

# Software Engineering

## Programme Information

2022.01, Approved

### Overview

Programme Code	46634
Programme Title	Software Engineering
Awarding Institution	Liverpool John Moores University
Programme Type	Degree with Foundation

### Awards

Award Type	Award Description	Award Learning Outcomes
Target Award	Bachelor of Science with Honours (Fnd) - BSHF	N/A

Alternate Award Names	
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Partner Name	Partnership Type
Oryx Universal College WLL	Franchised

### External Benchmarks

Subject Benchmark Statement	UG-Computing (2019)
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## Programme Offering(s)

Mode of Study, Mode of Delivery	Intake Month	Teaching Institution	Programme Length Programme Length Unit
Full-Time, Face to Face	April	Oryx Universal College WLL	4 Years
Full-Time, Face to Face	January	Oryx Universal College WLL	4 Years
Full-Time, Face to Face	September	Oryx Universal College WLL	4 Years

## Aims and Outcomes

Educational Aims of the Programme	<p>The overall aim of the course is to provide a balanced, integrated and practical based education in the tools, techniques and methods employed by the practitioner in the area of Software Engineering in organisations where software development is a major activity. The specific aims of the course are as follows: -To enable the student to acquire the skills needed in the investigation of user requirements and the development of a suitable design using the appropriate specifications and design methodologies. -To enable the student to acquire the skills required to produce software, which meets an external specification to the appropriate timescale and standards. -To enable the student to acquire the skills needed to determine the quality of software through the appropriate testing, verification and evaluation procedures. -To enable the student to acquire an understanding of the techniques and methods used in the estimation, planning and control of software projects. -To provide a suitable learning environment for the practical application of the concepts of software engineering in a realistic software development situation. - To encourage students to fully engage with the development of employability skills by completing a self-awareness statement. -To provide students with a fuller, systematic understanding of current and developing Software Engineering. -To enable students to explore the issues surrounding Software Engineering in Industrial contexts. -To facilitate students in the development of expertise and interest in topic areas of direct and complementary relevance to the workplace.</p>
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## Learning Outcomes

Code	Number	Description
PLO1	1	Apply computer programming skills to medium to large systems.
PLO2	2	Evaluate tools and methods for selection and use in the development process.
PLO3	3	Critically evaluate and test software systems against requirements.
PLO4	4	Undertake algorithm selection and deployment.
PLO5	5	Deploy systematic and comprehensive knowledge and understanding of Software Engineering concepts, principles and theories to computing problems.
PLO6	6	Use knowledge with originality in system modelling, requirements analysis and design.
PLO7	7	Critically evaluate and test a computer-based system.
PLO8	8	Effectively manage a software project.
PLO9	9	Work professionally as a member of a team.

PLO10	10	Use an extensive range of Software Development tools.
PLO11	11	Apply numerical methods to computing problems involving a quantitative dimension.
PLO12	12	Manage a software development process.
PLO13	13	Communicate complex information effectively by written or verbal means.
PLO14	14	Identify job roles and opportunities that reflect personal interest and expertise.
PLO15	15	Plan and manage personal learning and development.
PLO16	16	Critically reflect on the relationship of hardware to software in computer systems.
PLO17	17	Apply formal methods and modelling techniques to software engineering problems.
PLO18	18	Work on software engineering problems in an ethical way.
PLO19	19	Critically assess emerging and developing practices in Software Engineering.
PLO20	20	Use knowledge with originality and be innovative in Software Engineering.
PLO21	21	Apply problem solving in the context of large computer based systems.
PLO22	22	Perform systems modelling of computer-based systems as part of the development process.

## Course Structure

Programme Structure Description

<b>Programme Structure - 480 credit points</b>	
<b>Level 3 - 120 credit points</b>	
<b>Level 3 Core - 120 credit points</b>	CORE
[MODULE] 3500FETQR Academic English Skills (AES) Approved 2022.01 - 40 credit points	
[MODULE] 3503FETQR Project Study Approved 2022.01 - 20 credit points	
[MODULE] 3504FETQR Foundation Mathematics for Engineering and Technology 1 Approved 2022.01 - 20 credit points	
[MODULE] 3505FETQR Foundation Mathematics for Engineering and Technology 2 Approved 2022.01 - 20 credit points	
[MODULE] 3507FETQR Algorithms, Computing and Programming Approved 2022.01 - 20 credit points	
<b>Level 4 - 120 credit points</b>	
<b>Level 4 Core - 120 credit points</b>	CORE
[MODULE] 4000SEQR Introduction to Programming Approved 2022.01 - 20 credit points	
[MODULE] 4001SEQR Computer Systems Approved 2022.01 - 20 credit points	
[MODULE] 4002SEQR Professional Practice Approved 2022.01 - 10 credit points	
[MODULE] 4003SEQR Data Modelling Approved 2022.01 - 10 credit points	
[MODULE] 4004SEQR Software Engineering Principles Approved 2022.01 - 20 credit points	
[MODULE] 4005SEQR Software Engineering Workshop Approved 2022.01 - 20 credit points	
[MODULE] 4006SEQR Introduction to Web Development Approved 2022.01 - 20 credit points	
<b>Level 5 - 120 credit points</b>	
<b>Level 5 Core - 120 credit points</b>	CORE
[MODULE] 5000SEQR Group Project Approved 2022.01 - 20 credit points	
[MODULE] 5001SEQR Database Systems Approved 2022.01 - 20 credit points	
[MODULE] 5002SEQR Object-Oriented Systems Approved 2022.01 - 20 credit points	
[MODULE] 5003SEQR Data Structures and Algorithms Approved 2022.01 - 20 credit points	
[MODULE] 5004SEQR Automata, Languages and Computation Approved 2022.01 - 20 credit points	
[MODULE] 5005SEQR Mobile and Web Development Approved 2022.01 - 20 credit points	
<b>Level 6 - 120 credit points</b>	
<b>Level 6 Core - 120 credit points</b>	CORE

[MODULE] 6000SEQR Project Approved 2022.01 - 40 credit points
[MODULE] 6001SEQR User Experience Design Approved 2022.01 - 20 credit points
[MODULE] 6002SEQR Applied Data Science Approved 2022.01 - 20 credit points
[MODULE] 6003SEQR Virtualisation and Cloud Computing Approved 2022.01 - 20 credit points
[MODULE] 6004SEQR Embedded Systems Approved 2022.01 - 20 credit points

## Teaching, Learning and Assessment

Teaching, Learning and Assessment	<p>Core knowledge and understanding is acquired via lectures, tutorials, practical work, workshops and guided independent study. Independent study is used where appropriate resource material is available and increases as the programme progresses. Assessment methods are specified in each module specification. All learning outcomes in a module are assessed and the type of assessment specified for each outcome. Each module is assessed by examination and/or course work. The nature of the course work varies for each module. Cognitive skills are developed throughout the programme via tutorial, group discussion, teamwork, coursework, projects and presentations. Assessment of skills is by coursework and examinations. The final year project will further demonstrate the student's ability in this area. The assessment method for each module is specified in the module's specification. Practical skills are developed throughout the programme. The basic skills are provided at the lower levels. These are supplemented at higher levels by more advanced tools and techniques. The various computer programming modules at levels 4 and 5 provide relevant practice in industry standard languages. Problem solving skill is a key aspect of all programming related modules at each level. Some of these skills are practiced in the placement year. Specialist software is available in labs or from specified PCs in the libraries. The individual final year project provides an opportunity for students to apply all the techniques that they have been exposed to in a large-scale development. Practical skills are assessed via laboratory sessions, workshops, submission of reports, demonstration of systems, industrial placement and individual projects. Personal Development opportunities are embedded within the programme. Key skills are developed throughout the programme in a variety of forms. Specifically through a combination of research related coursework, guided independent study and projects, examinations, group work and presentations. Key skills are assessed as part of coursework, projects, written examinations and presentations.</p>
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### Opportunities for work related learning

Opportunities for work related learning
<p>Level 4: 4203COMP Professional Practice - this module provides students with an opportunity to consider their future role as a computing professional and develop a plan to enable them to progress in their chosen career. Level 5: 5200COMP Group Project – this module provides further insight into developing the role of the student becoming a computing professional.</p>

## Entry Requirements

Type	Description
Other international requirements	<p>Entry of level-3: Qualification: A score of 60% or above in Al Thanawiyya al Amma (Qatari curriculum High School exam conducted by the Ministry of Education and Higher Education in Qatar), or equivalent high school qualification approved by LJMU's academic registry (e.g. passing 5-IGCSE &amp; 2-AS subjects). English: IELTS score 5.0 OR an equivalent English Language Proficiency Assessment approved by LJMU's academic registry.</p>

## Programme Contacts

### Programme Leader

Contact Name
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### Link Tutor

Contact Name
Syed Naqvi

