Course Information Sheet

BSc (Hons)

Computing

Mode and course length – Full-time (3 years)

Location – UCLan London campus (East India Docklands)

Awarding Body – University of Lancashire. As a registered Higher Education provider University of Lancashire is regulated by the Office for Students.

University of Central Lancashire London

Overview

Our BSc (Hons) Computing degree is designed to equip you with a broad understanding of many computing principles and to build skills in areas like programming, database management, software development, information security and network management.

This will enable you to explore which part of the diverse computing industry you want to kick-start your career in.

You will spend lots of time in our dedicated computing suite, learning on industry-standard equipment and software on a course that we co-created with employers, so you can be confident that you will graduate with the attributes that are in demand within the computing industry.

Course Delivery

Our courses are delivered through a variety of teaching and learning methods that provide students with a modern and engaging higher education experience. These include lectures, seminars, workshops, practical sessions, group projects, reflective practice, case studies, and work-related learning. You will also use our Virtual Learning Environment (VLE) to access learning resources, submit assignments, and engage in online discussions.

Each course is structured into 'modules', each focusing on specific subject areas. Module information, including learning outcomes and assessment requirements, will be provided through Module Handbooks and the VLE.

Assessment

Assessment methods are varied and may include written assignments, essays, case study analyses, presentations, reports, reflective logs, and research projects. These approaches allow you to demonstrate both your academic knowledge and your practical skills.

Most modules include more than one assessment, giving you the opportunity to develop a range of competencies. Formative feedback will be provided throughout your studies to help you progress and strengthen your performance.

Fees

Information about your course fee, including any annual fee increases or deposits (if required), can be found in your offer letter.

Additional Costs

During your course, you may be required to take extra or repeated modules to recover any modules you have failed. You will be charged an additional tuition fee to cover the costs of the extra or repeat modules. This additional fee will be based on the credits for the module(s) you repeat or take.

Modules

Core Modules

Year 1: CO1009 Academic and Professional Skills

The module develops a range of academic skills, providing a basis for success and progression at university and beyond. The aim is to teach these skills explicitly at the first stage of the undergraduate journey, working to improve not only academic competence, but to develop the confidence, resilience and critical abilities of students. The module covers practical written skills including planning of written work and use of academic register. Other elements include the use and process of research, helping students to find appropriate sources, assess their reliability and then integrate these into their own work using academic referencing. The module also teaches techniques for delivering effective presentations as well as transferrable skills such as teamwork and time-management.

Year 1: CO1011 Computing Principles

This module will help you explore the context, scope, purpose and history of computing, the role and the science of algorithms, abstraction, the binary numbering system and its representations. In addition, this module will give insight into Boolean logic and gates, fundamentals of computer hardware, understanding computer circuits, and the von Neumann model. It will also introduce you to the hardware, data, software, the nature of data and its operation. You will have a solid understanding of the foundational concepts in programming, computing and information technology and be equipped with the knowledge to explore further advanced topics in the field. This module will also emphasise the use of computers and technology throughout society and students' university and future careers.

Year 1: CO1013 Computer Programming

Programming is a core skill within an undergraduate computing degree. The knowledge and understanding you gain from this module will develop technical and transferable skills applicable to a wide variety of professional roles in business and industry including web and mobile development, software engineering, systems analysis, technical consulting, data science, systems administration, network services and cloud engineering. The purpose of this module is to provide you with opportunities to develop your computational thinking skills, to address different algorithmic approaches to programming challenges and to propose how they can be solved programmatically. The module will build on concepts covered in the Computing Principles module.

Year 1: CO1015 Database Design & Implementation

Data is a critical requirement in all aspects of business and databases are essential tools used to manage and analyse information. Common types of information include customers, orders, staff, inventory, financial transactions, web search results, etc. In a digital world, data draws on areas related to computer science, information technology and information systems and is an essential component that makes the storage, organisation, retrieval, and presentation of information important and valuable computing skills. This module will explore, discuss and examine the theory-based design and technical implementation of Database Management Systems (DBMS); from fundamentals of relational (structured) and non-relational (unstructured)

databases to database design principles, data modelling and query languages to technical, business, security and governance requirements and motivations.

Year 2: CO2013 Software Development

Software Development mixes aspects of computer science, information technology and software engineering to create opportunities to further extend and expand the knowledge and skills required to design, construct, test and deploy a non-trivial software application. In this module, you will build on knowledge and understanding from the Computing Principles and Database Design and Implementation modules and develop your programming language skills and application architecture to design and implement a scalable and maintainable real-world software solution. You will utilise appropriate and/or industry standard middleware systems and/or APIs in order to help manage front and back-end scalability, requests and messaging supported with integrated database services.

Year 2: CO2014 Information Systems Security

This module aims to provide you with the ability to operate as an information systems security practitioner. You will understand security threats and how to manage the risks they pose to an information system. This will teach you about methods for managing security technologies used around the world and effective approaches to ensuring security resilience. You will be prepared to contribute effectively to maintaining the security of information systems within an organisation and draw from foundational knowledge domains such as the Cyber Security Body of Knowledge (CyBOK). This module will thereby build a strong foundation for further studies in Information Security and Cybersecurity.

Year 2: CP2018 Networks & Communications

This module will introduce you to the principles of data networks, the inter-networked environment, and various technologies related to data networking using experimentation and programming assignments. It will also cover topics related to network layered architectures, including connectivity, topology, TCP/IP and OSI models. The module lays the foundations of the data networking course. It familiarises you with the networking environment, which forms the basis of the inter-networked computer infrastructure and the applications and terminology used in an inter-networked environment. You will be learned to understand, design, and troubleshoot basic data networks and build a foundation for advanced networking communications and information technology careers and/or study.

Year 2: CO2019 Business Intelligence

Business Intelligence plays a vital role in many modern organisations. In this module, you will learn how businesses make verifiable decisions based on analysing the data available to them. This includes distinct types of data analytics techniques such as descriptive, prescriptive, diagnostic and predictive analytics. The module will help you understand and apply data types, data acquisition, data cleansing, indicative data processes such as extract, transform, load (ETL), Big Data, Machine Learning and how to manage a data analytics project to gather intelligence in a business environment. Various data visualisation tools and techniques will be introduced to you to understand different business needs for different stakeholders. It will also cover the aspects of data security, privacy (GDPR) and ethical issues relevant to Business Intelligence and draw appropriately from foundational knowledge domains such as the Cyber Security Body of Knowledge (CyBOK). The module builds on knowledge and understanding from the Computing Principles and Database Design & Implementation modules and draws from

pertinent aspects of Computer Science, Information Systems, Information Technology and Data Science.

Year 3: CO3017 IT Project & Product Management

IT project and product management activities develop a range of technical and transferable skills that develop, implement and roll-out business priorities frequently in the context of contributions from computing, information systems and technology. This module will develop the knowledge, understanding and experience necessary to navigate the various complex challenges, behaviours and requirements associated with the variety of stakeholder expectations that are attached to successful completion of an IT project or product. You will explore what IT project and product management is, the tools and techniques involved and why and how it is a priority for businesses and organisations that seek innovation. You will learn about different approaches to product and project management, appraise contemporary development and delivery frameworks and evaluate the issues & risks that rise from innovating within an IT product/project development environment.

Year 3: C03018 Sustainability, Ethics & Professional Practice

This module provides an understanding of the sustainable, ethical, legal and professional implications of computing. You will be equipped with the knowledge, understanding and tools required to identify and address the ethical, environmental, legal and professional challenges that arise in the design, development and use of computer systems. Topics will be covered such as green computing, sustainable computing, the ethical dimensions of artificial intelligence, privacy, information security, accountability and transparency in computing related decision making and the relationship of IT to legal frameworks. You will develop your critical thinking skills, your ethical reasoning and communication skills and your future employability; all of which are essential for your professional career leadership in the computing industry. You will be able to apply sustainable and ethical principles to your professional practice in complex computing scenarios and make sound ethical decisions in the interests of all stakeholders.

Year 3: CO3019 Enterprise Systems

Enterprise systems are typically integrated, large-scale, mission critical or coordinated software solutions that businesses use to track and control complex operations. These solutions incorporate aspects of software engineering, information technology, information systems, cyber security, data science and AI. Enterprise systems provide accessible central services and/or dashboards to help automate business processes, provide services, reporting tools and support decision making. Organisations use these tools to monitor and improve productivity, efficiency and cost reduction. In this module, you will build on knowledge and understanding gained from the Database Design and Implementation, Software Development, Information Systems Security and Business Intelligence modules to gain knowledge and understanding of the key issues in acquiring, deploying and maintaining enterprise-wide software, organisational process views and process activities integrated across different functional areas.

Year 3: CO3020 Major Project (Computing)

The capstone project module will allow students to encapsulate and further develop the skills they have acquired during their degree. You will independently identify, justify and complete a significant opportunity that solves problems by demonstrating your ability to develop a complex system (product) within Computing domains. This will involve planning,

specification, design, execution, evaluation, presentation, and report-writing. You will learn how to combine, implement, and showcase your research, analytical, design, and applied skills. Throughout the process, you will communicate with an academic supervisor, from project idea (problem identification) to defining the project's scope and requirements, to completing and implementing the project (all phases). The module assessment requires a viva and dissertation summarising the project's details.