, measurements, concepts, accuracy, precision, and levelling; methods for measuring distance, elevation angles, bearings and azimuths using level instrument and transits; traverses and computations; basic topography and mapping. Laboratory and fieldwork experiences include a field trip to a nearby construction project to review equipment site planning and surveying procedures; and a team project to review steps involved in site planning through completion of two types of construction sites: a traverse and an as-built survey.

### **CNM 202 Const. Materials and Tests 4.0 UNITS**

Construction Procedures, Materials and Testing is a course in which construction systems are discussed along with material stresses and other engineering concepts. The course provides an introduction to materials used in construction as well as techniques used in blueprint reading for building construction. Students learn about construction methods through demonstrations and lab experiments. The main emphasis is on structural steel, masonry, wood, reinforced concrete, and combined structural systems. Students develop understanding of the construction process with different materials. They understand the relevant engineering and mathematical relationships.

### **CNM 225 Cost Estimation 3.0 UNITS**

Students acquire a basic understanding of managing a project's cost. The course introduces the types of cost estimation from the conceptual design phase through the more detailed design phase of a construction project. In addition, the course highlights the importance of controlling costs and how to monitor project cash flow. Students develop a break-even analysis of construction tasks in a project.

### **CNM 230 Project Planning and Control 3.0 UNITS**

Students develop a basic understanding of project management by comparing alternative designs and construction plans, methods of contracting, design management, and forms of information flow. Activities include preparing master plan schedules, tendering procedures, contractor cost calculations, and bid preparation. Students learn to budget, to plan and schedule construction, to manage production, and to employ project controls. Students acquire a basic level of proficiency in appropriate software.