**Module Descriptor**

# Section A

1. **Module Title :**

Multiplatform Development

1. **SITS Module Code:**

UI108007

1. **SCQF Level:**

**8**

1. **SCQF Credit Points:**

**20**

1. **Module Leader, include staff ID and email address:**

**Les Wright ar02lw ar02lw@uhi.ac.uk**

1. **Module Team Members, include staff IDs and email addresses**

**tbc**

1. **Faculty and Cognate Subject Group**

**Faculty: Science, Technology and the Environmen**

**CSG: Engineering, Computing and the Built Environment**

1. **Exam Board and Exam Board Module Sub-group**

**CSG:** Computing & IT

1. **Date of Module Start / Most Recent Revision**

**September 2020/September 2025**

1. **Semester**

**SC**

1. **Minimum / Maximum Student Numbers**

Minimum numbers:10

Maximum numbers: N/A

1. **Pre-requisites**

n/a

1. **Co-requisites**

n/a

1. **Mode of Study**

Give estimate of proportions of mode of study but also highlight **main** mode of study.

Table 1: Proportions of mode of study

| **Mode of study** | **Percentage** | **Hours** |
| --- | --- | --- |
| Video-conference (other video technologies accessed via Internet) | 15.0% | 30 hours |
| Online supervised practical work | 12.5% | 25 hours |
| **Team activities** | **37.5%** | **75 hours** |
| VLE (self-directed & team study) | 35.0% | 70 hours |
| **TOTAL** | **100.0%** | **200 hours** |
| **Total** | **100%** | **200 Hours** |

1. **Assessment**

Table 2: Assessment

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Assessment number** | **Type** | **Details** | **Weighting** | **Component**  **Threshold Mark** | **Submission week** | **Learning Outcome(s) assessed** |
| **Assessment 1** | Group work | Portfolio of evidence, equivalent to 3000 - 3500 words in total. Evidence submitted in a variety of formats including essay, project, group work, practical, oral presentation, discussion board participation. | 50% | 40% | 14 (S2) | ALL |
| **2** | Progress log/Vlog | Evidence of progress, and breadth and depth of knowledge/research. This may take the form of short written, oral or video progress report(s) detailing for example, project management, code reviews. | 50% | 40% | 6,14 (S1) | ALL |

1. **Experiential Education**

Highlight all that apply

Work placement

**Case studies**

Simulations

Field trip

Laboratory work

Research project

Internship

**Guest lecture**

Clinical practice

Community engagement

Service learning

Job shadowing

Study abroad

Summer school

Volunteering

**Co-operative education**

Capstone course

**Other**

Other detail

1. **Specialist Learning Resources**

Students are expected to sign up to several online services that will facilitate their learning and team work. This may include but is not limited to:

* IBM Cloud
* Atlassian Jira
* Bitbucket.
* GitHub

These are available free to the student.

1. **Additional Costs to Students**

Students are expected to have access to a computer that they have complete control over. The following table has the recommended minimum requirements for a system. This is slightly higher than the UHI minimum requirements found at https://www.uhi.ac.uk/en/lis/buying-your-own-device.

| **Minimum System Requirements** | | |
| --- | --- | --- |
|  | Windows | Mac |
| Operating system | Windows 7, 8 or 10 | Mac OS 10.10.x or newer |
| Processor | 2 GHz or better, INTL or AMD is recommended  (Must support virtual machines) | |
| Graphics | OpenGL version 1.2 or later compatible | |
| RAM | 8GB or more | |
| Monitor | 17" or larger (the bigger the better) (Laptop: 15" or larger screen) | |
| Microphone / headphones | USB headset with microphone | |
| Webcam | Built-in or external (it is easier to adjust the camera angle with an external) | |
| Broadband | Reliable connection required   1. Mbps (receive)   1.5 Mbps (send)  (Cisco recommendations for good quality video calls) | |

Students are expected to be willing to sign up to a range of industry standard tools located online. Students will not be required to pay for any software.

1. **Employability / Graduate Attributes**

Employability attributes (meta-skills) have been aligned with Skills Development Scotland’s *Skills 4.0*, published in 2018.

|  |  |
| --- | --- |
| The ability to sort information into categories and to understand the relationship between information | X |
| The ability to focus on the present and deflect/avoid distractions | X |
| The ability to filter out non-essential information and focus on the essential problem at hand | X |
| The ability to think for one’s self and trust one’s own judgement | X |
| The act of making a considered choice after appropriately using intuition and careful thought | X |
| Understanding and mentally processing verbal or written communication | X |
| The ability to actively understand information provided by the speaker, and display interest in the topic discussed | X |
| Working with others toward shared goals. Creating group synergy in pursuing collective goals | X |
| The ability to notice behaviour or information and register it as being significant | X |
| The ability to ask questions in order to increase understanding about a subject or experience | X |
| The ability to filter resources and information to find information relevant to an issue or topic | X |
| The acknowledgement and definition of a problem | X |
| Proficiency at thinking and coming up with solutions and responses beyond that which is rote or rule-based | X |
| The process of classifying information into objects or classes based on key features | X |
| The process of organising, manipulating, pruning and filtering gathered data into cohesive structures for information building | X |
| The ability to identify areas of opportunity for innovation | X |
| A systematic examination and evaluation of data or information, by breaking it into its component parts to uncover their interrelationships | X |
| Breaking down a complex problem or system into smaller, more manageable parts before developing a new way of addressing the problem | X |
| The ability to identify, analyse and evaluate situations, ideas and information in order to formulate responses to problems | X |
| The act or process of forming an opinion after careful thought | X |
| The ability to translate vast amounts of data into abstract concepts and to understand data-based reasoning | X |

SDS 2022 Meta-skills

* Self-management - time management in project deliverables
* Social intelligence - team-based assignments, peer collaboration
* Innovation - exploring novel multiplatform frameworks in a lab setting

# Section B

1. **Module Summary**

This module builds on the skills learned in the first year with students developing projects on a variety of platforms including Desktop, Mobile, and the Cloud. Students will explore different project management techniques and the types of software they benefit. They will learn how to evaluate their own performance within the team. This module provides students with the skills to identify and correct a range of common software vulnerabilities.

1. **Module Keywords**
2. Software development, sustainability, frontend, mobile, browser, games
3. **Module Learning Outcomes**

On successful completion of this module, students should be able to…

|  |  |  |
| --- | --- | --- |
| **Number** | **Theme** | **Learning Outcome** |
| 1 | Agile | Explain and compare project management environments, such as 'waterfall' methods, and be able to apply the underpinning philosophy and principles of Agile in a project situation even in a non-agile environment. |
| 2 | Business | Assess, in a team context, basic business behaviour, ethics and courtesies, demonstrating timeliness and focus when faced with distractions and the ability to complete tasks to a deadline with high quality. |
| 3 | Meta-skills\*\* | Make concise, engaging and well-structured verbal presentations and explanations of varying lengths, with and without the use of media, always taking into account the audience viewpoint. |
| 4 | Security | Examine technical aspects of info security (client data protection, data protection act |
| 5 | Technical | Correctly apply the organisation’s security architecture to any particular systems or solutions development activities**.** Create appropriate implementations for a selection of different contexts for HCI (mobile devices, consumer devices, business applications, web, business applications, collaboration systems, games, etc.) and be able to produce a user-centred design that explicitly recognises the user and is DDA compliant (Disability Discrimination Act). |
| 6 | Sustainability | Apply sustainable software development principles by considering energy efficiency, resource consumption, and long-term environmental impact in technology solutions. |

Correctly apply the organisation’s security architecture to any particular systems or solutions development activities**.** Create appropriate implementations for a selection of different contexts for HCI (mobile devices, consumer devices, business applications, web, business applications, collaboration systems, games, etc.) and be able to produce a user-centred design that explicitly recognises the user and is DDA compliant (Disability Discrimination Act).

\*\*Meta-skills are also known as soft skills or employability skills

1. **Indicative Content**

Skills that will be practiced and developed:

• Communicate the benefits of a range of project management techniques.

• Practice evaluating their own professional skills.

• Contributing effectively and conscientiously to the work of a group

• Communicating ideas and solutions to a range of audiences

• Developing an understanding of common cybersecurity threats on each platform

• Building confidence in developing software on a variety of platforms

Syllabus Content

• Project management

• Agile project management tools

o Kanban vs Scrum

o Backlogs

o User stories

o Definition of ready/done

• Developing for the web, mobile and cloud

• Secure programming for client environments

• Graphics development

• Developing for multiple frontend platforms

• HTML, CSS and Javascript

• Common desktop frontend toolkits

• Using media assets in front end software

• Event handling

• Asynchronous programming and simple threading

• Accessibility requirements

1. **Library Resources**

[Talis Library Resource List](https://uhi.rl.talis.com/index.html)