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| OP_logo_H_cmyk |  | Bachelor of Information Technology |

Course Directive

IN712 Web 3 – Enterprise Development

Semester 1, 2017

# Description

In this paper, students will study modern techniques in the design and delivery of information and functionality across the Web. In 2017, topics will include JavaScript, AJAX, Django Framework, node.js, MVC pattern, React, REST APIs and the HTTP protocol in detail. This paper extends the skills and knowledge from Web 2 – Programming and Development, to cover enterprise scale systems and complex architectures.

# Course Information

Credits 15 credits

Prerequisites IN612 Web 2

# Lecturer

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| Name | David Rozado |
| Role | Principal Lecturer |
| Location | D309 |
| Phone | 479-6075 |
| email | david.rozado@op.ac.nz |

# Course Dates

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| --- | --- |
| Term 1 (9 weeks) | 13 February – 13 April |
| Mid semester break | 14 April – 28 April |
| Term 2 (7 weeks) | 1 May – 16 June |

# Learning Outcomes

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

1. Understand the structure of a compiled web application or webservice and roles of elements in that structure
2. Understand web application, webservice, web pages and web control lifecycles and design items accordingly.
3. Understand and appropriately use caching, master pages, Asynchronous JavaScript and XML (AJAX), software service providers, datastore interaction, Cascading Style Sheets (CSS).
4. Understand and appreciate the impact of Web 2.0 and the semantic web.
5. Design web software using the UML.
6. Implement web software designs using a object-oriented, compiled language in a contemporary integrated development environment (in 2017: Django and node.js)

# Indicative Content

* + The DOM, JavaScript objects, JavaScript events, regular expressions, JavaScript local data storage, AJAX and JSON
  + Node.js, Express framework
  + React
  + Server-side development with the Django MVC Framework
  + REST API design, development and consumption

# Resources

* **Software**

Please refer any problems with libraries or frameworks to Rob Broadley, Head Technician. ([rob.broadley@op.ac.nz](mailto:rob.broadley@op.ac.nz)) or the Lecturer.

* **Textbook & Readings**

# There is no required textbook for the course. Required readings will be provided digitally. All readings are examinable. It is strongly recommended that every student acquire a JavaScript language manual (any thorough textbooks will do). Relying solely on on-line documentation for syntax problems is very inefficient.

# Schedule

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| --- | --- | --- | --- |
| Week | Date | Session 1 | Session 2 |
| 1 | 13/2/17 | Internet and HTML review | CSS layout review |
| 2 | 20/2/17 | Advanced CSS | JavaScript 1 - Introduction |
| 3 | 27/2/17 | JavaScript 2 - Objects | JavaScript 3 - regex and canvas |
| 4 | 6/3/17 | JavaScript 4 - DOM, debugging | JavaScript 5 - events and HTML5 media |
| 5 | 13/3/17 | JavaScript 6 - forms and validation | JavaScript 7 – JSON, local storage, advanced functions |
| 6 | 20/3/17 | JavaScript 8 - AJAX | JavaScript 9 - jQuery |
| 7 | 27/3/17 | Node.js 1 - Overview | Node.js 2 - buffers and streams |
| 8 | 3/4/17 | Node.js 3 - advanced HTTP, Web sockets | Node.js 4 - advanced HTTP, Express framework |
| 9 | 10/4/17 | Node.js 5 - advanced HTTP, deployment | JavaScript ES6, HTTP 2.0 |
| Midterm Break | | | |
| 10 | 1/5/17 | Python | Django 1 – Intro |
| 11 | 8/5/17 | Django 2 - views and templates | Django 3 - Dynamic content |
| 12 | 15/5/17 | Django 4 - MVC, static files and template extending | Django 5 - Forms |
| 13 | 22/5/17 | Django 6 - security and user generated content | APIs and web services |
| 14 | 29/5/17 | REST APIs 1 | REST APIs 2 |
| 15 | 5/6/17 | React 1 | React 2 |
| 16 | 12/6/17 | React 3 | Presentations |

**Assessment**

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| --- | --- | --- |
| Assessment | **Weight** | **Learning outcomes** |
| JavaScript client-side | 25% | 1,2,3,4,5 |
| Node.js | 25% | 1,2,3,4,5,6 |
| Django and the MVC design pattern | 25% | 1,2,3,4,5,6 |
| REST APIs and React | 25% | 1,2,3,4,5,6 |

* Detailed assignment requirements, including instructions for submission, will be provided for each assessment.

**Course Requirements and Expectations**

# Criteria for Passing

# To pass this paper, you must achieve an overall average of 50. There must be a genuine attempt at all assessments. There are no resits.

# Attendance

* Students are expected to attend all classes, both lectures and labs.
* If you miss a class you will need to get notes from another student.
* If you cannot attend for a few days for any reason, please contact your lecturer.
* You must turn up ready for assessments on the due date and at the correct time. No extra time will be scheduled. If you do not turn up, you have failed the assessment.

## Communication

Your student email is an official communication channel. It is your responsibility to regularly check your student email and Moodle for important course related material, including changes to class scheduling or assessment details. Not checking will not be accepted as an excuse.

You can manage your email at the Student Hub and download the instructions for forwarding your email at http://www.op.ac.nz/students/student-hub/

## Snow Days/Polytechnic Closure

In the event that the Polytechnic is closed or has a delayed opening because of snow or bad weather, you should not attempt to attend class if it is unsafe to do so. It is possible that your instructor will not be able to attend either, so classes will not physically be meeting. However, this does not become a holiday. Rather, material will be available on either Moodle of the I drive covering the material for classes affected by the closure. You are responsible for any material presented in this manner. Information about closure will be posted on the BIT and Otago Polytechnic Facebook pages <https://www.facebook.com/OtagoPoly>.

## Group work and originality

Students in the Bachelor of Information Technology degree are expected to hand in original work. Students are encouraged to discuss assignments with their fellow students, however, all assignments are to be completed as individual works unless group-work is ***explicitly*** required (i.e. if it doesn’t say it is group-work then it is not group-work – even if a group consultation was involved). Failure to submit your own original work will be treated as plagiarism.

## Referencing

Appropriate referencing is required for all work. Referencing standards will be specified by your lecturer.

## Plagiarism

Plagiarism is submitting someone else’s work as your own. Plagiarism offences are taken seriously and an assessment that has been plagiarised may be awarded a zero mark. A definition of plagiarism is in the Student Handbook, available online or at the School office.

## Submission requirements

All assignments are to be submitted by the time, date, and method given when the assignment is issued. Failure to meet all requirements may result in a penalty of up to 10% per day (including weekends).

## Extensions

Extensions are only available for unusual circumstances. These must be applied for, and approved, prior to the submission deadline.

## Impairment

In case of sickness contact your lecturer or year co-ordinator as soon as possible, preferably before the test or assignment is due. The policy regarding the granting of a mark that considers impaired performance requires a medical certificate and a medical practitioners signature on a form. You may should refer to the guide on impaired performance on the student handbook.

## Appeals

If you are concerned about any aspect of your assessment, please approach the lecturer in the first instance. We support an open door policy and aim to resolve issues promptly. Further support is available from Year Co-ordinators, Programme Manager and Head of School. Otago Polytechnic has a formal process for academic appeals if necessary.

# Other Documents

Regulatory documents relating this course can be found on the Polytechnic website.