COMPUTER SOFTWARE AND DATABASE DEVELOPMENT

Program Code: CSAC (International)
Length of Program: Two-Year Co-op
Awarded Upon Completion: Ontario College Graduate Certificate
Starts: Sep (Open) Jan (Open)

The Computer Software & Database Development Ontario College Graduate Certificate Program offers students the opportunity to study the most current trends in website development, computer programming, database, project management and mobile development. This intensive, two-year program concludes with a work term for eligible students.

Web technology topics include HTML5, CSS5, JavaScript, AJAX, JSON, and NodeJS. Students work with server-side programming languages including Microsoft C#.NET, Python and Java. In the database components, students perform all aspects of database design and work with SQL/NOSQL on several database management systems (DBMS). Students demonstrate their knowledge and skills by developing solutions to real world three tier (client, server, database) problems.

Major coursework is assigned as term projects that span entire terms allowing students to actively engage in the evaluation, design, and implementation of real-world software applications. As a result, students develop deep content knowledge as well as critical thinking, collaboration, creativity, and communications skills.

The widespread use of computer technology in all industries, from manufacturing, transportation, construction, education, health and financial institutions means that computer programmers are the key people shaping the solutions of today and tomorrow. Graduates us their problem solving and critical thinking skills to analyze business and industry requirements and design, develop and implement real life, database driven, enterprise web applications.

Program Capabilities outline what skills students should possess as they progress through each term/year of their program.

Co-op students and employers will find this information most useful and can reference this capabilities document to ensure students are gaining the experience they need to fulfill the program requirements.

The student will be capable of the following skills by the end of the term indicated:

Upon Graduation

- Knowledgeable in the development of three-tier Web applications that utilize the MVC architecture.
- Knowledgeable in the implementation of Web applications that incorporate HTML5, CSS3, JavaScript, jQuery, AngularJS, JSON, and AJAX
- Knowledgeable in the design, modeling, implementation, and maintenance of databases using Oracle, MySQL, and DB2
- Knowledgeable in the development of applications that utilize Oracle PL/SQL
- Knowledgeable in the structured approach to program design, development testing and debugging of computer programs.
- Knowledgeable in the development of computer programs in a pedagogically sound programming language
- Knowledgeable in the development of three-tier Web applications using programming languages such as Java, C#, and RPGLE
- Proficient with several IDE software development environments
- Knowledgeable in the installation, configuration, and administrative tasks necessary to support the Linux environment.
- Knowledgeable in the utilization of project management tools and software to manage a project.
- Knowledgeable in the analysis of problem situations to define the specifications of a system based on requirements.
- Knowledgeable in the development of mobile applications for Android

Term 1
CSD-1113 Web Technologies
CSD-1133 Problem Solving/Problem Logic
CSD-1233 Python Programming
CSD-2206 Database Design and SQL
CSD-XXX3 Introduction to Project Management
COM-3013 Communications for I.T.

Term 2
CSD-2214 Web Technologies II
CSD-2354 Programming C#.NET
CSD-3464 Programming Java SE
CSD-3444 Emerging Technologies
CPP-1001 Co-op Preparation

Academic Break Academic Break

Term 3
CSD-3313 Web Technologies III
CSD-3354 Web Applications Using C#.NET
CSD-4464 Programming Java EE
CSD-4203 Database Programming
CSD-3183 Mobile Development

Term 4
CPL-1049 Co-op Work Term*
- OR -
CPL-5559 Applied Project