Course Information Form

This Course Information Form provides the definitive record of the designated course

Section A: General Course Information

| Course Title | Computer Science, Computer Science (with Professional Practice Year); Computer Science (with Foundation Year) |
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| Final Award | BSc (Hons) |
| Route Code | BSCCSAAF/BSCSPAAF/BSCSFAAF |
| Intermediate Qualification(s) | |
| FHEQ Level | 6 |
| Location of Delivery | University Square Campus, Luton |
| Mode(s) and length of study | Full-time over 3 years<br><br>Full-time with Professional Practice Year over 4 years or with Foundation Year<br><br>Part-time pathway typically over 6 years |
| Standard intake points (months) | October, February |
| External Reference Points as applicable including Subject Benchmark | QAA Subject Benchmark Statement Computing (2019)<br><br>QAA FHEQ level descriptors (2014)<br><br>SEEC Credit Level Descriptors (2021) |

| Professional, Statutory or Regulatory Body (PSRB) accreditation or endorsement | This course is accredited by the BCS   Chartered Institute for IT to meet the requirements for registration as a Chartered IT Professional (CITP). Details of the requirements and skills are available within the CITP standard: https://www.bcs.org/media/1062/chartered-it-professional-standard.pdf |
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| HECoS code(s) | 100366 |
| UCAS Course Code | G400 |

| Course Aims | **Why study this course**<br><br>The course is broadly based yet carries enough depth to provide credible vocational skills; it helps you to prepare your career in the Computer Science through a mix of intellectual and professional development and practice; the school provides direct access to a wild range of special equipment in areas such as biometrics, robotics and computer graphics, which allows you to encounter the context of use of various concepts and emerging technologies in Computer Science.<br><br>**Educational Aims**<br><br>Computer Science is at the core of modern technology, and at the heart of a number of specialist technology fields. This course starts with fundamentals of Computer Science studies, principles of programming, concepts for computational thinking, databases and computer networks in the first year. And then providing a platform for developing more advanced knowledge and specialised skills in the second and third years, you'll cover essential areas such as systems architecture and security, as well as acquiring practical skills in a variety of modern programming languages and development frameworks. You'll also develop skills in systems modelling, software development and artificial intelligence, before focusing on your chosen specialist area during your final stage project with an agile project management. |
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| Course Learning Outcomes | Upon successful completion of your course you should meet the appropriate learning outcomes for your award shown in the table below | |
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| | **Outcome** | **Award** |
| | 1 Critically analyse problems and issues in core subject areas of Computer Science including (object oriented) programming, databases, artificial intelligence and software engineering from various perspectives | Bsc (Hons) Computer Science (all routes) |
| | 2 Creatively address and evaluate problems in the subject areas mentioned before Analyse, evaluate and synthesise information from a variety of sources and to be able to develop a justified conclusion | Bsc (Hons) Computer Science (all routes) |
| | 3 Evaluate, research and compare competing solutions and models in the area of Computer Science so as to enhance a professional and informed decision in a given application scenario | Bsc (Hons) Computer Science (all routes) |
| | 4 Communicate ideas both in writing and orally to appropriate academic or professional standards Show advanced knowledge and understanding of concepts in Computer Science including distributed architectures and related areas such as professional development and project management. | Bsc (Hons) Computer Science (all routes) |
| | 5 Communicate ideas both in writing and orally to appropriate academic or professional standards | Bsc (Hons) Computer Science (all routes) |
| | 6 Show advanced knowledge and understanding of concepts in Computer Science including distributed architectures and related areas such as professional development and project management. | Bsc (Hons) Computer Science (all routes) |
| | 7 Evaluate when and why you need information; find, use and communicate it in an ethical manner | Bsc (Hons) Computer Science (all routes) |
| | 8 Research and evaluate information from a number of sources | Bsc (Hons) Computer Science (all routes) |
| | 9 Apply formal and informal creativity and critical thinking techniques in the solution of problems. | Bsc (Hons) Computer Science (all routes) |
| | 10 Demonstrate knowledge and analytical understanding of professional practice by successfully completing an approved period of approved work place practice. | BSc (Hons) Computer Science (with Professional Practice Year) |

|  | The course structure across levels is implemented as follows: |
|---|---|
|  | The first year will cover the fundamentals of the Computer Science by encompassing the topics of Programming, Modeling, Software Engineering, Databases, Networking. The focus is placed on establishing problem solving processes based on a computational thinking. In addition, the professional development of the students is fostered within Term 1 of the unit Fundamentals of Computer Science Studies. |

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The second year is comprised of three specialised core-units that deepen the knowledge, understanding and application of the first year. While there is no direct prerequisite, there is a clear logic in structure from the first year to the second year:

- CIS116-2 Desktop Applications Development and Software Engineering follows the foundations provided in CIS016-1 Principles of Programming and Data Structures with a focus on object-oriented programming and software development in desktop environments.
- The second-year unit CIS098-2 Operational Information Security Management provides additional value to the understanding of risk, security and operating systems as delivered in the second term of Fundamentals of Computer Science Studies
- CIS006-2 Concepts and Technologies of Artificial Intelligence specializes on ideas and algorithms taught within CIS093-1 Mathematics and Concepts for Computational Thinking.

Students also need to select one of the two optional units to further their specialization at the direction of their choice.

The final year devotes 60 credits to the project. While the undergraduate project relates to the student working as an individual the 30 credit unit Agile Project Management addresses student interaction within a professional environment. The students have to work in a group and make decisions within professionally arranged project meetings.

**Teaching, learning and assessment strategies**

In addition, the unit Distributed Service Architectures provides a capstone to the subject focused experience from the second year by critically questioning the role of programming languages, software architectures, interoperability, interfaces and distributed systems.

*Assessment*

You are assessed in a variety of ways. Most units are assessed through coursework, group and individual projects, portfolios, essays, presentations or exams. You will also produce software artifacts in the area of your specialism. Constant feedback and advice from a supervisory or unit team will be provided to support you in your work.

At level 4 you are assessed on your understanding of the fundamental concepts of Computer Science and its application. You are required to comprehend the basic range of intellectual concepts which form the foundations of the subject and application area, and will be assessed on your ability to articulate such concepts in a coherent manner, in a variety of written assessments/written briefs. For example, there will be time constraint programming assignments as well as multiple choice tests.

At level 5 you are assessed on your ability to apply the basic concepts of the disciplines introduced in level 4 to existing controversies and issues on which there is already a body of research and critical opinion. You also should be able to demonstrate the inter-relationships between critical theory and practice. For example, the units  Concepts and Technologies of Artificial Intelligence  and  Desktop Applications Development and Software Engineering  will further your understanding of software paradigms with practical applications of object-oriented programming. Also new concepts (such as Computer Security) are introduced.

At level 6 you will be required to demonstrate independent thinking and initiative. This may be in the form of analyzing and criticizing current approaches and theory within software engineering and programme development. In all cases, you will be expected to show an awareness of the major theories and practices of the discipline. You will progress from well-defined briefs to more open-ended and challenging assessments, which culminate in the project    where you will be given freedom to choose your area of work.

| Unit | Unit Name | Level | Credits | Core or Option | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|------|-----------|-------|---------|----------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| CIS097-2 | Professional Practice Year (Computer Science and Technology) | 5 | 0 | Core | | | | | | | | | | A1 A2 | | | | | |

Section C: Assessment Plan

The course is assessed as follows :

**BSCSPAAF- Computer Science (with Professional Practice Year)**

| Unit Code | Level | Period | Core/Option | Ass 1 Type |
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| Glossary of Terms for Assessment Type Codes | |
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| CW-EPO | Coursework - e-Portfolio |
| CW-PO | Coursework - Portfolio |
| CW-RW | Coursework - Reflective Writing |
| EX | Exam (Invigilated) |
| EX-CB | Computer-based Invigilated Examination |
| IT-PT | Summative in-class test or phase test |
| PJ-ART | Coursework - Artefact |
| PJ-PRO | Coursework - Project Report |
| PR-OR | Practical - Oral Presentation |
| PR-OT | Practical - Other Skills Assessment |
| PR-VIV | Practical - Viva |
| WR-I | Coursework - Individual Report |
| WR-PR | Coursework - Problem Based Report |

## Administrative Information

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| Faculty | Creative Arts Technologies and Science |
| School | School of Computer Science and Technology |
| Head of School/Department | Paul Sant |
| Course Coordinator | Marc Conrad |