Programme Specification

MSc Web Science

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
Accreditation details	N/A
Final award	Master of Science (MSc)
Name of award	Web Science
Interim Exit awards	Postgraduate Diploma Postgraduate Certificate
FHEQ level of final award	
UCAS code	N/A
QAA Subject Benchmark or other external reference	The UK Quality Assurance Agency's National Qualifications Framework (Masters Level)
Programme Coordinator	Professor Leslie Carr
Date specification was written	31/03/2014

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.

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

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

Educational Aims of the Programme

The aims of the programme are to:

a) Provide you with advanced knowledge of interdisciplinary Web Science (the Web and its role in society, culture and the digital economy) drawn from areas such as Social Science, the Humanities, Computer Science, Information Science and Engineering.
b) Develop your research skills applicable to a career in the digital economy, government policy or research
c) Stimulate your interest in applications of the Web, and develop your ability to act as an ambassador for the subject.

Programme Learning Outcomes

Knowledge and Understanding

Having successfully completed this programme you will be able to demonstrate 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

Having successfully completed 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

As an existing graduate, you will already be expected to have a general proficiency with IT, to be numerate and to be proficient in English. The MSc modules will further develop these skills and typically, having successfully completed 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.

Subject Specific Practical Skills (optional)

n/a

Disciplinary Specific Learning Outcomes (optional)

n/a

Graduate Attributes (not required for PG programmes)

n/a.

Programme Structure

Typical course content

The programme consists of eight taught modules, each worth 7.5 ECTS credit points and a core individual project worth 30 ECTS credit points. *(Note that COMP6220 and RESM6004 are co-requisites of each other and together make a total of 7.5 ECTS credits.)* The compulsory subjects relate to Web science and applicable methods of research and enquiry within the discipline. You can also choose from a optional topics that allow students without a technical background to deepen their understanding of computing and those with a technical background to specialise in innovation areas.

Module choice: one option in the second semester.

Special Features of the programme

Southampton is recognised to be internationally leading in Web Science, and specialist modules are taught by staff involved in leading edge research across all faculties. Students are therefore exposed to the most up to date thinking, current research problems, and state of the art techniques, technologies and tools.

Programme details

The programme consists mainly of compulsory modules and one optional module. Many of these modules are shared with other MSc programmes we run.

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

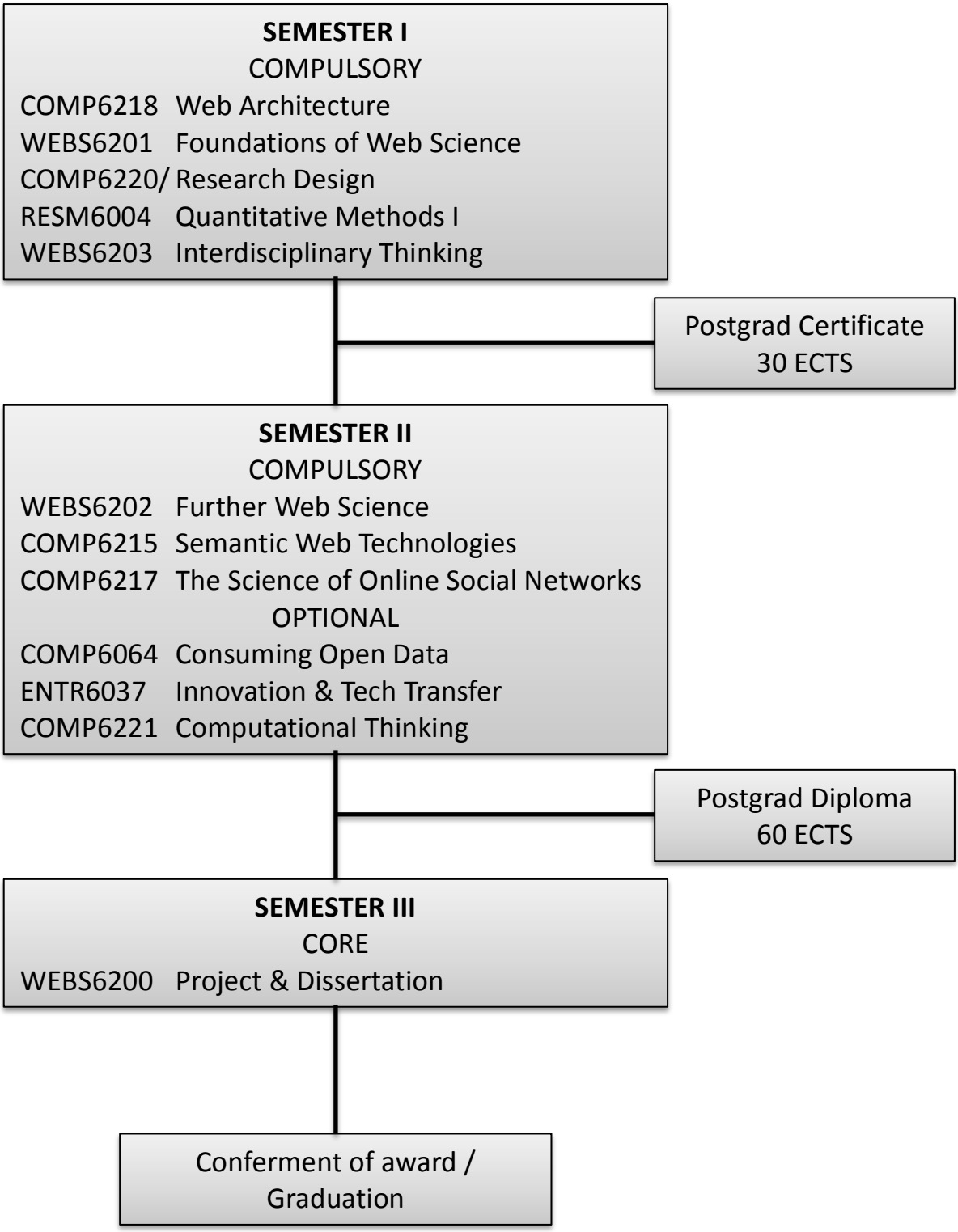
Semester 1: Four modules, including those specified as compulsory for the MSc programme. Examinations are held in January.

Semester 2: Four modules; including those specified as compulsory for the MSc programme. Examinations are held in May/June.

Summer/Part II/Semester 3: Following the successful completion of the taught component of the programme, you will undertake a research project lasting up to 14 weeks, which is assessed by a 15,000 word dissertation.

The diagram below shows the overall structure and exit points.

MSc Web Science Programme Structure



Progression Requirements

The programme follows the University's regulations for Stand-alone Masters programmes as set out in the University Calendar, and the ECS specific regulations which supplement these. See sections IV and XII of http://www.calendar.soton.ac.uk/. The pass mark for MSc modules is 50%, and the regulations cover the progression criteria, referral, repeat and resubmission arrangements, together with degree classification.

Intermediate exit points (where available)

You will be eligible for an interim exit award if you complete part of the programme but not all of it, as follows:

Qualification	Minimum overall credit in ECTS credits	Minimum ECTS credits required at level of award
Postgraduate Diploma	at least 60	45
Postgraduate Certificate	at least 30	20

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 Student Services Centre
- Enabling Services offering assessment and support (including specialist IT support) facilities if you have a disability, dyslexia, mental health issue or specific learning difficulties
- 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 Destinations, 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
- a range of personal support services : mentoring, counselling, residence support service, chaplaincy, health service
- 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.

Criteria for admission

University Commitment

The University will at all times seek to operate admissions regulations that are fair and are in accordance with the law of the United Kingdom, and the University's Charter, Statutes, Ordinances and Regulations.

This includes specific compliance with legislation relating to discrimination (e.g. Equality Act 2010) and the University's Equal Opportunities Policy Statement. This includes a commitment that the University will:

- actively assist groups that experience disadvantage in education and employment to benefit from belonging to the University

- actively seek to widen participation to enable students that do not traditionally participate in Higher Education to do so;

- ensure that admission procedures select students fairly and appropriately according to their academic ability and that the procedure is monitored and regularly reviewed.

Entry Requirements

The normal entry requirement for admission to an MSc programme is a first class or upper second class honours degree (or equivalent) in a relevant discipline. Qualifications of a lower standard may be accepted if supplemented by a number of years of relevant work experience.

Note that the entry requirements for optional modules are not deemed to have been met by the programme entry requirements. Students should determine the suitability of each option according to their individual educational background in conjunction with advice from the programme leader as appropriate.

If English is not your first language, you will be required to pass an approved English test. We normally ask for an International English Language Testing System (IELTS) score of 6.5 (with a score of 6 in all elements), or an International Baccalaureate (IB) Test of English as a Foreign Language (TOEFL) score of 92 (with a score of 21 in each element).

All individuals are selected and treated on their relative merits and abilities in line with the University's Equal Opportunities Policy. Disabled applicants will be treated according to the same procedures as any other applicant with the added involvement of the Disability Office to assess their needs. The programme may require adaptation for students with disabilities (eg hearing impairment, visual impairment, mobility difficulties, dyslexia), particularly the practical laboratory sessions, and we will attempt to accommodate students wherever possible.

You will be expected to prepare yourself for the course by private study prior to the start of the course. A reading list for each module is published on the ECS web site to assist you in this preparation. See http://www.ecs.soton.ac.uk/programmes/msc_web_science for further information.

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 Examiners(s) for the programme

Name Dr Jane Hillston
Institution University of Edinburgh

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 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 (or other appropriate guide) or online at (give URL).

Revision History

1. Written by Leslie Carr, based on the University template and closely based on Andy Gravell's exemplar of (26/03/14)

Appendix:

Learning outcomes and Assessment Mapping document template

		Knowledge and Understanding						Subject Specific Intellectual Skills					Transferable/Key Skills						
Module Code	**Module Title**	**A 1**	**A 2**	**A 3**	**A 4**			**B 1**	**B 2**	**B 3**	**B 4**	**B 5**	**C 1**	**C 2**	**C 3**	**C 4**	**C 5**		
S1 – Compulsory																			
COMP6218	Web Architecture	X	X	X				X	X						X				
WEBS6201	Foundations of Web Science		X	X	X				X		X			X			X		
COMP6220	Research Design			X	X						X	X	X	X	X		X		
RESM6004	Quantitative Methods I		X	X					X		X	X	X						
WEBS6203	Interdisciplinary Thinking		X	X	X				X	X	X			X	X				
S2 – Compulsory																			
WEBS6202	Further Web Science		X	X	X				X		X			X	X		X		
COMP6215	Semantic Web Technologies	X	X	X				X											
COMP6217	The Science of Online Social Networks	X	X	X				X	X						X				
S3 – Core																			
COMP6200	Project and Dissertation	X	X	X	X			X	X	X	X	X	X	X		X	X		
S2 – Options																			
COMP6064	Consuming Open Data	X	X					X	X		X		X			X	X		
ENTR6037	Innovation & Tech Transfer		X	X					X		X		X	X			X		
COMP6221	Computational Thinking	X		X				X		X			X	X	X				

Module Code	**Module Title**	**Coursework 1**	**Coursework 2**	**Exam**
COMP6218	Web Architecture	Web Application Group Exercise, 25%	-	2 hours, 75%
WEBS6201	Foundations of Web Science	Essay on Application of Socio-technical Web Theory, 50%	Report on Multidisciplinary Web Science Perspectives, 50%	-
COMP6220	Research Design	Group Research Project Bid, 100%	-	-
RESM6004	Quantitative Methods I	Assignment, 100%	-	-
WEBS6203	Interdisciplinary Thinking	Multidisciplinary Investigation, 60%	3 x Group Interdisciplinary	-

			Coursework, 40%	
WEBS6202	Further Web Science	-	-	3 hours, 100%
COMP6215	Semantic Web Technologies	Ontology Design Exercise, 25%	-	2 hours, 75%
COMP6217	The Science of Online Social Networks	Group Project, 40%	-	2 hours, 60%
COMP6200	Project & Dissertation	MSc Dissertation, 100%	-	-
COMP6064	Consuming Open Data	Coursework, 75%	Lab style exercises, 25%	-
ENTR6037	Innovation & Tech Transfer	Report, 100%	-	-
COMP6221	Computational Thinking	Public Engagement Presentation, 40%	Teaching Plans, 20%	-
		Programming Labs, 20%	Raspberry Pi coursework, 20%	-