

Programme Specification (Postgraduate)

Date created: n/a Last amended: 14/11/2022 Version no. 1

FOR ENTRY YEAR: 2023/24

1. Programme title(s) and code(s)

Two-year MSc (incl Postgraduate Diploma and Postgraduate Certificate as exit awards) in

- Advanced Computer Science
- Advanced Computer Science with Industry

Notes

HECOS Code

| HECOS Code | % |
|------------|------|
| 100366 | 100% |

2. Awarding body or institution

University of Leicester

3. a) Mode of study

Full-time

b) Type of study

Campus-based

4. Registration periods

a) MSc October Intake

The normal period of registration is 24 months
The maximum period of registration is 36 months

b) MSc (with industry)

The normal period of registration is 36 months

The maximum period of registration is 48 months

5. Typical entry requirements

These programmes will only be open to students who have passed an equivalent of the second year of our BSc Computer Science at an institution that the College of Science & Engineering has a collaborative agreement with: such an agreement will typically take one of two forms.

- (i) A general agreement where students that have passed an equivalent year to the Leicester second year can apply for admission to the proposed two-year MSc at Leicester. In this case, the admissions team in cooperation with the programme leader will evaluate if the applicant's prior achievements cover the learning outcomes required as prerequisites for the third, final year, of the UoL BSc Computer Science programme.
- (ii) In a more specific arrangement, some of the partner Bachelor programmes are considered and at the agreement discussion stage and are listed in the collaboration

documents. Module content details and learning outcomes will already have been reviewed. In this case an individual assessment of modules for each application will follow a more light touch approach to ensure the applicant has taken the required modules and achieved the necessary marks/CGPAs.

We will require a level of prior achievement equivalent to an average of 60% or higher at Leicester, suitably translated into the corresponding score for candidates' home institution. In particular candidates need to be fluent in object-oriented programming, particularly Java and Python, common software engineering methods, processes and practices, basic statistics and discrete mathematics.

Where English is not the first language of the candidate, the successful applicant must have IELTS 6.0.

6. Accreditation of Prior Learning

N/A

7. Programme aims

The aims of the programme are to:

- Develop a deep understanding of the nature and impact of current challenges faced by the IT industry, so that students know what is expected from them as mature professionals.
- Develop an awareness of the methodologies and technologies that are available within computer science to address these challenges, so that students can evaluate and analyse specific situations and make informed choices.
- To foster confidence, convey knowledge and develop practical skills in the use of some of these technologies, including both fundamental concepts and state-of-the-art support tools.
- Encourage students to develop their interpersonal, communication, decision-making, and problem-solving skills, and to use these in an imaginative way.
- Provide experience of both team-based and individual project work.
- Secure knowledge and research skills so that students are able to take their studies further to do a PhD, in case they complete the full MSc.

For the with industry variant only, these additional programme aims apply:

- Prepare students for career and training opportunities which relates to their degree in both the private and public sectors, and voluntary organisations.
- Construct effective applications for placement opportunities
- Provide students the opportunity to recognise suitable plans for transitioning into the workplace

8. Reference points used to inform the programme specification

- QAA Benchmark <u>Computing (Masters) 2019)</u>
- PDR report (February 2019)
- University Learning Strategy
- University Employability Strategy
- External Examiner's Reports

9. Programme Outcomes

Unless otherwise stated, programme outcomes apply to all awards specified in 1. Programme title(s).

a) Discipline specific knowledge and competencies

i) Knowledge

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|--|--|--|
| Demonstrate knowledge and mastery of a range of advanced computer science subjects and the way they relate to IT practice. Integration of knowledge across subjects. | Independent research, lectures, and the seminar/discussion groups that are part of the Personal and Group Skills module. | Written examinations, oral presentations, participation in group discussions, essays/demos, project planning and dissertation. |

ii) Concepts

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|--|--|--|
| Demonstrate enhanced grasp of principles of computer science methodology and technology. | Independent research, lectures, seminars, group-discussions. | Written examinations, assessed coursework, group essays, oral presentations, dissertation and reports. |

iii) Techniques

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|--|
| Master advanced modelling and design techniques for the development of distributed, software intensive, and web- based systems. | Independent research, lectures, seminars, group-discussions, along with laboratory work and individual project. | Written examinations, assessed coursework, group essays, oral presentations, dissertation and reports. |
| Engineer and follow software development processes, make use of model-based techniques, target service-oriented architectures. | As above. | As above. |
| Use problem-solving techniques, and select and apply suitable technologies in different application areas. | As above. | As above. |
| Apply current technologies in distributed systems engineering. | As above. | As Above. |
| Master research methods and project planning techniques. | Personal and Group Skills module, and individual project. | Individual project components; group discussions and essays. |

iv) Critical analysis

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|--|---|--|
| Apply understanding of concepts and techniques with independence, rigour & self- reflexivity. | Independent research, lectures, Personal and Group Skills module, and individual project. | Oral presentations, participation in group discussions, essays/demos, project plan, dissertation, and work placement report. |
| Critically appraise problem solutions, and project work. Demonstrate consideration of professional issues. | As above. | As above. |

v) Presentation

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|--|---|
| Organise research material and/or technology demonstration; distinguish between relevant and non-relevant material; write-up and deliver oral reports on findings to a professional standard; engage in scientific discussion with peers. | Lectures, seminars, group discussions. Personal and Group Skills module. Work placement. | Oral presentations, participation in group discussions, essays/demos, project plan, and dissertation. |

vi) Appraisal of evidence

| Intended Learning | Teaching and Learning Methods | How Demonstrated? |
|--|---|---|
| Outcomes | | |
| Analyse and assess a variety of requirements for system development and/or engineering. Assess the relevance and quality of proposed methods, techniques and technologies. Mount and sustain an independent level of inquiry at an advanced level. | Independent research, lectures, seminars, group-discussion, and the Personal and Group Skills module. | Oral presentations, participation in group discussions, essays/demos, project plan, and dissertation. |

b) Transferable skills

i) Research skills

| Intended Learning | Teaching and Learning Methods | How Demonstrated? |
|--|---|---|
| Outcomes | | |
| Conduct significant background research and literature surveys, organise and marshal evidence, report on findings, analyse complex ideas and construct sophisticated critical arguments. | Project supervision. Seminars, group discussions, collective essay, and specific workshops delivered by Student Learning Development. | Collective essay, group discussions, and individual project reports and dissertation. |

ii) Communication skills

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|--|--|
| Respond to scientific questions with accurate and concise answers. Demonstrate fluent and sustained scientific and technical communication. | Lectures, seminars, moderated group discussions, and individual project supervision. Workshops delivered by Student Learning Development. | Group discussions and individual project presentations, individual project oral examinations, presentation. |
| Write concise and accurate summaries of scientific knowledge, and solutions to problems, in a variety of different formats. | Lectures. Detailed solutions provided in problem classes. Workshops delivered by Student Learning Development. Individual project supervision. | Written examinations, assessed coursework, group essay, intermediate individual project reports and dissertation. Group essay. Intermediate |
| Produce properly structured, clear, advanced technical reports or dissertations. | As above. | individual project reports and dissertation. |

iii) Data presentation

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|--|--|--|
| Organise and present information gathered through research clearly and effectively using appropriate IT resources. | Independent research. Lectures. Workshops delivered by Student Learning Development. | Oral presentations, essays/demos, work placement report, and dissertation. |

iv) Information technology

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|--|--------------------------------------|--------------------------------------|
| [Insert details – use a separate row for each ILO] | [Insert details] | [Insert details] |
| [Insert or delete rows as necessary] | [Insert or delete rows as necessary] | [Insert or delete rows as necessary] |

v) Problem solving

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|--|--------------------------------------|--------------------------------------|
| [Insert details – use a separate row for each ILO] | [Insert details] | [Insert details] |
| [Insert or delete rows as necessary] | [Insert or delete rows as necessary] | [Insert or delete rows as necessary] |

vi) Working relationships

| Intended Learning | Teaching and Learning Methods | How Demonstrated? |
|----------------------------|-------------------------------|-----------------------------------|
| Outcomes | | |
| Know how and when to draw | Lectures. Group discussions | Oral presentations, participation |
| on the knowledge & | and collective essay. | in group discussions, work |
| expertise of others; | | placement report. |
| contribute and comment on | | |
| ideas in syndicate groups. | | |

vii) Managing learning

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|--|--|--|
| Demonstrate independence and time management skills. | Tutor system. Career development workshop delivered by the Student Learning Development. | Meeting coursework deadlines. Collective essay. |
| Identifying a credible research project, drawing up a realistic research timetable, reflecting on and 'writing up' results. Design a long-term personal career plan. | Project supervision. | Individual project topic choice and plan, intermediate reports and dissertation. |

viii) Career management

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|-------------------------------|--|
| Plan personal professional development, understand how to prepare for job market and how to apply for employment. | Career development workshop. | Personal Tutor meetings. Obtaining placement ("with Industry") |

For the with Industry variant of the programme, the following apply

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| Placement Preparation 1 and | 2 | |
| Select appropriate resources for researching/securing | Students are provided with dedicated and timetabled sessions to prepare to search | Formative module feedback through session tasks and exercises |

placement
opportunities
2. Explain the process for
applying for and
securing a relevant
placement

3. Construct effective applications for placement opportunities

4. Recognise suitable plans for transitioning into a placement

and secure an industrial placement.

Problem solving classes, Masterclasses, Career development programmes, Independent research.

On Placement

1. Apply the theoretical and practical aspects of the material studied at the University and demonstrate the personal and professional skills necessary for your role within the organisation.

- 2. Compose a
 Professional
 Development Plan
 considering your
 strengths,
 development areas
 and motivations for
 your next step
- Modify your CV to include the skills and experience you have gained through your significant experience gained in the past 12 months.

Students undertake a minimum of 3 months experience in the workplace.

Project supervision, independent research

Completion of Monthly Reflective Journals to record skills development, major achievements, key areas of work, learning points and challenges overcome.

Assessed by a Placement
Portfolio, comprising of a
Reflective Summary,
Professional Development
Plan, and Updated CV
(excluded from word count) to
formally assess on a pass or
fail basis.

Formative feedback during a Placement Visit (in person or via Skype) from Placement Provider and Placement Tutor regarding reflection on skills development, areas of strength and weakness and contribution to the workplace.

10. Special features

The MSc part of the course contains the compulsory Personal and Group Skills combines attendance of seminars especially commissioned from speakers selected for their presentation skills and state-of- the-art research, group discussions and collective essay writing on topics selected for the seminars, as well as a series of workshops on transferable skills and career planning run by Student Learning Development. This module provides a platform to both support the development of transferable skills (such as groupwork, communication, academic writing and presentation) and allow students to address research questions in the context of their own nationality, ethnicity and culture, supporting inclusivity.

The other part of the programme providing a great level of flexibility is the individual project, which can be research related, entrepreneurial, involve industry partners or follow the student's own interests. The department has close links with industry partners, is an active contributor to both the Leicester Innovation Hub and the Space Park development, and is research active in all areas covered by the programmes. Students benefit from these links and activities both in their projects and through special lectures, tutorials and discussions with national and international collaborators.

For the with Industry variant of the degree, the following apply:

- i. After completing the eight taught modules and exams in the first year of the course, students will carry out between 3 and 12 months employment in an industrial placement. Students will be encouraged to undertake the maximum period of employment possible, to gain the full benefit of experience in industry.
- ii. On the return from an industrial placement, the Placement Student will carry out an in-house project in the School or Department, as per the normal non-Industry MSc. The project will be supervised and assessed within the Department. The project title will be decided, in conjunction with the Placement Student, while they are on placement.
- iii. During the industrial placement, appropriate support will be provided by the School or Department as defined in the Code of Practice.
- iv. Placement Students will be expected to complete a Monthly Reflective Journal to record their training. This will support the Placement Student to complete the Placement Portfolio which is assessed on a pass/fail basis, and will have no credit weighting in the MSc
- v. Placement Students who do not pass the assessment or meet the minimum duration of an industrial placement will receive the standard MSc degree.

11. Indicators of programme quality

QAA subject review, external examiners reports, periodic developmental reviews, module review process including student surveys are all used to reflect on and improve the curriculum design and the methods and quality of delivery . The BSc component has been accredited by the British Computer Society (BCS). It requires that individual projects be passed at the first attempt.

For the with Industry variant of the degree, the following apply:

It is the student's responsibility to secure an industrial placement. Students are invited to attended Placement Preparation modules, additional support workshops and 1-2-1 appointments with the Career Development Service. Employer led activities provide a platform for students to engage with organisations who are recruiting students for year in industry roles.

The 'with Industry' MSc relies on the Placement Provider to provide work suitable for an MSc student. To ensure the role is relevant, the School or Department assesses the industrial placement through the University's Placement Approval Process. The Placement Provider will be asked to provider:

- An indication of the area of the organisation where the Placement Student will work.
- An indication of the area of expertise that the Placement Student should have or will gain.
- Whether the work is suitable only for a UK national, for and EU national or for an overseas student.

- The resources available to the Placement Student. For example, design software, textbooks, laboratory equipment, product specimens, access to facilities in the organisation.
- Identification of a suitable industrial mentor (i.e. a graduate with knowledge of the area and at least a couple of years of experience in the field).

When a Placement Student starts an industrial placement, they will be required to complete health and safety documents and confirm they have completed a formal induction process no later than the 2nd week of placement. A Placement Student on an industrial placement will also gain from being able to:

- Apply the theoretical and practical aspects of the material studied at the University and demonstrate the personal and professional skills necessary for your role within the organisation.
- 2. Compose a Professional Development Plan considering your strengths, development areas and motivations for your next step
- 3. Modify your CV to include the skills and experience you have gained through your significant experience gained in the past 12 months

Placement Students will be provided with a Study Guide for their industrial placement and support them to complete the assessment. The School or Department will undertake a placement start check, regular communications, visits to the workplace (physical and/or virtual) and evaluation. Communication and contact between the Placement Student, Placement Provider and University provides support should issues arise.

12. Criteria for award and classification

This programme follows the standard scheme of taught postgraduate award and classification set out in <u>Senate Regulations</u> – the first year of this programme follows the undergraduate scheme of assessment and classification as set out in Senate Regulation 5. The second year follows the assessment and awards procedures for postgraduate programmes in Senate Regulation 6.

Students who have passed the first year of the program, but have not met the Learning Outcomes for the award of an MSc, can be awarded a postgraduate diploma or postgraduate certificate as an exit award according to the rules set out for these awards in the Regulation 6 (Criteria for and classification of awards).

13. Progression points

As defined in <u>Senate Regulations</u> - refer to the version of *Senate Regulation 6 governing taught postgraduate programmes of study* relevant to year of entry.

To progress from the 1st to the 2nd year of the programme, students normally have to achieve a credit weighted average of 60%, with the option to consider borderline cases and special circumstances.

Before starting to study the Leicester first year modules, the student and home institution agree the study programme (including any option module selections). After completing their first year at Leicester, students will receive a Leicester transcript in the normal way. This transcript will then be submitted by the student to the student's home university for consideration as part (the final year) of the home university Bachelor degree programme.

Candidates entitled to proceed to a full MSc degree undertake, after examinations, an individual project.

In cases where a student has failed to meet a requirement to progress he or she will be required to withdraw from the course and a recommendation will be made to the Board of Examiners for an intermediate or exit award where appropriate.

A Placement Student will revert back to the degree without Year in Industry if:

- They do not achieve an overall merit level or fail exams at the end of their first taught semester they will normally revert to the degree without industry or fail to satisfactorily perform (attend, participate and complete set tasks) in the employability programme (modules ADCO7221 and ADCO7222)
- 2. They fail to secure an industrial placement role.
- 3. They fail to pass the assessment related to the industrial placement.
- 4. The industrial placement ends early due to the behaviour of the Placement Student not being in accordance with the University's Regulations for Students, Student Responsibilities. The Placement Student will need to return to the University and carry out an in-house project in the School or Department, as per the normal non-Industry MSc. To prevent such an incident from happening, processes are in place to identify any possible issues or concerns early in the industrial placement role. This includes a start check, regular communications, visits to the workplace (physical and/or virtual) and evaluation. Communication and contact between the Placement Student, Placement Provider and University provides support should issues arise.
- 5. They discontinue their industrial placement and carry out an in-house project in the School or Department, as per the normal non-Industry MSc.

In the event that a Placement Student is moved to the standard campus-based MSc, the Placement Provider will be notified immediately. For overseas students, the UKBA will also be informed immediately. Placement Provider's will be made that any contract of employment shall be made subject to satisfactory completion of the taught part of the MSc.

Three months is the minimum time required for an industrial placement to be formally recognised. If the industrial placement is terminated earlier than 3 months as a result of event outside of the Placement Students control (for example redundancy, or company liquidation), the following process will be adopted:

- If the Placement Student has completed less than 2 months, they will be supported to search
 for another placement to take them up to the required minimum of 3 months for the
 industrial placement to be formally recognised. If the Placement Student does not find a
 placement to meet this criteria they will be required to suspend and transferred onto the
 degree without industry.
- 2. If the Placement Student has completed 2 months, they will be supported to search for another placement to take them up to the 3 months required for the industrial placement to be formally recognised. If the Placement Student cannot source an additional placement to take them to 3 months, assessments related to the industrial placement will be set for the student to make it possible for the individual learning objectives for the industrial placement to be met. This will allow with industry to be recognised in the degree certificate.
- 3. The duration of time between the two Placement Providers to meet the minimum 3 months of an industrial placement must not exceed the period of time required to comply with visa requirements.

A Placement Student is permitted to undertake an industrial placement which runs across two academic years.

14. Rules relating to re-sits or re-submissions

As defined in <u>Senate Regulations</u> - The first year of the programme will follow the rules for resits and resubmissions for undergraduate degrees as defined in Senate Regulation 5. The second year follows the rules and procedures for postgraduate programmes in Senate Regulation 6.

Resits may only be taken when the exam for the module to be resat is offered again.

15. External Examiners reports

The details of the External Examiner(s) for this programme and the most recent External Examiners' reports for this programme can be found at exampapers@Leicester [log-in required]

16. Additional features (e.g. timetable for admissions)

Admissions are in October into the final year of the BSc in Computer Science. After completing this, their 1st year with us, students will progress to the MSc in Advanced Computer Science or MSc in Advanced Computer Science (with Industry) as their 2nd year. In the first case, they will undertake their MSc individual project during the summer of their second year and submit their dissertation in September (24 months in total). In the second case, the project will be undertaken during the term following their return from placement.

Examinations are taken in January for first semester modules and in May for second semester modules. Additionally, the "With Industry" programme will be longer, as the placement, which can be of 3, 6, 9 or 12 months length depending on the interest of the student and the placement that can be secured, is an integral part of the programme and hence adds the respective time to the programme length. Students will automatically be registered as if they were to take a 12-month placement and the length of study will be corrected when the placement is secured and the actual length of the placement is decided upon.

In line with the other MSc offerings in the Department of Informatics, in the MSc year there are three kinds of modules in the MSc programmes. Details of the modules, including the semesters when they are delivered are shown in the module listing below.

Personal and Group Skills (PGS) (15 credits)

This module is offered in both semesters and provides students with skills supporting their employability. Students attend a series of seminars given by researchers from universities or companies followed by group discussions moderated by a member of staff. Each group prepares a joint essay based on the seminar and the discussions. Students also attend workshops organised by the Student Learning Centre on topics like project planning, writing and presentation skills, as well as career management.

Taught Modules (105 credits)

Taught modules are taken to a total of 105 credits of optional modules as indicated in the module listing below.

Optional modules are chosen, with the approval of the personal tutor, before the end of the second teaching week of each semester. Some optional modules may have pre-requisites (e.g. experience in certain programming languages or mathematical maturity) and, therefore, unadvisable to certain students. Any such pre-requisite will be explicitly stated in the corresponding module form available in the student's handbook.

Students are not allowed to take MSc level variants of modules that they have already taken at 3rd year level. In particular, this includes

- CO7002 as a variant of CO3002
- CO7091 as a variant of CO3091
- CO7093 as a variant of CO3093
- CO7095 as a variant of CO3095

- CO7099 as a variant of CO3099
- CO7102 as a variant of CO3102
- CO7105 as a variant of CO3105

Individual Project (60 credits)

Candidates entitled to proceed to a full MSc degree undertake, after examinations, an individual project on an approved topic according to the profile of each course, leading to the submission of a 15,000 word dissertation. The project is expected to contain some element of original work, and may involve informal collaboration with other organisations, subject to the previous approval of the project supervisor.

Employability Programme (with industry only, compulsory but non-credit bearing)

Candidates on the with Industry variant of the programme will be required to undertake study of two additional modules that equip them with skills and knowledge about the labour market and preparing them for applying for and undertaking placements. ADCO7221 and ADCO7222 are compulsory for 'with industry' students.



Programme Specification (Postgraduate)

FOR ENTRY YEAR: Choose an item.

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Appendix 1: Programme structure (programme regulations)

The University regularly reviews its programmes and modules to ensure that they reflect the current status of the discipline and offer the best learning experience to students. On occasion, it may be necessary to alter particular aspects of a course or module.

Updates to the programme

| Academic year | Update |
|---------------|---|
| 2024/25 | Optional module CO7113 AI for Space added |

MSc Advanced Computer Science (2 Year Programme)

Level 6/Year 3 2023/24

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 |
|----------|------------|------------|------------|
| Core | 45 credits | 15 credits | n/a |
| Optional | n/a | 30 credits | 30 credits |

120 credits in total

Core modules

| Delivery period | Code | Title | Credits |
|-----------------|--------|--------------------------------------|------------|
| Year long | CO3201 | COMPUTER SCIENCE PROJECT | 45 credits |
| Sem 1 | CO3101 | COMPUTERS, SOCIETY & PROFESSIONALISM | 15 credits |

Notes

N/A

Option modules

| Delivery period | Code | Title | Credits |
|-----------------|--------|---|------------|
| Semester 1 | CO3091 | COMPUTATIONAL INTELLIGENCE AND SOFTWARE ENGINEERING | 15 credits |
| Semester 1 | CO3095 | SOFTWARE MEASUREMENT AND QUALITY ASSURANCE | 15 credits |
| Semester 1 | CO3102 | MOBILE AND WEB APPLICATIONS | 15 credits |
| Semester 1 | CO3105 | C++ PROGRAMMING | 15 credits |
| Semester 1 | CO3219 | INTERNET AND CLOUD COMPUTING | 15 credits |
| Semester 2 | CO3002 | ANALYSIS AND DESIGN OF ALGORITHMS | 15 credits |
| Semester 2 | CO3093 | BIG DATA AND PREDICTIVE ANALYTICS | 15 credits |
| Semester 2 | CO3099 | FOUNDATIONS OF CYBER SECURITY | 15 credits |
| Semester 2 | CO3103 | TECHNOLOGY AND INNOVATION MANAGEMENT | 15 credits |
| Semester 2 | CO3111 | FUNCTIONAL PROGRAMMING | 15 credits |
| Semester 2 | CO3113 | AI FOR SPACE*** | 15 credits |

Notes

Choose 30 credits of options in each semester.

Level 7/Year 2 2024/25

Credit breakdown

| Status | Year long | Semester 1 | Semester 2 | Other delivery period |
|-------------|-----------|------------|------------|-----------------------|
| Core taught | n/a | n/a | n/a | n/a |

| Status | Year long | Semester 1 | Semester 2 | Other delivery period |
|----------------------|-----------|------------|------------|-----------------------|
| Optional | n/a | 60 credits | 60 credits | n/a |
| Dissertation/project | n/a | n/a | n/a | 60 credits |

180 credits in total

Option modules

| Delivery period | Code | Title | Credits |
|-----------------|--------|---|------------|
| Semester 1 | CO7210 | Personal and Group Skills* | 15 credits |
| Semester 2 | CO7210 | Personal and Group Skills* | 15 credits |
| Semester 1 | CO7091 | Computational Intelligence and Software Engineering | 15 credits |
| Semester 1 | CO7095 | Software Measurement and Quality Assurance | 15 credits |
| Semester 1 | CO7102 | Mobile and Web Applications | 15 credits |
| Semester 1 | CO7105 | Advanced C++ Programming | 15 credits |
| Semester 1 | CO7215 | Advanced Web Technologies | 15 credits |
| Semester 1 | CO7217 | Agile Cloud Automation | 15 credits |
| Semester 1 | CO7219 | Internet and Cloud Computing | 15 credits |
| Semester 1 | CO7223 | User Experience and Interaction Design** | 15 credits |
| Semester 1 | CO7224 | Mobile and Ubiquitous Computing** | 15 credits |
| Semester 1 | MA7077 | Operational Research | 15 credits |
| Semester 2 | CO7002 | Analysis and Design of Algorithms | 15 credits |
| Semester 2 | CO7093 | Big Data and Predictive Analysis | 15 credits |
| Semester 2 | CO7099 | Foundations of Cybersecurity | 15 credits |
| Semester 2 | CO7113 | Al for Space*** | 15 credits |

| Delivery period | Code | Title | Credits |
|-----------------|--------|--------------------------------|------------|
| Semester 2 | CO7200 | Algorithms for Bioinformatics | 15 credits |
| Semester 2 | CO7207 | Generative Development | 15 credits |
| Semester 2 | CO7214 | Service Oriented Architectures | 15 credits |
| Semester 2 | CO7225 | Service Design | 15 credits |

Core modules

| Delivery period | Code | Title | Credits |
|-----------------|--------|--------------------|------------|
| Term 3 | CO7201 | Individual Project | 60 credits |

Notes

This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules.

Appendix 2: Module specifications

See taught postgraduate module specification database (Note - modules are organized by year of delivery).

^{*} Students must take CO7210, but can take it in either semester 1 or 2.

^{**} Students can only choose one of CO7223 and CO7224, they cannot choose both.

^{***} If students choose to take CO3113 in their first year, they cannot take CO7113 in their second year.