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CSTP 2107: Advanced Internet Programming & Web Applications

EFFECTIVE DATE

September 2019

DEPARTMENT

Computer Systems Tech Diploma

DESCRIPTION

In this course students will learn about advanced web technologies which provide the possibility of building fully dynamic web-centric applications. This is an intensive, hands-on, project-based, team-oriented course in which students in a team of 2-4 become familiar with "full stack" web development. This course introduces new database models such as NoSQL or MongoDB in the context of developing an end-to-end web application development using MVC architecture. The technologies used focus on a current modern stack, such as MEAN (MongoDB, Express.js, AngularJS), LAMP (Linux, Apache, MySQL, Python), and others. This course requires students to learn to program in Javascript in various environments. By the end of this course, students will be able to participate in the development of secure data-driven business web applications in various domains.

CREDITS

4.0

YEAR OF STUDY

2nd Year Post-secondary

PREREQUISITES

CSTP 1206 Introduction to Internet Programming & Web Applications CSTP 1304 User Interface Design

COREQUISITES

None

COURSE LEARNING OUTCOMES

Upon successful completion of this course, students will be able to:

- Setup a development environment and tool-chain as required by the chosen development stack
- Develop secure data-driven business web applications
- Develop completely dynamic web applications
- Use advanced HTML, CSS, and JavaScript techniques to develop client-side web software
- Develop client-side Single Page Applications using a technology like Angular, React, or Ember

- Deploy web applications to the cloud (e.g. AWS, Azure)
- Expose data through Web API so that it can be consumed from Single Page Applications
- Implement token and/or session based authentication
- Configure and manage a web server (such as Apache) that are compatible with the stack being used in the course
- Manage the code base / distribution using modern version control systems

PRIOR LEARNING ASSESSMENT & RECOGNITION (PLAR)

None

HOURS

Lecture: 40

Lab: 40

INSTRUCTIONAL STRATEGIES

Instructional strategies include classroom lectures, demonstrations, group discussions, computer lab and hands-on practical work.

GRADING SYSTEM

Letter Grade (A-F)

PASSING GRADE

C

EVALUATION PLAN

| Type | Percentage | Assessment activity |
|---------------|------------|--|
| Project | 60 | One project per team, mark is assigned based on progress at each step and goals achievements |
| Quizzes/Tests | 10 | |
| Participation | 10 | |
| Final Exam | 20 | |

COURSE TOPICS

- Javascript
- Full stack development

- NoSQL databases
- Cloud services
- Session-based authentication
- Web server management
- Data-driven web applications
- Secure data communication with server

LEARNING RESOURCES

None

Notes:

- Course contents and descriptions, offerings and schedules are subject to change without notice.
- Students are required to follow all College policies including ones that govern their educational experience at VCC. Policies are available on the VCC website at:
<https://www.vcc.ca/about/governance--policies/policies/>.
- To find out how this course transfers, visit the BC Transfer Guide at <https://www.bctransferguide.ca>.

Broadway campus

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Downtown campus

250 West Pender Street
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