Programme Specification

MSc Web Science (2020-21)

Subject to validation this specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

Awarding Institution	University of Southampton
Teaching Institution	University of Southampton
Mode of Study	Full-time
Duration in years	1
Accreditation details	British Computer Society (BCS)
Final award	Master of Science (MSc)
Name of award	Web Science
Interim Exit awards	Postgraduate Certificate in Higher Education
	Postgraduate Diploma in Higher Education
FHEQ level of final award	Level 7
UCAS code	N/A
Programme code	4478
QAA Subject Benchmark or other external reference	Master's Degrees In Computing 2011
Programme Lead	Leslie Carr (lac)

Programme Overview

Brief outline of the programme

This programme explores the impact of the Web on the digital economy and all aspects of human society, from the individual right through to national and global scales. Web Science analyses the Web at a systems level, on the one hand investigating the technical capabilities of its distributed information infrastructure whilst also scrutinising the public policy and social practices that have made it a transformative global phenomenon. This programme develops a multidisciplinary understanding of the Web in society drawn from the social and human sciences as well as science, engineering and mathematics. The programme is taught in the context of the University of Southampton's Web Science Institute, its Doctoral Training Centre and its international Web Science Trust Network of Research Laboratories.

This programme is a masters degree, enabling students to develop specialist knowledge of Web Science. This

programme is taken mainly by UK students with a first degree in any of the relevant disciplines and specific computing skills or programming experience are not required. The modules which comprise this masters degree cover the theories, methods, state of the art techniques, technologies, and supporting tools, and expose students to their applications in meeting emerging business and social needs, and solving challenging problems.

The programme's compulsory modules address (i) the technology of the Web, (ii) the principles of Web Science in understanding the Web and evaluating its usefulness and (iii) the methods of interdisciplinary research. There is one choice of optional module in the second semester to allow students to either review key topics in computer science to resolve the inevitable variety of background knowledge caused by a multidisciplinary cohort, or to allow those with a strong technical background to extend their knowledge in innovation, open data or other specific topics.

The construction of the programme and the emphasis on multi-disciplinary teamwork and assessment encourages the development of a cohort with a strong ethos of collaborative working, initiative and leadership. Throughout both semesters there is a focus is on preparing students for their summer project and dissertation (both the choice of topic and multidisciplinary supervisory team).

Finally, during the summer the core research project enables students to demonstrate their mastery of research methodologies, specialist techniques, interdisciplinary methods of enquiry, and the ability to work to a tight deadline in the production of a substantial dissertation.

Your contact hours will vary depending on your module/option choices. Full information about contact hours is provided in individual module profiles.

Learning and teaching

Learning and teaching methods are explained in the following sections covering programme learning outcomes.

Assessment

Assessment methods are explained in the following sections covering programme learning outcomes.

Special Features of the programme

N/A

Please note: As a research-led University, we undertake a continuous review of our programmes to ensure quality enhancement and to manage our resources. As a result, this programme may be revised during a student's period of registration; however, any revision will be balanced against the requirement that the student should receive the educational service expected. Please read our Disclaimer to see why, when and how changes may be made to a student's programme.

Programmes and major changes to programmes are approved through the University's programme validation process which is described in the University's Quality handbook.

Educational Aims of the Programme

The aims of the programme are to enable you to:

1) Develop original ideas and solve complex problems in new or unfamiliar environments, based on advanced knowledge of the principles and methodologies of interdisciplinary Web Science, i.e. the Web and its role in society, culture and the digital economy
2) Integrate knowledge and handle complexity in this area of Computer Science, Information Science and Engineering, Social Science and Humanities, formulating sound judgements with incomplete or limited data

3) Communicate your conclusions and the underpinning knowledge and rationale clearly and unambiguously to specialist and non-specialist audiences
4) Develop your independent learning skills as required for continued professional development

Programme Learning Outcomes

Knowledge and Understanding

On successful completion of this programme you will have knowledge and understanding of:

A1.   Key technical concepts of the Web architecture, the social Web and the Web of data

A2.   Socio-technological approaches to understanding the Web and its role in society

A3.   The range of disciplines, research methods and theoretical approaches required to analyse, critique and develop the Web

A4.   Current and emerging research questions for Web Science

Teaching and Learning Methods

A1-A4: Most modules consist of a combination of lectures, small group teaching, student-led seminars, individual reading and coursework assignments. At the end of the taught part of the course you will undertake an individual project with a multidisciplinary supervision team. Small group teaching, including all practical work, and the individual project accommodate different learning styles. One-on-one tutorials can support full-class lectures, when required.

Assessment Methods

Your knowledge and understanding (outcomes A1–A4) will be assessed through examinations and through written assessments with literature review components and verbal presentation, both individually and in groups.

Subject Specific Intellectual and Research Skills

On successful completion of this programme you will be able to:

B1.   Describe the technical infrastructure and architecture of the web, including hypertext, social and semantic Web

B2.   Critically appraise and integrate knowledge from a range of social and technical approaches to the Web

B3.   Acquire and assess different ways of thinking and problem solving within and across disciplinary

boundaries

B4.   Apply your knowledge and understanding to specific problems and research questions about the Web

B5.   Employ qualitative and quantitative research methods to examine and analyse aspects of the Web

Teaching and Learning Methods

B1-B5: Most modules consist of a combination of lectures, small group teaching, student-led seminars, individual reading and coursework assignments. B2-B3: Individual and group investigations will lead you to investigate multiple disciplines outside your own expertise, and to draw on the shared experiences of the cohort. B4 Many opportunities are provided to examine and critique specific policies or well-known problems individually or as a group. B5 In addition, research methods modules provide specific methods and investigation design techniques to formulate the major summer research project.

Assessment Methods

Your ability to employ and integrate knowledge from technical and social disciplines (B1 & B2) will be assessed through written assessments and examinations. Your understanding of research methods, ability to locate, critique and present information (outcomes B3–5) will be assessed through student-led presentations, written assessments and your dissertation. Your ability to think critically, appraise information and apply knowledge (outcomes B1 & B2) will be assessed through problem solving exercises, presentations, written assessments and your dissertation. Your ability to integrate your learning, develop a research question relevant to the web, design and execute research independently and present this (B2, B4, B5) is assessed through your dissertation, which must include a significant review of relevant literature, interdisciplinary analysis of a problem or question relevant to web science and critical evaluation and reflection.

Transferable and Generic Skills

On successful completion of this programme you will be able to:

C1.   Use a range of sources, including the web, to locate relevant information, and critically appraise that information

C2.   Present specialist information in different written and verbal formats, tailored to a variety of audiences

C3.   Work efficiently and effectively as a member of a team

C4.   Work independently on a significant research project

C5.   Recognise legal and ethical issues of concern to research, business, professional bodies, and society, including but not limited to information security, and follow relevant guidelines to address these issues

Teaching and Learning Methods

A number of modules have a significant coursework element which exercises skills C1 - C5. This can range from group problem solving through to seminar presentations resulting from directed reading.

The individual project includes independent research, project management and report writing.

C1-C3: Most modules include small group teaching, directed reading and coursework assignments with a literature review component. The research design module includes project management and the delivery of a project plan via a presentation. Small group teaching, including all practical work, and the individual project accommodate different learning styles.

C4: The individual project includes independent research and report writing.

C5: Legal, ethical and professional issues are covered in the compulsory taught modules.

Assessment Methods

Your ability to think critically, appraise information and present knowledge to a variety of stakeholders (C1-C2) will be assessed through problem solving exercises, presentations, written assessments and your dissertation. Students will be expected to provide documentary evidence of their contribution to group projects and team work (outcome C3), and these may also be assessed in verbal presentations and group activities. Your ability to integrate your learning, develop a research question relevant to the web, design and execute research independently and present this (C2 & C4) is assessed through your dissertation, which must include a significant review of relevant literature, interdisciplinary analysis of a problem or question relevant to web science and critical evaluation and reflection. The individual project is assessed by a dissertation of up to 15,000 words. Your recognition of legal and ethical issues is assessed through research design courseworks (as they relate to the research process), as well as through the core Web science issues addressed in the previous section.

Programme Structure

The programme structure table is below:

Information about pre and co-requisites is included in individual module profiles.

Where optional modules have been specified, the following is an indicative list of available optional modules, which are subject to change each academic year. Please note in some instances modules have limited spaces available.

Part I

Typical course content

The programme consists of eight taught modules, each worth 7.5 ECTS credit points (15 CATS) and an individual research project worth 30 ECTS credit points (60 CATS). There are six compulsory modules which cover core material of Web Science. Another compulsory module prepares you for your individual research project. One optional module should be selected, allowing students without a technical background to deepen their understanding of computing and those with a technical background to specialise in innovation areas.

Programme details

The programme runs over three semesters. The first semester consists of four compulsory modules. The second semester consists of three compulsory modules and one optional modules. Following the first two semesters of the

taught component of the programme, the students will undertake a research project which will be assessed by a degree dissertation.

COMP6220 (Qualitative Research Methods for Assessing Technology) is 2.5 ECTS (5 CATS) and RESM6004 (Quantitative Methods 1) is 5 ECTS (10 CATS). These modules are therefore taken together to accumulate the 7.5 ECTS (15 CATS) credit points awarded for a single module.

Most modules are shared with our Master of Engineering programmes in Computer Science and our specialist MSc programmes. It should be noted that it may not be possible to run some optional modules if the number of students registered on the module is very small. It should also be noted that optional module choice can be restricted by the University Timetable, which varies from year to year: some optional modules may clash with other optional or compulsory modules. Please be aware that many modules are shared between different cohorts; the class size depends on cohort size, which varies from year to year.

Examinations are held at the end of Semester 1 (January) and at the end of Semester 2 (May/June). Students who have successfully completed 30 ECTS (60 CATS) or 60 ECTS (120 CATS) at the level of the award may exit with a Postgraduate Certificate or Postgraduate Diploma, respectively.

The following is the normal pattern of study for a full-time student, completing the programme within 12 calendar months.

Semester 1:
Four compulsory modules. Examinations are held in January.

Semester 2:
Four modules, including three compulsory modules and one optional module. Examinations are held in May/June.

Summer/Semester 3:
You will undertake a research project lasting 3 to 4 months, which is assessed by a 15,000 word dissertation.

The programme structure, including the optional modules, is summarised below:

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SEMESTER 1

WEBS6201 - compulsory
WEBS6203 - compulsory
COMP6218 - compulsory
COMP6220+RESM6004 - compulsory

SEMESTER 2 - select one optional module

WEBS6202 - compulsory
COMP6215 - compulsory
COMP6217 - compulsory
COMP6221 - optional
ENTR6037 - optional

SUMMER

WEBS6200 - core
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Part I Compulsory

Code	Module Title	ECTS	Type
WEBS6201	Foundations of Web Science	7.5	Compulsory

WEBS6202	Further Web Science	7.5	Compulsory
WEBS6203	Interdisciplinary Thinking	7.5	Compulsory
COMP6220	Qualitative Research Methods for Assessing Technology	2.5	Compulsory
RESM6004	Quantitative Methods 1	5	Compulsory
COMP6215	Semantic Web Technologies	7.5	Compulsory
COMP6217	The Science of Online Social Networks	7.5	Compulsory
COMP6218	Web Architecture	7.5	Compulsory

Part I Core

Code	Module Title	ECTS	Type
WEBS6200	Project and Dissertation - Web Science	30	Core

Part I Optional

Select one semester 2 module (7.5 ECTS/15 CATS) from the following:

Code	Module Title	ECTS	Type
COMP6221	Computational Thinking	7.5	Optional
ENTR6037	Innovation and Technology Transfer	7.5	Optional

Progression Requirements

The programme follows the University's regulations for *Progression, Determination and Classification of Results : Undergraduate and Integrated Masters Programmes* and *Progression, Determination and Classification of Results: Postgraduate Master's Programmes* as set out in the University Calendar: http://www.calendar.soton.ac.uk/sectionIV/sectIV-index.html

Support for student learning

There are facilities and services to support your learning some of which are accessible to students across the University and some of which will be geared more particularly to students in your particular Faculty or discipline area.

The University provides:
- library resources, including e-books, on-line journals and databases, which are comprehensive and up-to-date; together with assistance from Library staff to enable you to make the best use of these resources

- high speed access to online electronic learning resources on the Internet from dedicated PC Workstations onsite and from your own devices; laptops, smartphones and tablet PCs via the Eduroam wireless network. There is a wide range of application software available from the Student Public Workstations.
- computer accounts which will connect you to a number of learning technologies for example, the Blackboard virtual learning environment (which facilitates online learning and access to specific learning resources)
- standard ICT tools such as Email, secure filestore and calendars.
- access to key information through the MySouthampton Student Mobile Portal which delivers timetables, Module information, Locations, Tutor details, Library account, bus timetables etc. while you are on the move.
- IT support through a comprehensive website, telephone and online ticketed support and a dedicated helpdesk in the Hartley Library.
- Enabling Services offering support services and resources via a triage model to access crisis management, mental health support and counselling. Support includes daily Drop In at Highfield campus at 13.00 – 15.00 (Monday, Wednesday and Friday out of term-time) or via on-line chat on weekdays from 14.00 – 16.00. Arrangements can also be made for meetings via Skype.
- assessment and support (including specialist IT support) facilities if you have a disability, long term health problem or Specific Learning Difficulty (e.g. dyslexia).
- the Student Services Centre (SSC) to assist you with a range of general enquiries including financial matters, accommodation, exams, graduation, student visas, ID cards
- Career and Employability services, advising on job search, applications, interviews, paid work, volunteering and internship opportunities and getting the most out of your extra-curricular activities alongside your degree programme when writing your CV
- Other support that includes health services (GPs), chaplaincy (for all faiths) and 'out of hours' support for students in Halls and in the local community, (18.00-08.00)
- A Centre for Language Study, providing assistance in the development of English language and study skills for non-native speakers.

The Students' Union provides
- an academic student representation system, consisting of Course Representatives, Academic Presidents, Faculty Officers and the Vice-President Education; SUSU provides training and support for all these representatives, whose role is to represent students' views to the University.
- opportunities for extracurricular activities and volunteering
- an Advice Centre offering free and confidential advice including support if you need to make an academic appeal
- Support for student peer-to-peer groups, such as Nightline.

Associated with your programme you will be able to access:
·   The tutorial system – you will have a personal tutor whom you can meet on request for advice on your programme and choice of options, or for pastoral support
·   The ECS Student Advisory Team who provide additional pastoral support
·   ECS computer workstations, with a range of manuals and books
·   Specialist project laboratories
·   Personal email account and web access, including use of on-line collaboration tools
·   Helpdesk (programming advisory)
·   Post-graduate demonstrators who provide additional support for your work
·   A web-site for each taught module, typically with teaching materials – these are also available, where appropriate, off-line or as printed notes

Methods for evaluating the quality of teaching and learning

You will have the opportunity to have your say on the quality of the programme in the following ways:

·   Completing student evaluation questionnaires for each module of the programme
·   Acting as a student representative on various committees, e.g. Staff: Student Liaison Committees, Faculty Programmes Committee OR providing comments to your student representative to feed back on your behalf.
·   Serving as a student representative on Faculty Scrutiny Groups for programme validation
·   Taking part in programme validation meetings by joining a panel of students to meet with the Faculty Scrutiny Group

The ways in which the quality of your programme is checked, both inside and outside the University, are:

- · Regular module and programme reports which are monitored by the Faculty
- · Programme validation, normally every five years.
- · External examiners, who produce an annual report
- · A national evaluation of research – which is relevant since our research activity contributes directly to the quality of your learning experience.
- · Higher Education Review by the Quality Assurance Agency.

Further details on the University's quality assurance processes are given in the *Quality Handbook.*

Career Opportunities

Graduates from our MSc programme are employed worldwide in development and consultancy roles in a number of leading companies at the forefront of information technology; and some have gone on to doctoral study and University careers, while others have been involved in IT start-ups. ECS runs a dedicated careers hub which is affiliated with over 100 renowned companies like IBM, ARM, Microsoft Research, Imagination Technologies, Nvidia, Samsung and Google to name a few. Visit our careers hub for more information.

External Examiner(s) for the programme

Name: Professor Russell Beale - University of Birmingham

Students must not contact External Examiner(s) directly, and external examiners have been advised to refer any such communications back to the University. Students should raise any general queries about the assessment and examination process for the programme with their Course Representative, for consideration through Staff: Student Liaison Committee in the first instance, and Student representatives on Staff: Student Liaison Committees will have the opportunity to consider external examiners' reports as part of the University's quality assurance process.

External examiners do not have a direct role in determining results for individual students, and students wishing to discuss their own performance in assessment should contact their Personal Academic Tutor in the first instance.

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. More detailed information can be found in the programme handbook.

Appendix 1:

Students are responsible for meeting the cost of essential textbooks, and of producing such essays, assignments, laboratory reports and dissertations as are required to fulfil the academic requirements for each programme of study. In addition to this, students registered for this programme also have to pay for:

Additional Costs

Type	Details
Stationery	You will be expected to provide your own day- to-day stationary items, e.g. pens, pencils, notebooks, etc.). Any specialist stationery items will be specified under the Additional Costs tab of the relevant module profile.
Textbooks	Where a module specifies core texts these should generally be available on the reserve list in the library. However due to demand, students may prefer to buy their own copies. These can be purchased from any source. Some modules suggest reading texts as optional background reading. The library may hold copies of such texts, or alternatively you may wish to purchase your own copies. Although not essential reading, you may benefit from the additional reading materials for the module.
Approved Calculators	Candidates may use calculators in the examination room only as specified by the University and as permitted by the rubric of individual examination papers. The University approved models are Casio FX-570 and Casio FX-85GT Plus. These may be purchased from any source and no longer need to carry the University logo.
Printing and Photocopying Costs	In the majority of cases, coursework such as essays; projects; dissertations is likely to be submitted on line. However, there are some items where it is not possible to submit on line and students will be asked to provide a printed copy.

In some cases you'll be able to choose modules (which may have different costs associated with that module) which will change the overall cost of a programme to you. Details of such costs will be listed in the Module Profile. Please also ensure you read the section on additional costs in the University's Fees, Charges and Expenses Regulations in the University Calendar available at www.calendar.soton.ac.uk.