Course Specification
Part A

MSc Software Development
ECT042

Faculty of Engineering, Environment and Computing
School of Computing, Electronics and Mathematics

Academic Year: from 2019/ 20

Please note: This specification provides a concise summary of the main features of the course 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 on the learning outcomes, content, and teaching, learning and assessment methods of each module can be found in the Module Information Directory (MID), student module guide(s) and the course handbook.

We regularly review our course content, to make it relevant and current for the benefit of our students. For these reasons, course modules may be updated.

The accuracy of the information contained in this document is reviewed by the University and may be verified by the Quality Assurance Agency for Higher Education.

Template Revised August 2018
PART A Course Specification (Published Document)
MSc Software Development

1. Introduction

MSc Software Development provides potential career aspirations and exciting opportunities for any graduates who wish to pursue employment in software systems development and consultancy, such as software engineer, system analyst, architect, designers, programmers and testers. The programme also enables graduates to further their research as an academic researcher. The inclusion of theories and practical applications supported by industry case studies makes this course highly focussed and relevant to future employability and professional development.

The course focuses on the core technical knowledge of and skills in software development lifecycle from system requirements, design, implementation, to testing with emerging platforms, protocols and standards. Furthermore, it covers the key technological advancement in artificial intelligence, big data analysis, cloud systems, internet security as well as web-based and mobile application development.

The course covers the following key topics to reflect the latest technologies and employment trends in software systems development:

- Software engineering principles and development lifecycle
- Software architecture solutions
- Advanced software development frameworks
- Database management and big data
- Security in software development
- Web application development and cloud deployment
- Mobile application development
- Agile approach to team collaboration

The uniqueness of the course includes:

- A novel approach to learning in a Activity Led Learning (ALL) group-based software development project with access to the industrial strength collaboration coding platforms, such as Github, and agile concepts for building modern software systems;
- Opportunities to gain a L7 Certificate in Strategic Leadership and Management and a L7 Award in Professional Consulting through an embedded module, Global Professional Development - Consultancy, which has been developed with the Chartered Institute of Management (CMI);
- Research inspired teaching to enrich learning experience from a team of academic researchers (such as in individual research project), whose research excellence has been recognised in the Research Excellence Framework (REF) in 2014;
- State-of-the-art facilities in the modern Engineering and Computing Building with laboratories are equipped with the latest workstations and software packages;
- Opportunities to participate in field trips and Online International Learning (OIL) projects, to interact online with students at universities overseas on projects;
- Support and employment advice from careers advisors with talks and workshops;
- Culturae Mundi and Linguae Mundi services which run events and courses to celebrate the multiculturalism and multilingualism present on campus.

2 Available Award(s) and Modes of Study

<table>
<thead>
<tr>
<th>Title of Award</th>
<th>Mode of attendance</th>
<th>UCAS Code</th>
<th>FHEQ Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSc in Software Development</td>
<td>1 Year FT On-campus</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Year PT On-campus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PG Diploma in Software Development</td>
<td>Fall-back</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>PG Certificate in Software Development</td>
<td>Fall-back</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

3 Awarding Institution/ Body

Coventry University
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4 Collaboration</strong></td>
<td></td>
</tr>
<tr>
<td><strong>5 Teaching Institution and Location of delivery</strong></td>
<td>Coventry University</td>
</tr>
</tbody>
</table>
| **6 Internal Approval/ Review Dates** | Date of approval: 02/2019  
Date for next review: 2024/2025 |
| **7 Course Accredited by** |   |
| **8 Accreditation Date and Duration** |   |
| **9 QAA Subject Benchmark Statement(s) and/or other external factors** | The MSc Software Development degree has been designed in line with the QAA benchmarks and British Computer Society (BCS) requirements will be submitted to accreditation for meeting requirements of CITP Further Learning and partial fulfilment for CEng/CSci.  
Quality Assurance Agency for Higher Education (QAA) subject benchmarking statement for Master’s degrees in Computing, which can be accessed at:  
http://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-masters-degree-computing.pdf?sfvrsn=c490f681_16 |
| **10 Date of Course Specification** | Date of last revision: n/a  
Date of latest revision: 11/2018 |
| **11 Course Director** | Dr Yih-Ling Hedley |

### 12 Outline and Educational Aims of the Course

The main educational aim of the MSc Software Development course includes as follows:

- To deliver deep understanding of principles, methodologies and emerging technologies in the domain of software systems development;
- To apply the up-to-date methods, tools and techniques to modern software systems development;
- To provide specialist skills in building modern software systems and adapting to the challenges in the field;
- To develop technical and professional skills in demand for IT professionals and wider employment prospects;
- To establish a platform for further research as effective independent academic researchers in software systems development specialised areas;
- To enhance the awareness of the legal, ethical and social issues in developing and maintaining software systems;

### 13 Course Learning Outcomes

On successful completion of the course a student will be able to:

1. Critically evaluate methodology, tools and techniques to develop software effective solutions through the development lifecycle to real-world problems;
2. Critically evaluate software architectures, applications and related security issues to deliver appropriate and reusable software solutions to real-world problems;
3. Develop relevant technical skills in emerging technologies to adapt to the challenges in building modern software systems in a global context;
4. Develop a wide range of postgraduate level professional and transferable skills in building modern software systems in a team work environment;
5. Develop the awareness of professional, social, ethical, and legal issues along with commercial risk and management for software systems;
6. Develop research skills required for advanced software development topics selected according to the interests of individual students;
7. Critically evaluate and develop solutions to complex, inter-related, multi-faceted issues that can be found in a variety of organisations and professional contexts.

14 Course Structure and Requirements, Levels, Modules, Credits and Awards

The course structure reflects its main aims and has been designed to deliver the latest technologies and meet employment trends in software systems development. The modules provide the critical understanding, comprehensive knowledge and technical skills of the core software systems development areas covered by the course. The individual research project will require the students to conduct research into and analysis of the current issues and undertake a substantial work in addressing those issues.

The course adopts a combination of lectures, lab practical work as well as in-class discussions and presentations. Modules will be delivered as a combination of lectures, computer laboratory sessions, online learning, seminar discussions and tutorials. These are designed and set by the module leaders reflecting the specific topics with the aim of maximising attainment and learning.

Cascade of Awards:

MSc in Software Development

Postgraduate Diploma in Software Development

Postgraduate Certificate in Software Development

To achieve the award of Master's degree from study on the programme, a student must achieve the minimum credits specified in the University academic regulations.

The requirement for a MSc award in Software Development is as follows:

1. Achievement of the full curriculum, 180 CATS credits comprising all of the taught modules described in the programme of study

The requirement for a PgDip award in Software Development is as follows:

1. Achievement of 120 credits comprising all of the taught modules described in the programme of study

The requirement for a PG certificate award in Software Development is as follows:

1. Achievement of 60 credits comprising any taught modules described in the programme of study

Modules within the course, their status (whether mandatory or optional), the levels at which they are studied and their credit values are identified in the table below.

Please note that this course could be delivered in block format.

<table>
<thead>
<tr>
<th>Credit Level</th>
<th>Module Code</th>
<th>Title</th>
<th>Credit Value</th>
<th>Mandatory/Optional</th>
<th>Course Learning Outcomes</th>
<th>* Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>7002CRB</td>
<td>Global Professional Development – Consultancy</td>
<td>10</td>
<td>Mandatory</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>7032CEM</td>
<td>Secure Design and Development</td>
<td>15</td>
<td>Mandatory</td>
<td>1, 2, 3</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>7047CEM</td>
<td>Software Development Project</td>
<td>30</td>
<td>Mandatory</td>
<td>1, 2, 3, 4, 5</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>7048CEM</td>
<td>Computing Individual Research Project</td>
<td>50</td>
<td>Mandatory</td>
<td>1, 2, 3, 5, 6</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>7052CEM</td>
<td>Mobile Platforms and Application Development</td>
<td>15</td>
<td>Mandatory</td>
<td>1, 2, 3</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>7053CEM</td>
<td>Software Architecture and Engineering</td>
<td>15</td>
<td>Mandatory</td>
<td>1, 2, 3</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>7054CEM</td>
<td>Advanced Software Development and Frameworks</td>
<td>15</td>
<td>Mandatory</td>
<td>1, 2, 3</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>7055CEM</td>
<td>Data-Intensive Systems</td>
<td>15</td>
<td>Mandatory</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>7097CEM</td>
<td>Modern Web Technologies</td>
<td>15</td>
<td>Mandatory</td>
<td>1, 2, 3</td>
<td>1</td>
</tr>
</tbody>
</table>

* The running order of the modules is subject to change.
15 Criteria for Admission and Selection Procedure

An applicant within will normally be expected to possess at least one of the following:

- A good honours degree or an equivalent qualification in computing related subjects;
- An unclassified degree plus at least two years' further study or professional experience in computing related subjects;

For students whose first language is not English, they must demonstrate proficiency in the English language equivalent to IELTS 6.5. Alternatively students may be admitted with IELTS 6.0 if they attend and pass a compulsory five week pre-sessional English course, operated by Coventry University, before joining their master's programme.

Applications involving other UK or overseas qualifications, mature candidates, or candidates with experience are welcome and will be considered on their merit as below:

- Applications from those not possessing the equivalent of an honours degree in computing related subjects will be considered on individual merit and decisions will be based on careful evaluation of the capacity of the applicant to complete the programme successfully;
- The programme is subject to the general University admission procedures and access policies. A wide range of academic backgrounds is deemed suitable for entry to the programme. However, careful monitoring of applications to ensure that applicants are suited to the programme takes place. Where necessary and possible, applicants are interviewed, especially those who do not appear to meet standard admissions criteria;
- Accreditation for Prior Learning (APL) is in accordance with University regulations;
- The accreditation for Prior Experiential Learning (APEL) will only be awarded for achievements equivalent to masters’ level.

16 Academic Regulations and Regulations of Assessment

This Course conforms to the standard University Academic Regulations Postgraduate Mode R.

17 Indicators of Quality Enhancement

The Course is managed by the School of Computing, Electronics and Mathematics (CEM) Board of Study of the Faculty of Engineering, Environment and Computing (EEC).

The Programme Assessment Board (PAB) for the EEC Faculty is responsible for considering the progress of all students and making awards in accordance with both the University and course-specific regulations.

The assurance of the quality of modules is the responsibility of the Boards of Study which contribute modules to the course.

External Examiners have the opportunity to moderate all assessment tasks and a sample of assessed work for each module. They will report annually on the course and/or constituent modules and their views are considered as part of the Course Quality Enhancement Monitoring (CQEM). Details of the CQEM process can be found on the Registry's web site.

Students are represented on the Student Forum, Board of Study and Faculty/School Board, all of which normally meet two or three times per year.

Student views are also sought through module and course evaluation questionnaires.

The QAA's Higher Education Review undertaken in February 2015 confirmed that Coventry University meets the UK expectations regarding the:

- Setting and maintenance of the academic standards of awards;
- Quality of student learning opportunities;
- Quality of the information about learning opportunities;
- Enhancement of student learning opportunities

The assurance of the quality of modules is the responsibility of the Board of Study (BoS) which contribute modules to the courses. The SAB and PAB for the Faculty of EEC are responsible for considering the progress of all students and making awards in accordance with both the university and course-specific regulations.
Students are represented on the Student Forum, BoS and Faculty Board, all of which normally meet two or three times per year. Student views are also sought through module evaluation questionnaires.

External Examiners are appointed for all named University awards. The role of the External Examiner at module level is to ensure that academic standards are in line with national norms for the subject. External Examiners report annually on the programme and their views are considered as part of the Course Quality Enhancement Monitoring report (CQEM). Details of the CQEM process can be found on the Registry’s web site.

Lecturers, guest speakers, case studies and web materials are used when appropriate to ensure that the content of the MSc programme remains valid and contemporaneous, drawing on relevant expertise from within the course team. Research activity and interests, relevant scholarly and consultancy activities will be used to inform the module content within the MSc programme.

There is a diverse and active range of research activities influencing programmes in most areas of the Faculty. All staff teaching on the course is actively engaged in research directly related to the content of the module in which they are engaged. The last Research Excellence Framework (REF 2014) resulted in the following ratings for Computer Science & Informatics: 5% World-leading, 37% Internationally Excellent, 55% International Recognition, 3% National Recognition.

There is also a strong and regular industry input to the subject-base of the course. These include the links with employers through the CEM Industry Advisory Board (IAB), industry-focused collaborative research initiatives. Graduate destinations for the course have achieved 100% in 2017-2018.

18 Additional Information

Enrolled students have access to additional, key sources of information about the course and student support including:

- Faculty Student Handbook
- Software Development Course Handbook
- Module Guides
- Moodle Postgraduate Course Page and Module Webs
- Module Information Directory

The University and Faculty support is also available via links as follows:

- University library
- Sigma Maths and Stats Support Centre (in the University library), also at: https://www.coventry.ac.uk/study-at-coventry/student-support/academic-support/sigma-maths-and-stats-support/
- Centre of Academic Writing (in the University library), also at: https://www.coventry.ac.uk/study-at-coventry/student-support/academic-support/centre-for-academic-writing/
- EEC Student Web: https://share.coventry.ac.uk/students/EC/Pages/Home.aspx
- Coventry University Student Portal: https://share.coventry.ac.uk/students/Pages/Index.aspx
