

## **Applied and Industrial Mathematics major / Mathematics first teachable – Computer Studies second teachable**

The order and timing of courses may be changed subject to availability and prerequisite requirements.

Program details:

### **YEAR 1**

Semester 1 (15 credit hours)

BIOL 1010U Biology I

CHEM 1010U Chemistry I

CSCI 1000U Scientific Computing Tools

MATH 1000U Introductory Calculus or MATH 1010U Calculus I\*

PHY 1010U Physics I or PHY 1030U Introductory Physics\*

Semester 2 (15 credit hours)

BIOL 1020U Biology II

CHEM 1020U Chemistry II

EDUC 2900U Introduction to Teaching and Field Experience I (10 days)

MATH 1020U Calculus II

PHY 1020U Physics II

\*All students who have completed grade 12U Advanced Functions and Introductory Calculus or 12U Calculus and Vectors should take MATH 1010U and PHY 1010U. Students without one of these high school courses or equivalent are directed to take MATH 1000U and PHY 1030U.

### **YEAR 2**

Semester 1 (15 credit hours)

MATH 2010U Advanced Calculus I

MATH 2050U Linear Algebra

CSCI 2110U Discrete Structures in Computing Science

STAT 2010U Statistics and Probability for Physical Science

One non-science elective

Semester 2 (16.5 credit hours)

CSCI 1030U Introduction to Computer Science

EDUC 2901U Field Experience II (Practicum - 15 days)

EDUC 3752U Learning and Human Development

MATH 2020U Advanced Calculus II

MATH 2060U Differential Equations

MATH 2072U Computational Science I

### **YEAR 3**

Semester 1 (15 credit hours)

CSCI 2010U Principles of Computer Science

CSCI 2050U Computer Architecture

EDUC 3612U Contemporary Educational Practice

MATH 3020U Real Analysis

MATH 3040U Optimization

Semester 2 (16.5 credit hours)

EDUC 4902U Field Experience III (Practicum - 20 days)

MATH 3050U Mathematical Modelling

MATH 3060U Complex Analysis  
MATH 3070U Algebraic Structures  
One non-science elective  
One science elective

#### **YEAR 4**

Semester 1 (15 credit hours)  
MATH 4010U Dynamical Systems and Chaos  
MATH 4020U Computational Science II  
MATH 4060U Industrial Mathematics  
MATH 4041U Topics in Applied Mathematics I or  
One elective  
One non-science elective

Semester 2 (15 credit hours)  
CSCI 2020U Software Systems Development and Integration  
MATH 4030U Applied Functional Analysis  
MATH 4050U Partial Differential Equations  
MATH 4400U Thesis Project  
MATH 4042U Topics in Applied Mathematics II or  
One elective

#### **YEAR 5**

Semester 1 (16.5 credit hours)  
EDUC 3400U Technology in I/S Education  
EDUC 4381U Analysis and Management of Classroom Behaviour  
EDUC 4900U Field Experience and Practicum (33 days)  
CURS 3410U or CURS 3610 Math Camp  
CURS 4000U Core Curriculum Methods I  
Curriculum Studies I from first teachable  
Curriculum Studies I from second teachable  
One education elective

Semester 2 (15.75 credit hours)  
EDUC 3801U Teaching for Individual Needs and Diversity  
EDUC 3900U Language across the Curriculum Areas  
EDUC 4240U Action Research and Reflection  
EDUC 4901U Field Experience and Practicum (28 days)  
CURS 3611U Science Workshops  
CURS 4001U Core Curriculum Methods II  
Curriculum Studies II from first teachable  
Curriculum Studies II from second teachable  
One education elective

#### **Note 1: Education electives**

Students may take their education electives prior to Year 5 only if they have completed Year 2 requirements and have a GPA of 2.7.

#### **Note 2: Thesis project course**

Students who meet the requirements will take MATH 4400U Thesis Project in year four.

#### **Note 3: Topics in Applied Mathematics I & II**

At least one of MATH 4041U or MATH 4042U must be completed.