INSTITUTE OF
TECHNOLOGY
DEVELOPMENT
OF CANADA

2021

Open Source Web Development Program outline

Head quarter and Vancouver campus:
475 Granville Street, Vancouver, BC, V6C 1T1
Vernon Campus:
3104 – 30th Ave, Vernon, BC, V1T 2C2
Phone: +1(604) 558-8727
Toll Free: +1(888) 880-4410
Fax: +1(888) 881-6545
Email: studying@itcanada.ca
Web: https://www.itdcanada.ca

Canadian (Local) Tuition	**$15500.00**
International Tuition	**$20150.00**
Canadian (Local) Registration fee Non- refundable	**$100.00**
International Respiration fee Non- refundable	**$350.00**
Apply online for scholarships/grants if available https://applynow.itdcanada.ca	

PROGRAM DESCRIPTION

This **diploma** program focuses on preparing students to work as a programmer specializing in open source tools, placing them at the core of the digital revolution era and creating a network effect of flexibility and affordability for companies that expect to create a customized customer experience.

LEARNING OBJECTIVES

Upon completion of this program the successful student will have reliably demonstrated the ability to apply theoretical and practical skills in Content Management Systems, Perl and Python and Ruby on Rails.

ADMISSION REQUIREMENTS

• Grade 12 graduate or mature student status (British Columbia, 19 years or older)
• Meet minimum English language proficiency requirements, only one of the followings

1. IELTS: 5.5 (or better) or
2. TOEFL (paper): 520 (or better) or
3. TOELF (CBT): 190 (or better) or
4. TOEFL (IBT): 70 (or better) or
5. Cambridge: CAE (or better) or
6. Canadian High School Diploma or
7. English 12 graduation certificate from a Canadian high school or
8. Canadian LINK or ELSA program level 4 certificate
9. CELPIP (Canadian English Language Proficiency Index Program) 3H or better
10. CLB (Canadian Language Benchmark) 6 or better
11. Pre-Intermediate (or better) Certificate from a Language Canada accredited school or
12. Pre-Intermediate (or better) Certificate from any language school accredited by local authorities worldwide or
13. Two years study in an English program that leads to a degree worldwide or
14. BA, MA or PHD in English Language from a university worldwide or
15. Student has TESOL, CELTA or DELTA certification or
16. The student has lived and worked in an English-speaking country longer than 10 years or
17. The student has spent at least two years studying in a secondary, post-secondary or higher education school in any program in a system where English is the official language of instruction or
18. The student has passed ITD Canada's English Assessment Test (online with a proctor or in person) at the pre-intermediate level.

English language proficiency test scores will only be accepted if they are dated within the last 4 calendar years from the programs start date.

PROGRAM DURATION

Total instructional hours	**960**
Total Co-op hours	**0**
Total program hours	**960**
Total program length (weeks)	**48**

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ITD

GRADUATION REQUIREMENTS

- Successful completion of all program courses.
- Successful completion of program coop.

CAREER OPPORTUNITIES

Upon successful completion graduates will be able to secure employment in a wide variety and sizes of businesses such as Open Source Application Programmer, Programmer Analyst, Software Developer, Web Programmer, Web Developer

PROGRAM BREAKDOWN

Course No.		Hours
ICR100	Information Technology Essentials	40
ICR110	Problem solving and analytical thinking	40
ICR120	Markup Essentials	60
ICR130	Scripting for Web Development	60
ICR140	Databases Design and Modeling	40
GRD 110	Digital Imaging I	40
IOW200	Content Management System	120
IOW210	Scripting Frameworks and Libraries	80
ITN400	Markup and Data Serialization	40
IOW300	Full Stack Web framework	200
IGP330	Open Source Scripting	60
IGP420	Portable Programming	120
IOW400	Backend Web Development	60

DELIVERY METHODS

☒ In-class instruction

☒ Distance education

☒ Combined delivery (both in-class and distance)

ICR100 Information Technology Essentials
This is an introductory to the basics of computer hardware, especially those components that are used frequently by programmers including RAM and CPU. Students will also be introduced to operating systems.

ICR110 Problem Solving and Analytical Thinking
Understanding the language, grammar and syntax of a programming language is key to the application of that language in solving programming problems. All programming languages have been created around a fundamental set of language theories and conventions.
This course introduces the student to theory and practice of programming and programming logic. This course does not introduce the student to a specific programming language but rather to the basic language, grammatical, and syntactical constructs and logic found in all programming languages. Students will solve programming problems using pseudo-code.

ICR120 Markup Essentials

This course will introduce students to web page and simple website infrastructure. Students will construct simple webpage and websites using authoring tools, HTML 4.0 and JavaScript. Student will learn basic programming principles and best practices. Students will use their programming skills to enhance a web site they have developed by building simple interactive functionality into their webpages.

ICR130 Scripting for Web Development

Students will learn how to create all of the key components required in a 21st century commercial web site. Students will learn how to apply your HTML, CSS, and JavaScript skills in a commercial context.

ICR140 Databases Design and Modeling

This is an introductory database course. Students will be introduced to the role and function of databases and to accepted dbase design and development methodologies. You will also be introduced to database software manipulation systems using Classic ASP and Microsoft Access tools.

GRD110 Digital Imaging I

This course introduces students to industry standard digital imaging software – Photoshop. Students will learn the fundamentals of digital image manipulation, editing tools and techniques.

IOW200 Content Management System

In a rapidly changing world, the need for online publishers to keep up with the needs and expectations of their site visitors is paramount. Today, many cutting edge web publishers use content management systems (CMS) to allow them to instantly and dynamically update web pages and properties as new content becomes available so that every visit to a site is engaging, informative, and meaningful. CMS systems provide content developers with an option of creating powerful and highly functional websites, landing pages, e-commerce features, social media tools and a wide range of other specialized and powerful function, many which eliminate the need for those developers to learn more traditional web development languages and coding like HTML, PHP, CSS and JavaScript. This introductory course explores the use of open source web-based content management systems such as Joomla, Moodle, WordPress, and other online software solutions, which can be used to create dynamic and flexible web sites and landing pages. Learners will explore the fundamentals of planning dynamic websites, CMS database management, developing CSS-controlled site templates, and creating database driven websites through the planning and creation of their own topic-based sites.

IOW210 Scripting Frameworks and Libraries

Ajax is an important technology for front end web developers. Ajax, which is short for Asynchronous, JavaScript and XML, lets you use JavaScript to talk to a web server, retrieve information from the server, and update the content of a webpage without leaving the current page, or loading a new webpage. Ajax requests are triggered by JavaScript code; your code sends a request to a URL, and when it receives a response, a callback function can be triggered to handle the response. Web developers use Ajax for different purposes, to inject new HTML into a webpage, to receive JSON data from a web server, to post form data to a database. Unfortunately, different browsers implement the Ajax API differently. Typically this meant that developers would have to account for all the different browsers to ensure that Ajax would work universally. Fortunately, jQuery provides Ajax support that abstracts away painful browser differences.

ITN400 Markup and Data Serialization

Extensible Markup Language is a markup language that defines a set of rules for documents in a format which is human-readable and machine-readable. XML is a software- and hardware-independent tool for storing and transporting data.
In this course students learn how to create XML files and how to extract XML data in a programming language. Students also learn to transfer data in between computers using XML files.

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IOW300 Full Stack Web Framework
The Ruby on Rails Developer Course provides a thorough introduction to Web Applications Development using the Rails framework. Ruby on Rails has rapidly become one of the most powerful tools for building web applications for start-ups and existing software houses. Some of the top sites using Ruby on Rails are Basecamp, Twitter, Shopify, Github, LivingSocial, Groupon, Hulu, Airbnb, Yellow Pages and much more. This course provides a very structured approach of teaching Rails and how to use Rails to implement ideas. It teaches the techniques to make the code work for the student. A big focus of this course is practice and understanding fundamentals. Most of the code is done from scratch limiting the use of shortcuts, generators, absolutely no scaffolding or "magic". This is also accomplished by diving right in and using a pre-configured Ruby on Rails development environment in the cloud eliminating time required to setup a local development environment and the roadblocks that go with it.

IGP330 Open Source Scripting
Hypertext Preprocessor (PHP) is one the popular open source programing languages for creating dynamic web sites. PHP is usually created using a MySql database. In this course students will learn how to install PHP and MySql on IIS and how to create dynamic web sites using PHP and MySql.

IGP420 Portable Programming
In this advanced course students will explore the Java language along with related Java classes from simple applets to advanced servlets. In this course students will also learn object oriented terminology and concepts. Students will learn to create classes and implement inheritance and polymorphism.

IOW400 Backend Web Development
CGI or Common Gateway Interface is a standard way for web servers to interface with executable programs installed on a server that generate web pages dynamically. Such programs are known as CGI scripts or simply CGIs; they are usually written in a scripting language, but can be written in any programming language. This course is about working with two very similar scripting languages, Perl and Python. Students will learn how to create server side scripts in Perl and Python in order to create dynamic web sites, They also learn database connectivity in both scripting languages.

Methods of Evaluation
Course grading is indicated on each course outline. Generally assessment will consist of quizzes, exams, and assignments.

Required Course Material
Not all courses may have textbooks. Textbooks are listed on the course outline. Textbooks may not be available through the college.

Equipment
Computer and requisite software are provided at the college. No other equipment is required unless otherwise indicated on the course outline.

Program
Course currency and relevancy may change depending on the requirements of industry. The school may make changes at any time. Changes will be effective when made.

Other
For proof of *English Language Proficiency* please refer the Student Handbook.