

**WESTERN UNIVERSITY
FACULTY OF ENGINEERING
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING**

ECE 9065 – Web Application Development 2016-2017

Objectives:

Provide hands-on experience in designing, developing and deploying Web Applications using state-of-the-art technologies as well as managing and securing the infrastructure required for web applications.

Prerequisites:

Graduate standing in M.Eng Program (M.E.Sc or Ph.D. students are not eligible), Programming knowledge, familiarity with HTML and JavaScript.

Textbook

Fundamentals of Web Development, Randy Connolly and Ricardo Hoar, Pearson, ISBN-10: 0133407152

Topics:

HTML, CSS, JavaScript, XML, HTTP, Server setup, security and management, Database server (both SQL and NoSQL) setup and management, server-side scripting with PHP and Node.js, Web applications using frameworks such as Express and Angular.

Specific Learning Objectives:

1. Introduction to source code management with Git [1 week]
Using Git to manage code with local and online repositories.
At the end of this section, students will be able to:
 - a. Create and manage Git repositories. Branching and merging with Git.
 - b. Contributing and publishing code to online repositories.
2. Review network basics and world-wide web [4 weeks]
HTML, CSS, JavaScript, XML, URL notation and Unicode.
At the end of this section, students will be able to:
 - a. Identify the use of these technologies in a given web application.
 - b. Apply these technologies and create web pages to illustrate their use.
3. HTTP protocol [2 weeks]
Basics of HTTP protocol, HTTP servers and clients.
At the end of this section, students will be able to:
 - a. Identify key elements of HTTP protocol.
 - b. Describe the sequence of messages between client and server for all HTTP verbs.
 - c. Serve static HTML pages with client-side JavaScript.
4. Web technologies [6 weeks]
HTTP protocol and early web applications, web service fundamentals, ReST-full web services,

creating and consuming web services with Node.js, Express and Angular frameworks.

At the end of this section, students will be able to:

- a. Define the ReST architecture in implementing a web services.
- b. Create a ReST-full web service.
- c. Create a modern web application which consumes other web services using Node.js, Express and Angular.

Contact Hours:

3 lecture/lab hours/week. Monday 9:30-12:30 in TEB 244.

Evaluation:

10% Class participation.

40% Laboratory assignments.

50% Final Project.

All reports must be PDF files. Files must be submitted separately and not as a zip or in any other archive form. Submissions must always be on Owl. Email submissions will be discarded. Failure to follow lab submission instructions may result in penalties of up to 10% of each assignment.

Class participation consists of attendance as well as participation in class discussions and contributing your view points.

Attendance

Any student who, in the opinion of the instructor is absent too frequently from class or laboratory periods in any course, will be reported to the Dean (after due warning has been given). On the recommendation of the Department concerned, and with the permission of the Dean, the student will be debarred from taking the regular examination in the course.

Cheating:

University policy states that cheating is a scholastic offence. The commission of a scholastic offence is attended by academic penalties, which may include expulsion from the program. If you are caught cheating, there will be no second warning.

Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar). Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage of text from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations.

The University of Western Ontario uses software for plagiarism checking. Students may be required to submit their written work in electronic form for plagiarism checking

Course Instructor:

Prof. Jagath Samarabandu , TEB 351, Department of Electrical and Computer Engineering
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Consultation Hours:

Fridays 9:30-11:30 in TEB 351 or by appointment.