PROGRAMME SPECIFICATION

Bachelor of Science with Honours (Fnd) in Software Engineering

Awarding institution	LJMU
Teaching institution	Oryx Universal College WLL
JACS Code	
Programme Duration	Full-Time: 4 Years
Language of Programme	All LJMU programmes are delivered and assessed in English
Subject benchmark statement	Computing (2019)
Programme accredited by	
Description of accreditation	
Validated target and alternative exit awards	Bachelor of Science with Honours (Fnd) in Software Engineering Diploma of Higher Education (Fnd) in Software Engineering Certificate of Higher Education (Fnd) in Software Engineering
Link Tutor	Syed Naqvi

Educational aims of the programme

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.

Alternative Exit/ Interim Award Learning Outcomes - Certificate of Higher Education (Fnd)

A student who is eligible for this award will be able to:

Develop computer programs using elementary programming constructs.

Discuss computer systems at the hardware and software levels.

Understand the different approaches required to solve computer-based problems.

Discuss a range of practical aspects of computing and apply the associated tools and techniques.

Identify a personal development plan to support their career path and recognise ethical, legal and professional aspects that relate to the computing profession.

Design and develop a website using appropriate tools and techniques.

Understand of the basics of data modelling and abstraction.

Communicate their ideas and take personal responsibility for their learning.

Discuss a range of computing challenges specific to Software Engineering.

Alternative Exit/ Interim Award Learning Outcomes - Diploma of Higher Education (Fnd)

A student who is eligible for this award will be able to:

Use object-oriented design in formulating an implementation.

Design, create, maintain and connect to a database.

Identify and implement common data structures and algorithms.

Develop software for a variety of platforms.

Identify and justify choices in programming languages.

Identify the professional skills required within the computing industry.

Demonstrate a range of skills including problems-solving as an individual or as part of a group.

Target award Learning Outcomes - Bachelor of Science with Honours (Fnd)

A student successfully completing the programme of study will have acquired the following subject knowledge and understanding as well as skills and other attributes.

A student who is eligible for this award will be able to:

1. Apply computer programming skills to medium to large systems.
2. Manage a software development process.
3. Critically reflect on the relationship of hardware to software in computer systems.
4. Apply formal methods and modelling techniques to software engineering problems.
5. Work on software engineering problems in an ethical way.
6. Critically assess emerging and developing practices in Software Engineering.
7. Use knowledge with originality and be innovative in Software Engineering.
8. Apply problem solving in the context of large computer based systems.
9. Perform systems modelling of computer-based systems as part of the development process.
10. Evaluate tools and methods for selection and use in the development process.
11. Critically evaluate and test software systems against requirements.
12. Undertake algorithm selection and deployment.
13. Deploy systematic and comprehensive knowledge and understanding of Software Engineering concepts, principles and theories to computing problems.
14. Use knowledge with originality in system modelling, requirements analysis and design.
15. Critically evaluate and test a computer-based system.
16. Effectively manage a software project.
17. Work professionally as a member of a team.
18. Use an extensive range of Software Development tools.
19. Apply numerical methods to computing problems involving a quantitative dimension.
20. Communicate complex information effectively by written or verbal means.
21. Identify job roles and opportunities that reflect personal interest and expertise.

22. Plan and manage personal learning and development.

Teaching, Learning and Assessment

The methods used to enable outcomes to be achieved and demonstrated are as follows:

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.

Programme structure - programme rules and modules

Level 6	Potential Awards on completion	Bachelor of Science with Honours (Fnd)
Core	Option	Award Requirements
6000SEQR Project (40 credits) 6001SEQR User Experience Design (20 credits) 6002SEQR Applied Data Science (20 credits) 6003SEQR Virtualisation and Cloud Computing (20 credits) 6004SEQR Embedded Systems (20 credits)		120 core credits at level 6 0 option credits at level 6

Level 5	Potential Awards on completion	
Core	Option	Award Requirements
5000SEQR Group Project (20 credits) 5001SEQR Database Systems (20 credits) 5002SEQR Object-Oriented Systems (20 credits) 5003SEQR Data Structures and Algorithms (20 credits) 5004SEQR Automata, Languages and Computation (20 credits) 5005SEQR Mobile and Web Development (20 credits)		120 core credits at level 5 0 option credits at level 5

Level 4	Potential Awards on completion	

Core	Option	Award Requirements
4000SEQR Introduction to Programming (20 credits) 4001SEQR Computer Systems (20 credits) 4002SEQR Professional Practice (10 credits) 4003SEQR Data Modelling (10 credits) 4004SEQR Software Engineering Principles (20 credits) 4005SEQR Software Engineering Workshop (20 credits) 4006SEQR Introduction to Web Development (20 credits)		120 core credits at level 4 0 option credits at level 4

Level 3	Potential Awards on completion	
Core	Option	Award Requirements
3500FETQR Academic English Skills (AES) (40 credits) 3503FETQR Project Study (20 credits) 3504FETQR Foundation Mathematics for Engineering and Technology 1 (20 credits) 3505FETQR Foundation Mathematics for Engineering and Technology 2 (20 credits) 3507FETQR ALGORITHMS, COMPUTING AND PROGRAMMING (20 credits)		120 core credits at level 3 0 option credits at level 3

Information about assessment regulations

All programmes leading to LJMU awards operate within the University's Academic Framework.
https://www.ljmu.ac.uk/about-us/public-information/academic-quality-and-regulations/academic-framework

Opportunities for work-related learning (location and nature of activities)

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.

Criteria for admission

Mature entry
Mature applicants will be considered on a case-by-case basis.

Overseas qualifications
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 & 2-AS subjects).

English: IELTS score 5.0 OR an equivalent English Language Proficiency Assessment approved by LJMU's academic registry.

External Quality Benchmarks

All programmes leading to LJMU awards have been designed and approved in accordance with the UK Quality

Code for Higher Education, including the Framework for Higher Education Qualifications in the UK (FHEQ) and subject benchmark statements where applicable.

The University is subject to periodic review of its quality and standards by the Quality Assurance Agency (QAA) Published review reports are available on the QAA website at www.qaa.ac.uk

Programmes which are professionally accredited are reviewed by professional, statutory and regulatory bodies (PSRBs) and such programmes must meet the competencies/standards of those PSRBs.

Support for students and their learning

The University aims to provide students with access to appropriate and timely information, support and guidance to ensure that they are able to benefit fully from their time at LJMU. All students are assigned a Personal Tutor to provide academic support and when necessary signpost students to the appropriate University support services.

Students are able to access a range of professional services including:

- Advice on practical aspects of study and how to use these opportunities to support and enhance their personal and academic development. This includes support for placements and careers guidance.
- Student Advice and Wellbeing Services provide students with advice, support and information, particularly in the areas of: student funding and financial matters, disability, advice and support to international students, study support, accommodation, health, wellbeing and counselling.
- Students studying for an LJMU award at a partner organisation will have access to local support services

Methods for evaluating and improving the quality and standards of teaching and learning

Student Feedback and Evaluation

The University uses the results of student feedback from internal and external student surveys (such as module evaluations, the NSS and PTES), module evaluation questionnaires and meetings with student representatives to improve the quality of programmes.

Staff development

The quality of teaching is assured through staff review and staff development in learning, teaching and assessment.

Internal Review

All programmes are reviewed annually and periodically, informed by a range of data and feedback, to ensure quality and standards of programmes and to make improvements to programmes.

External Examining

External examiners are appointed to programmes to assess whether:

- the University is maintaining the threshold academic standards set for awards in accordance with the FHEQ and applicable subject benchmark statements
- the assessment process measures student achievement rigorously and fairly against the intended outcomes of the programme(s) and is conducted in line with University policies and regulations
- the academic standards are comparable with those in other UK higher education institutions of which external examiners have experience
- the achievement of students are comparable with those in other UK higher education institutions of which the external examiners have experience

and to provide informative comment and recommendations on:

- good practice and innovation relating to learning, teaching and assessment observed by external examiners
- opportunities to enhance the quality of the learning opportunities provided to students

Please note:

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content, teaching, learning and assessment methods of each module can be found in module and programme guides.