New Course

Program Affected? N

Program Change Form Submitted? N

Subject/Course/Term COMP 307
  - one term

Credit Weight or CEU’s 2 credits

Course Activities

<table>
<thead>
<tr>
<th>Schedule Type</th>
<th>Hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Lecture</td>
<td>1.5</td>
</tr>
<tr>
<td>P - Project</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Total Hours per Week: 2
Total Number of Weeks: 13

Course Title

Official Course Title: Principles of Web Development

Course Title in Calendar: Principles of Web Development

Rationale

Developing the front and back end of web sites, together with comprehending the various paradigms, theories and current technologies involved in web development is an important and relevant skill to have for students graduating from computer science and planning to work as programmers. Given that McGill's School of Computer Science has no official course in this discipline, this proposal is being presented.

Responsible Instructor

Course Description

The course discusses the major principles, algorithms, languages and technologies that underlie web development. Students receive practical hands-on experience through a project.

Teaching Dept. 0155: Computer Science

Administering Faculty/Unit SC: Faculty of Science

Prerequisites

COMP 206
Web Registration Blocked? Y
Minimum Grade or Test Scores: C
Prereq course or test taken at the same time? N
| Corequisites          | COMP 303  
|                     | Web Registration Blocked? : Y |
| Restrictions        |                                  |
| Supplementary       |                                  |
| Calendar Info       |                                  |
| Additional Course   |                                  |
| Charges             |                                  |
| Campus              | Downtown                         |
| Projected Enrollment| 50                               |
| Requires Resources  | N                                |
| Not Currently Available |                                  |
| Explanation for     |                                  |
| Required Resources  |                                  |
| Required Text/Resources Sent To Library? |              |
| Library Consulted   |                                  |
| About Availability of Resources? |        |
| Consultation Reports |                                  |
| Attached?           |                                  |
| Effective Term of   | 201409                           |
| Implementation      |                                  |
| File Attachments    |                                  |
| To be completed by  |                                  |
| the Faculty         |                                  |
| For Continuing Studies Use |                |

**Approvals Summary**

**Show all comments**

<table>
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<tr>
<th>Version No.</th>
<th>Departmental Curriculum Committee</th>
<th>Departmental Meeting</th>
<th>Departmental Chair</th>
<th>Other Faculty</th>
<th>Curric/Academic Committee</th>
<th>Faculty</th>
<th>SCTP</th>
<th>Version Status</th>
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| 5           |                                   |                      |                   |               |                           |         |      | Approved by Department Meeting  
|             |                                   |                      |                   |               |                           |         |      | Edited by: Bettina Kemme  
|             |                                   |                      |                   |               |                           |         |      | on: Nov 21 2013 |
| 4           |                                   |                      |                   |               |                           |         |      | Approved by Department Meeting  
|             |                                   |                      |                   |               |                           |         |      | Edited by: Josie           |
**Course Proposal**  
Joseph Vybihal, November 2013  
(for September 2014)

**Course Name:** Principles of Web Development  
**Credits:** 2 credits

**Motivation:** Developing the front and back end of web sites, together with comprehending the various paradigms, theories and current technologies involved in web development is an important and relevant skill to have for students graduating from computer science and planning to work as programmers. Given that McGill's School of Computer Science has no official course in this discipline, this proposal is being presented.

**Course Objectives:** Students wanting to work as web site developers will need to understand the concepts behind server-side execution, client-side execution, security, language paradigms, distributed processing, interpreters, deployment methods, web frameworks, the architecture of the Internet, and some of the latest techniques and technologies. This would include common practises and common programming languages.

**Primary learning outcome:** To get a clear understanding of the major principles & algorithms that underlie web development and receive practical hands-on experience through a project.

**Secondary learning outcomes:** After taking this course, the student should be able to: (1) identify the core technologies in web development and how they are architect-ed, (2) explain the paradigms and principles on which the core functions are built on, (3) be able to discuss major performance issues (data storage and run-time load), and (4) discuss the web technologies and techniques required for a particular target application.

**Course Description:** The course discusses the major principles, algorithms, languages and technologies that underlie web development. Students receive practical hands-on experience through a project.

**Primary Text:** None.

**Additional Text:** Internet & World Wide Web: How To Program; Deitel; ISBN 978-0-13-215100-9  

**Evaluation:**  
- Project: 30% Teams of 2 or 3 (last month)  
- Assignments: 20% 2 assignments (first two months)  
- Presentation: 10%  
- Final Exam: 40%  
- McGill CS Tech Web Site: Glory (0, 1 or 2 entries at most are published to site)

**Course Prerequisite:** COMP-206

**Course Co-Requisite:** COMP-303

**Impact on COMP 206:** All web related content will be removed. COMP 206 will focus on the Linux operating system, the C programming language with GNU, and the Python programming language.
Basic Course Outline

• Introductory Material
  ◦ Networks, the Internet, IP, TCP, UDP, addressing, URL
  ◦ Packet reading
  ◦ Public Key Infrastructure & Internet security
  ◦ Basic Websites (HTML5,CSS,XML), and browser space computing (Java & JavaScript)
    ● Virtual Machines

• Computing Models
  ◦ Server-side vs. client-side computing
  ◦ Transaction-based computing model (http request/response transaction model)
    ● CGI
    ● Post and Get
  ◦ Push / Pull / Rest model
  ◦ Session Initiation Protocol (SIP) model, files and cookies
  ◦ Socket Computing model
    ● Stand-alone application with access to Internet

• Current Development Trends
  ◦ Developing for Facebook
  ◦ Developing with Google's JavaScript tools
  ◦ Amazon Web Services

• Student develops a complex web project
  ◦ Project selection
    ● A list of projects will be proposed by the instructor from which students can select from
    ● Students can propose their own projects for approval by instructor.
      ● These project must employ 3 to 4 technologies.
  ◦ The project would consume the last month of the semester
  ◦ They would be permitted to work in groups of 2 or 3. They may work alone as well.