Programme Specification

A statement of the knowledge, understanding and skills that underpin a taught programme of study leading to an award from The University of Sheffield

1	**Programme Title**	Information Systems
2	**Programme Code**	IJCT003 Information Systems (Full-time) IJCT004 Information Systems (Part-time 3 years) IJCT011 Information Systems (Part-time 2 years)
3	**JACS Code**	I200, P110
4	**Level of Study**	Postgraduate
5a	**Final Qualification**	Master of Science (MSc)
5b	**QAA FHEQ Level**	Masters
6	**Intermediate Qualification(s)**	Postgraduate Diploma (PG Dip), Postgraduate Certificate (PG Cert)
7	**Teaching Institution** (if not Sheffield)	Not applicable
8	**Faculty**	Social Sciences
9	**Department**	Information School
10	**Other Department(s) involved in teaching the programme**	Computer Science
11	**Mode(s) of Attendance**	Full-time or Part-time
12	**Duration of the Programme**	1 year or 2 to 3 years
13	**Accrediting Professional or Statutory Body**	Chartered Institute of Library and Information Professionals (CILIP)
14	**Date of production/revision**	March 2014, April 2018, March 2026

15. Background to the programme and subject area

The largest growth in most economies is coming from 'information' industries. The success of these knowledge-based organisations lies in their information systems, which must effectively gather, process, store and disseminate information. Forced by technological change and globalisation of markets, many manufacturing industries are also placing increasing emphasis upon information systems. Consequently, knowledge of the state of the art in information systems development, application and management is currently at a premium in the workplace.

The MSc in Information Systems, offered by the Information School with contribution from the Department of Computer Science, provides students with practical knowledge in the field of information systems and teaches them to apply it effectively and confidently in organisations of all kinds. The programme places information systems within their organisational context, emphasising issues related to information, people, IT and the business environment. It also develops students' skills in keeping up-to-date with new developments in this fast-moving area.

There are two separate routes to gaining the MSc in Information Systems: the ***Standard Masters*** Route and the ***Professional Enhancement*** (PE) Route. Students following standard MSc Route are aiming to start a career in information systems or a related area on completion of the programme. Students following the PE Route generally have at least two years relevant work experience at a managerial or supervisory level prior to starting the programme and are aiming to develop knowledge and skills to enhance and further develop their career. Within both Pathways there is flexibility for students to focus on people and their interaction with information systems, and/or to develop more technical skills.

Both Departments have an international reputation for their research, as indicated by their ratings in the Research Assessment Exercise carried out by the Higher Education Funding Council for England in 2001 (including the top 5* rating for Information Studies and a 5 rating for Computer Science). Both the Information School and the Department of Computer Science have world leading research groups in such areas as database systems, information retrieval, speech recognition, information extraction and information management.

Students on the MSc in Information Systems will therefore benefit from the research-led environment in which this programme is taught. In the context of our MSc degrees, this means that students are not only taught the well-established fundamentals in their courses, but also the most advanced theories and techniques currently under consideration. This is developed further by the research activities of the students themselves, both in exploring topics as part of their course work and in the completion of a dissertation. As a result, students graduating with a degree from us are highly valued in industry, commerce and academia. In addition, the programme acts as an excellent introduction to the substantial research opportunities for potential doctoral-level study.

The Information School was awarded an "excellent" score for teaching quality in 2001 by the Quality Assurance Agency (QAA) Subject Review and also has an international reputation for research, having been awarded the highest possible rating in all Research Assessment Exercises carried out by the Higher Education Funding Council for England (including the top 5* rating in 2001). Students will therefore be exposed to the latest concepts and ideas in the information professions. The composition of research and teaching in the Information School is highly multi-disciplinary, with staff backgrounds in Computer Science, Information Science, Information Systems, Knowledge Management, Librarianship and Business. Further information is available at the School website at: www.shef.ac.uk/is/

16. Programme aims

For all its programmes the Information School aims to:

1) deliver a curriculum for each degree programme that develops in students a broad understanding of the subject area together with a detailed and critical understanding of selected areas;
2) provide students with the knowledge and skills required to work as effective information professionals, managers of information or research workers in their chosen field;
3) enable those already working in the information field to update and expand their professional understanding and competencies;
4) prepare students for professional practice by providing programmes which meet the accreditation requirements of professional bodies and that meet the needs of employers;
5) deliver teaching informed and inspired by professional expertise and by the research and scholarship of staff;
6) encourage students to become informed citizens and to understand the place of information in society.

In addition the **MSc in Information Systems** aims to:

1) develop an awareness of the human, organisational and social contexts in which information systems operate;
2) enable students to become familiar with the technologies used to implement information systems;
3) provide students with practical skills in the techniques and technologies used to analyse, design and implement information systems;
4) enable those already working in the information systems field to update and expand their professional understanding and competencies.

17. Programme learning outcomes

Knowledge and understanding: Students completing the programme will:	
K1	demonstrate an understanding of the nature of information and its uses, the interface between information and its users, and the technology and systems which produce and communicate information.
K2	recognise, and apply theories and best practice of information systems within application areas students may encounter in their future career.
K3	demonstrate acquisition of an up-to-date subject knowledge (e.g., software analysis and design, project management, e-business, etc.), practical, professional, and research skills to enable them to meet their career aspirations and the needs of employers.
K4	be able to describe which information technologies are used in implementing information systems.
K5	be able to explain the human, organisational and social contexts in which information systems operate as well as how information systems interact and affect the operations/needs of humans/organisations and vice versa.
K6	comprehend a breadth of professional perspectives on application of information systems theory and good practice, through the involvement of practitioners in curriculum delivery.
K7	have learned to apply appropriate research methods to an information systems problem.
K8	be able to re-evaluate their professional practice in the context of current and emerging theory and research in information management (PE Route only).
K9	be able to understand the application of research-based approaches to problem solving and decision making relevant to their professional experience and needs (PE Route only).

Skills and other attributes: Students completing the programme will:	
S1	demonstrate their practical skills in the techniques and technologies used to analyse, design and implement information systems, such as Java programming and Oracle database management.
S2	have implemented relevant research methodologies and practical research skills relating to the study of information systems.
S3	develop key generic and interpersonal skills to complement their subject knowledge. These skills include: presentational skills, group working skills, computer literacy, and research.
S4	acquire new skills and approaches relevant to their level and direction of professional development (PE Route only).

Students successfully completing the Postgraduate Diploma programme (both Routes) will be able to demonstrate K1-K6, K8-K9 and S1-S4 above, with the exception of research skills specifically associated with carrying out the Research Methods module and the research dissertation.

Students successfully completing the Postgraduate Certificate programme (both Routes) will be able to demonstrate a more limited range of learning outcomes from K1-K6, K8-K9 and S1-S4, in accordance with their chosen modules, with the exception of research skills specifically associated with carrying out the Research Methods module and the research dissertation.

18. Teaching, learning and assessment

Development of the learning outcomes is promoted through the following teaching and learning methods:

Induction sessions and preparatory coursework during the first weeks of the programme are designed to introduce students to School procedures and standards related to the writing and presentation of coursework, and to provide early feedback on performance (S3 above).

Lectures are used on most modules and establish the direction of studies and present information, ideas, case examples and critical analysis. Multimedia resources are used in some lectures and student participation is encouraged. Students are provided with handouts of slide presentations and other lecture notes and materials. Visiting speakers are an important feature of the lecture programme on some modules. These are normally information systems practitioners or researchers and provide real-life examples of information systems practice and problems, and expose students to examples of good practice (K1-K7 above).

Induction sessions and preparatory assessed essay during the first weeks of the programme are designed to introduce students to School procedures and standards related to the writing and presentation of assessed discursive essays, and to provide early feedback on performance (S3 above).

Seminars*,* used on some modules, may be staff-led or student-led, and are designed to facilitate greater interactivity, allowing ideas to be discussed and challenged. Students are enabled to work through, analyse and respond to

information and ideas imparted through lectures, for example through case study analysis (K1-K7, S2-S3 above).

Tutorials are small-group or one-to-one sessions with academic staff and are used on some modules to support group project-work and/or independent study. Research supervision also is provided through regular one-to-one tutorials throughout the dissertation research process. The word tutorial is also used to describe meetings arranged between a tutor and an individual student in order to clarify a problem experienced by the student in the understanding of material or in the process of preparing an assessment (K1-K7 above).

Practical laboratory sessions are used on a variety of modules to provide students with hands-on experience of using ICT and applying it to information systems problems (K2-K3, K7, S1-S3 above).

Independent learning is essential to successful completion of the programme and is expected for each module. Independent learning is necessary for assimilation and further clarification of material encountered in lectures, preparation for seminars, tutorials and practical sessions, preparation for written assessments and broader development of knowledge of the field of study. Independent learning contributes to the development of all the programme's learning outcomes, and encourages students to take responsibility for their own learning, to organise their time and develop effective learning skills (K1-K7, S2-S3 above).

Collaborative group-work is an important feature of some modules. It is designed to enable students to work on complex, multi-faceted information systems problems in a way that reflects professional practice and provides opportunities for students to develop professional and interpersonal skills (S2-S3 above).

The Web provides 24/7 access to School learning resources such as lecture slide presentations and handouts, and to administrative information relating to teaching. A Web-based 'virtual learning environment' is used on some modules to provide integrated access to both learning resources and computer-mediated communication facilities (K1-K7 above).

Dissertation work under the supervision of academic staff allows students to develop and practice research skills (K7-K9, S2-S3 above).

Task-oriented projects and case studies, used on some modules, encourage students to contextualise theoretical and professional perspectives (K3, S2-S3 above).

Individual and Group Presentations with feedback, used on some modules, help students to develop presentation skills (S2 above).

Problem solving exercises **and** ***group work*** provide opportunities for students to develop transferable and professional skills (S3 above)

Opportunities to demonstrate achievement of the learning outcomes are provided through the following assessment methods:

Feedback on students' progress is provided through seminars and tutorials. Each taught module is assessed at the end of the semester in which it is taught. Methods of assessment of knowledge, understanding and skills vary from module to module and are designed to measure attainment of intended learning outcomes to meet the aims and objectives of the module. All students experience a range of assessed individual and group assignments. There are formal unseen examinations only for modules delivered by Computer Science (K1-K9 above).

Knowledge and understanding are demonstrated through individual essays (ca. 3,500 words), group reports, software projects, and formal unseen examinations (only for modules delivered by Computer Science). These require students to provide evidence of their ability to synthesise knowledge and learning, organise information and apply critical judgement to evidence (K1-K9 above).

Transferable skills (e.g. intellectual, technical and professional skills) are demonstrated through exercises including case study analysis, problem-solving exercises, software projects, creation of Web sites and the research dissertation report (S1-S3 above).

Interpersonal skills are generally incorporated within modules and related to relevant assessments on some modules. Examples include oral presentations, group exercises, student-led seminars, the use of research-based teaching materials and methods, and problem based case studies (S2, S3 above).

Research skills are assessed through the core module: Research Methods and Dissertation Preparation and the Dissertation itself (K7, K9, S2 above).

19. Reference points

The learning outcomes have been developed to reflect the following points of reference:

Internal

- Mission Statement of the University of Sheffield, as presented in its Corporate Plan.
- The Learning and Teaching Strategy 2011-16 of the University of Sheffield.
- The Faculty of Social Sciences Learning and Teaching Strategy 2013-16.
- Sheffield graduate concept.
- Current research and scholarship of School staff.
- Discussions with members of the Information School Advisory Panel (comprising senior members of the information professions) and formal/informal relationships with practitioners.
- Regular analysis of the employment market through the Advisory Panel and investigation of job adverts in the professional press.
- School annual student programme and module evaluations.

External

- The aims and objectives of the MSc programme are consonant with, and address a significant proportion of, the CILIP Professional Knowledge and Skills Base (PKSB), available from http://www.cilip.org.uk/jobs-careers/professional-knowledge-and-skills-base/pages/professional%20knowledge%20and%20skills%20base.aspx
- Framework for Higher Education Qualifications (2008) http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/The-framework-for-higher-education-qualifications-in-England-Wales-and-Northern-Ireland.aspx

20. Programme structure and regulations

The MSc in Information Systems programme offers two routes. The **Standard Masters** Route, is for students entering as graduates but with little or no relevant work experience. The **Professional Enhancement** (PE) Route, is for students entering as graduates and with experience of information systems work at a managerial or supervisory level (at least 2 years). There is a full-time and part-time option for both pathways. The full-time programme is offered over 12 months starting in late September each year, and finishes the following September. The part-time programme also starts in late September each year and normally takes 3 years to complete.

The programme is modular in nature, allowing students flexibility in the design of their degree. The modules are delivered either by the Information School or the Department of Computer Science, depending on the nature of the content, and as indicated in the module lists below. Options within both pathways are designed to enable students to specialize in information and technological issues. Students enter the programme with a wide range of prior IT skills and knowledge. Accordingly, the programme allows students on both pathways to opt for introductory or more advanced computer programming and computer network modules, so that the modules studied are appropriate to their levels of prior knowledge.

The programme is modular in nature, allowing students flexibility in the design of their degree.

Core modules are compulsory and ensure a coherent programme structure providing all students with the key concepts and essential tools they need to work as competent professionals in their chosen field.

Approved modules allow students to follow professional and personal interests in specialised areas in greater depth. In consultation with staff, students choose modules to design an academically coherent programme consistent with their own career aspirations and interests.

All core and approved modules are worth 15 credits (Information Studies/10 credits (Computer Science) and are designed on the basis of approximately 10 hours of work per credit (including contact hours, private study and assessment) in order to ensure an appropriate and uniform workload. The dissertation is worth 45 credits (Information Studies)/60 credits (Computer Science). Students aiming for a Masters degree must register for modules to the value of 180 credits.

A Practical Computing Module is also available in semester 1 to support students. This involves up to two hours of lectures/practical laboratory work per week and is not credit-rated. In consultation with the module co-ordinator, students may decide to attend all, some or no sessions on this module, depending on their prior technical skills and experience in relevant areas.

A year long, optional, non-credit bearing module on academic writing is available to all students. This supports students in developing the skills to write academic essays, reports and the dissertation.

Successful completion of the programme leads to the award of the Masters' degree, with either a 'pass', 'pass with merit' or 'pass with distinction' grade. On both Routes Postgraduate Certificate and Postgraduate Diploma level awards are available after successful completion of taught modules to the value of 60 credits and 120 credits respectively (excluding the Research Methods and Dissertation Preparation module and the Dissertation module), for students who do not wish to progress further.

Please refer to the Programme Regulations, General University Regulations and the On-line Directory of Modules for detailed information about the structure of programmes, regulations concerning assessment and progression and descriptions of individual modules.

21. Student development over the course of study

The programme consists of three stages through which those taking the programme (via either pathway) will progress.

1. Core modules: introductory concepts in Information Systems are taught at the start of the programme.
2. Approved modules: building on completed core modules, more advanced concepts of Information Systems are learned in this phase.
3. Dissertation: a student driven project is completed in the final semester of the programme over the summer.

Students entering the programme may have had some prior education in computer science and related subjects and work experience in an information systems and IT related environments. In some cases, students will have gained considerable computing knowledge, equating to a first degree in computer science. This provides a foundation of knowledge of technical issues and practice on which the MSc in Information Systems can build.

Core (compulsory) modules for the standard MSc Route cover information systems from an organisational, management and society perspectives, computing from programming, computer architecture and communications perspectives, and information systems design and implementation. Thus, the core ensures that students take a coherent course, which introduces them to fundamental principles, concepts and techniques. Within the core there is flexibility, so as to meet the needs of students with and without prior knowledge of computer science-related topics. The needs of the former are met through modules which provide introductory coverage of computing topics. Those with pre-knowledge of computer science may take modules which provide more advanced coverage, allowing students to further develop computing knowledge and skills.

PE Route students are already following careers as information systems professionals. Therefore, they are required to take a reduced core, thus taking into account their existing knowledge and increasing the flexibility within the programme for them to develop knowledge and skills pertaining to their individual professional interests. The PE Route core includes studies which are key to the profession, i.e., information systems project management, and information systems analysis and design methodology.

Student choice is served through the availability of a wide range of **approved (elective)** modules, designed to enable students on both Routes to design a programme in accordance with their developing interests and career aspirations. Students may elect to take modules offered by Information Studies so as to gain specialist knowledge and skills in information, organisation and management issues, or they may elect to take modules offered by Computer Science so as to gain specialist knowledge and skills in technical aspects of information systems.

Students' development over the course of their study is identified and measured through assessment of performance in each module, and via regular meetings with a personal tutor.

All students registered for the MSc in Information Systems are required to complete a research-based dissertation of 10,000-15,000words. Students may take either the Information Studies dissertation module, or the Dissertation Module offered by Computer Science. This enables students to apply appropriate research techniques to a real information systems problem, and to engage at an in-depth level with an area of the subject that is of particular interest to them. For full-time students this is carried out in the period from mid-June to September. For part-time students this normally is carried out during their 3rd year on the programme. Students may develop their own dissertation topics, in consultation with staff, or select from a list of possible topics generated by academic staff and employers.

22. Criteria for admission to the programme

Detailed information regarding admission to the programme is available at http://www.shef.ac.uk/is/pgt.

Applicants for the standard MSc Route will normally be expected to have, or expected to obtain before joining the programme, at least a second class honours degree (or its equivalent) in any subject discipline. Any relevant work experience is considered advantageous, however candidates without such experience will be given equal consideration.

Applicants for the PE Route will normally be expected to have, or expected to obtain before joining the programme, at least a second class honours degree (or its equivalent) in any subject discipline, and will be practicing information systems professionals with at least two years relevant work experience at a managerial or supervisory level prior to starting the programme. Applicants without first degrees will be considered for entry onto the PG Diploma and PG Certificate programmes in the first instance.

For both standard MSc and PE Routes, additional requirements relating to English language proficiency may also be required.

23. Additional information

The Information School and Department of Computer Science are both housed in the modern, purpose-built Regent Court and each have their own dedicated computer facilities. The departments are ten minutes' walk from the city centre and are adjacent to the St. George's Library which contains the University's main collection of Librarianship, Information Science, Data Science, Computer Science and Management materials. The University's Information Commons, with its excellent resources for individual and group study, is within a few minutes' walk from the School.

This specification represents a concise statement about the main features of the programme and should be considered alongside other sources of information provided by the teaching department(s) and the University. In addition to programme specific information, further information about studying at The University of Sheffield can be accessed via our Student Services web site at www.shef.ac.uk/ssid.