Programme Specification Document

Approved, 2022.02

Overview

Programme Code	36661
Programme Title	Cyber Security and Networking
Awarding Institution	Liverpool John Moores University
Programme Type	Level 3/4/5 Qualification
Language of Programme	All LJMU programmes are delivered and assessed in English
Programme Leader	
Link Tutor(s)	Graham Sherwood

Partner Name	Partnership Type
Nelson and Colne College Group	Validated

Awards

Award Type	Award Description	Award Learning Outcomes
Target Award	Foundation Degree Science - FDSC	See Learning Outcomes Below

Alternate Award Names	

External Benchmarks

Subject Benchmark Statement	UG-Computing (2022)

Programme Offering(s)

Mode of Study, Mode of Delivery	Intake Month	Teaching Institution	Programme Length
Part-Time, Face to Face	January	Nelson Campus, Nelson and Colne College	4 Years
Part-Time, Face to Face	September	Nelson Campus, Nelson and Colne College	4 Years

Aims and Outcomes

Educational Aims of the Programme

• To provide students with the knowledge, skills, techniques and behaviours needed to support a career as a professional in computing • To provide a structured ladder of progression including well-rounded and valuable qualification at levels 4 and 5, tailored to the needs of local and regional employers, and supporting progression routes to level 6 and beyond. • To provide students with the maximum practicable flexibility of study (in terms of study mode, timescales and recognition of prior learning) thus enabling them to match their study commitments to personal needs and aspiration • To prepare students to work in an environment characterized by rapid change and the need to use knowledge and make judgements slightly beyond the taught syllabus.

Learning Outcomes

Code	Description
PLO1	Demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to computing and computer applications appropriate to cyber-security and networking.
PLO2	Synthesise knowledge and critically evaluate strategies and plans to understand the relationship between theory and real-world scenarios.
PLO3	Communicate appropriately with a range of audiences in person, in writing and through ICT
PLO4	Be able to work unsupervised, plan effectively and meet deadlines, and respond readily to changing situations and priorities.
PLO5	Understand and meet the needs of individuals, business and the community, and to understand how workplaces and organisations are governed.
PLO6	Recognise factors in environmental and societal contexts relating to the opportunities and challenges created by computing systems across a range of human activities
PLO7	Work effectively with colleagues, clients, suppliers or the public
PLO8	Integrate theory and practice through the investigation and examination of practices in the workplace.
PLO9	Demonstrate an understanding of practical constraints and computer-based systems in their context; recognise and analyse criteria and specifications appropriate to specific problems, and plan strategies for their solutions.
PLO10	Demonstrate an ability to specify, design and construct reliable and usable computer solutions.
PLO11	Evaluate approaches to cybersecurity and information security.

Code	Description
PLO12	Create, maintain and troubleshoot computer networks
PLO13	Deploy appropriate theory, practices and tools for the specification, design, implementation and evaluation of computer-based systems
PLO14	Analyse the extent to which a computer-based system meets the criteria defined for its current use and future development.
PLO15	Show problem solving and evaluation skills, draw upon supporting evidence and demonstrate a general understanding of the need for a high quality solution.
PLO16	Recognise the professional, economic, social, environmental, moral and ethical issues involved in the sustainable exploitation of computer technology and be guided by the adoption of appropriate professional, ethical and legal practices.

Programme Structure

Programme Structure Description

The part-time delivery of this programme is by infilling into sessions shared with full-time students, with all students taking a module sharing taught sessions and assessments. None of the modules within a level rely on knowledge delivered at the same level; level 4 modules rely solely on knowledge on entry and level 5 modules only on material covered at level 4. This means that the modules within each level can be taken in any order that timetabling constraints permit. It is, however, an absolute requirement that students have attempted all aspects of level 4, achieving at least 100 credits, before level 5 is attempted. For modules with practical competencies, students will be given multiple opportunities to demonstrate competency. A student who achieves a pass mark in the module but who has not yet demonstrated competency will be required to demonstrate competency before credit can be released. It will not be recorded as a failed attempt. Students who are not eligible for the target award on this programme but have passed all modules at level 4 will be awarded an HNC in Computing (programme 36663) as an alternative exit award.

Structure - 240 credit points	
Level 4 Core - 100 credit points	CORE
[MODULE] 4541NCCG Computing Investigative Project Approved 2022.01 - 20 credit points	
[MODULE] 4542NCCG Database Design and Implementation Approved 2022.01 - 20 credit points	
[MODULE] 4543NCCG Networking and Security Approved 2022.01 - 20 credit points	
[MODULE] 4544NCCG Programming and Software Development Approved 2022.01 - 20 credit points	
[MODULE] 4543NCCG Networking and Security Approved 2022.01 - 20 credit points	
Level 4 Optional - 20 credit points	OPTIONAL
[MODULE] 4546NCCG Computer Systems Architecture Approved 2022.01 - 20 credit points	
[MODULE] 4547NCCG Website Design and Development Approved 2022.01 - 20 credit points	
[MODULE] 4548NCCG Data Analytics Approved 2022.01 - 20 credit points	
Level 5 Core - 80 credit points	CORE
[MODULE] 5548NCCG Work-Based Learning Project Approved 2022.01 - 20 credit points	
[MODULE] 5551NCCG Operating Systems Design Approved 2022.01 - 20 credit points	
[MODULE] 5552NCCG Cryptography. Security and Forensics Approved 2022.01 - 20 credit points	
[MODULE] 5553NCCG Network Design, Implementation and Management Approved 2022.01 - 20 credit points	
Level 5 Optional - 40 credit points	OPTIONAL
[MODULE] 5549NCCG Cloud Computing and Programming Approved 2022.01 - 20 credit points	
[MODULE] 5550NCCG Data Structures and Algorithms Approved 2022.01 - 20 credit points	
[MODULE] 5554NCCG Machine Learning and Artificial Intelligence Approved 2022.01 - 20 credit points	
[MODULE] 5555NCCG Games Design and Development Approved 2022.01 - 20 credit points	
[MODULE] 5556NCCG User Experience and Design Interface Approved 2022.01 - 20 credit points	
[MODULE] 5557NCCG Data Mining Knowledge Acquisition Approved 2022.01 - 20 credit points	

Module specifications may be accessed at https://proformas.ljmu.ac.uk/Default.aspx

Approved variance from Academic Framework Regulations

Variance
Some modules within this programme contain assessed practical work that does not contribute to the module mark but that must be completed satisfactorily for the module credit to be awarded. (Approved 28 July 2021)

Teaching, Learning and Assessment

Key themes of the teaching and learning strategy on this programme are: • Varied assessment and feedback to enhance the experience of the student. • The availability of flexible teaching and learning modes, using face to face, on-line and blended learning. • Student support through the use of structured and targeted tutorials. • The development and application of theory into practice. • The use of inclusive learning methods • Development of students' practical skills. Teaching sessions will allow for the introduction of new skills, techniques, concepts and theories to enable students to develop their own practice further. Learning and teaching opportunities will be designed to allow for the transfer of learning between the different modules and the integration of theory with practice. This programme uses a variety of different assessment methods to ensure that all students, of whatever preference in assessment, have the opportunity to demonstrate their achievement of learning outcomes. Assessment is designed to be both formative, in building knowledge and skills, and summative in assessing whether and to what extent required outcomes have been met. In this FdSc, assessment is focused on evidencing that necessary knowledge and skills have been acquired. Modules typically have two assessments of different types. One is often designed simply to ensure that particular knowledge, skill and experience has been gained. Assessments of this type are commonly practical tasks or multiple choice online tests and are sometimes assessed on a pass/fail basis only. Pass/fail assessments must be passed for the module to be passed. The second assessment is a generally graded task in which the extent of a student's level of attainment can be judged. This is typically a presentation, written assignment or, occasionally, an online test. Students entering this programme will generally not have experienced a formal examination since GCSE, which for some will have been many years ago. For this reason, there are no formal, written examinations in level 4 of this programme. There are two examinations at level 5, which are included for the benefit of those students intending to progress to level 6. There is a synoptic work-based learning project in which students will apply their knowledge and skill to real-world situations.

Opportunities for work related learning

Work-related learning is included within this programme, so students will have the opportunity to engage in real world projects and activities. The programme has active links with industry and involves employers in the industrial projects, utilising real world case studies wherever possible. As this is a part time programme, students will apply knowledge attained in their employment to their academic studies.

Entry Requirements

Type	Description

Alternative qualifications considered	Candidates are selected on the basis of their ability to cope with and benefit from the programme. Their suitability can be demonstrated either through previous educational achievement or through experience and aptitude. Admission by prior qualification will normally require a minimum 48 UCAS Tariff points with the majority of the points gained in technical subjects. Typically, points can be derived from: o One GCE A level or Vocational A level pass or equivalent o Two AS level passes o BTEC National Diploma/Certificate o Other qualifications such as Scottish Highers, Welsh Baccalaureate, Irish Leaving Certificates, International Baccalaureate, with the required UCAS points o A pass in a recognised Access course o Equivalent Scottish or Irish qualifications Admission by experience and aptitude will be based on the length and type of the candidate's employment experience and his/her ability to demonstrate an aptitude and enthusiasm for the subject. As part of this process, candidates may be required to undertake aptitude tests and/or to provide personal and/or employment references. Candidates whose first language is not English will be required to demonstrate English language competence equivalent to IELTS 5.5 or higher.

Extra Entry Requirements