# MODULE SPECIFICATION

| Part 1: Information | | | |
|---|---|---|---|
| Module Title | Advanced Topics in Web Development I | | |
| Module Code | UFCFX3-15-3 | Level | Level 6 |
| For implementation from | 2018-19 | | |
| UWE Credit Rating | 15 | ECTS Credit Rating | 7.5 |
| Faculty | Faculty of Environment & Technology | Field | Computer Science and Creative Technologies |
| Department | FET Dept of Computer Sci & Creative Tech | | |
| Contributes towards | Information Technology [Sep][FT][Frenchay][1yr] BSc (Hons) 2018-19 | | |
| Module type: | Standard | | |

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|---|---|
| Pre-requisites | Entertainment Software Development 2018-19, Information Technology 2018-19, Introduction to Creative Coding 2018-19, Introduction to OO Systems Development 2018-19, Introduction to Web Platforms 2018-19, Web Programming 2018-19 |
| Excluded Combinations | None |
| Co- requisites | None |
| Module Entry requirements | None |

## Part 2: Description

**Overview**: Pre-requisites: students must take one out of UFCFR3-30-1 Information Technology or UFCFS5-30-1 Introduction to Web Platforms or UFCF8L-30-1 Introduction to Creative Coding or UFCFC3-30-1 Introduction to OO Systems Development or UFCFB3-30-1 Web Programming or UFCFWA-30-1 C++ Programming

**Educational Aims:** See Learning Outcomes

In addition to the Learning Outcomes the educational experience may explore, develop, and practise but not formally discretely assess the following:

Self-study of programming languages and techniques using a range of web development languages.

**Outline Syllabus:** The syllabus will combine compulsory web oriented and programming principles and an optional set of technology topics selected by students with tutor guidance

Compulsory coverage will include:

Web and service-oriented architectures
Software architectures
Object-oriented programming for the web
An introduction to software design patterns
An overview of web programming practices (model- and test-driven design, version control, load testing)

Optional topics will vary but may include:

JavaScript libraries, tools and techniques

Advanced CSS techniques
Utilising Canvas, SVG or WebGL
MVC demonstrators in Ruby, Python, JavaScript or PHP
NoSQL databases

**Teaching and Learning Methods:** Lectures will cover the compulsory topics with illustrations of topics in PHP and JavaScript Tutorials will consist of practical programming exercises in PHP and JavaScript, with further time dedicated to development of topics connected to the coursework and presentation. Students will be given time to select a key topic and develop their prototype

Toward the end of the module, students will describe and present their work.

There will be two contact hours per week consisting of a one-hour lecture and a one-hour lab-based practical session.

Contact time: 3 hours per week

Activity (hrs)
Contact time (36)
Assimilation and development of knowledge (70)
Exam preparation (20)
Coursework preparation (24)
Total study time (150)

**Part 3: Assessment**

Assessment is divided between an exam to test both theoretical and analytical skills and a coursework assignment.

The examination (A component) will typically consist of a compulsory section focusing on core technical knowledge and a selective section testing more specialized in-depth knowledge.

Answers will be assessed for completeness, technical correctness and the application of sound design principles. Thorough answers that show evidence of wider reading and independent learning will score highly.

Support for examination preparation through preparatory questions and worked answers will be provided.

The coursework assignment (B component) will normally be marked as an individual task supported by tutor and group based work during laboratory sessions.

The coursework will be assessed for the sound understanding and application of web technologies, programming standards and adequate documentation.

Weekly material presented in lectures and tutorial worksheets will provide the technical basis for the coursework assignment.

| First Sit Components | Final Assessment | Element weighting | Description |
|---|---|---|---|
| Project - Component B | | 50 % | Research and build a prototype implementation. |
| Examination - Component A | ✓ | 50 % | Examination (3 hours) |
| **Resit Components** | **Final Assessment** | **Element weighting** | **Description** |
| Project - Component B | | 50 % | Individual design and implementation task |
| Examination - Component A | ✓ | 50 % | Examination (3 hours) |

**Part 4: Teaching and Learning Methods**

Learning Outcomes

On successful completion of this module students will be able to:

| | Module Learning Outcomes |
|---|---|
| MO1 | Understand both established and emerging web architectures and the contribution made by standards and communication protocols |
| MO2 | Demonstrate the value of applying object oriented and functional programming techniques to web application development |
| MO3 | Recognise the benefits of common software patterns and architectures and how they are applied in practice |
| MO4 | Identify, select and apply specific software programming patterns for specific use cases and real-world problems |
| MO5 | Develop specific knowledge of a new or emerging technology and how it may be applied in practice |
| MO6 | Gain exposure to a range of current tools and techniques in web programming |

Contact Hours

| **Contact Hours** | |
|---|---|
| | |
| **Independent Study Hours:** | |
| Independent study/self-guided study | 114 |
| **Total Independent Study Hours:** | 114 |
| **Scheduled Learning and Teaching Hours:** | |
| Face-to-face learning | 36 |

| | | |
|---|---|---|
| | **Total Scheduled Learning and Teaching Hours:** | 36 |
| | **Hours to be allocated** | 150 |
| | **Allocated Hours** | 150 |
| Reading List | *The reading list for this module can be accessed via the following link:*<br><br>https://uwe.rl.talis.com/modules/ufcfx3-15-3.html | |