



Course Handbook
MSc Computing
2019-20
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School of Physical Sciences and Computing



Please read this Handbook in conjunction with the University's Student Handbook.

All course materials, including lecture notes and other additional materials related to your course and provided to you, whether electronically or in hard copy, as part of your study, are the property of (or licensed to) UCLan and MUST not be distributed, sold, published, made available to others or copied other than for your personal study use unless you have gained written permission to do so from the Head of School. This applies to the materials in their entirety and to any part of the materials.

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1. Welcome to the course

Welcome to the MSc Computing course and congratulations on gaining a place.

The information in this handbook contains important information about the MSc Computing course, its structure and content. You will find it a useful resource for the coming year. This document is not designed to be a standalone manual. It is vital that you talk to staff to supplement the information. If you have any questions – please ask.

As your course leader I will be your main point of contact throughout your period of study on the MSc or PG Diploma. We will meet regularly throughout the course and you should come to see me if you have any queries or problems with the course. Studying at Master's level provides you with an opportunity to develop your personal and academic skills. As well as being hard work it should also be a rewarding time. I hope you have an enjoyable time studying at UCLan.

-- Dr Martin Bateman

1.1 Rationale, aims and learning outcomes of the course



The wide spread use of computers in industry, commerce and education means that an in-depth understanding of computing and the problems and techniques of IT development can improve your prospects in today's competitive employment market. This course aims to build on your previous experience and enhance your employment prospects. In addition, with the choice of appropriate modules, it will help you towards becoming an accredited CISCO, Oracle or Microsoft professional. There are also opportunities to continue to PhD study.

The MSc Computing is an ideal course for those who are interested in particular combinations of topics that are not available on other MSc courses. It takes advantages of the School's core Masters modules, designed to develop the cognitive and transferable skills essential to all Masters students.

Aims of the Programme

PgDip Aims

- To develop the practical skills and understanding of theory necessary for the students to be responsible for the management, design, implementation and evaluation of computing projects
- To encourage students to adopt a professional approach to their work and to take responsibility for the legal and ethical implications of their work
- To foster awareness of current trends and research activities in the computing community
- To develop the students' critical evaluation, communication and self-management skills to a level appropriate for post-graduate students

MSc Aims (in addition to the above aims)

- To provide an opportunity for the students to plan, undertake and evaluate a substantial computing project
- To encourage and enable the students to become reflective and research-aware practitioners

Learning Outcomes

These are the skills and knowledge you should have acquired by the end of the course. The successful student will be able to

- Describe and evaluate principles, practices and techniques relevant to the design and development of computing systems.
 - Describe and evaluate tools and techniques for the management of computing projects.
 - Find and critically evaluate computing research literature
 - Evaluate and compare techniques and frameworks for developing complex software
 - Select and use appropriate tools and techniques to design, build and evaluate software.
 - Apply principles, practices and techniques to solve complex computing problems in specific domains (through optional modules)
 - Adopt a professional approach to ethical and legal issues relevant to a computing professional and understand the implications of their actions
 - Apply skills, techniques and knowledge to manage, plan, perform and evaluate a substantial Computing project
- Evaluate ideas, methods and systems in a coherent manner
 - Analyse and evaluate appropriateness of methods and techniques from a specialist area for the development of computer-based systems in a given situation
 - Locate and integrate information from multiple sources
 - Analyse and apply abstract concepts to solve problems
 - Communicate complex ideas to a diverse audience
 - Reflect critically on professional experience, devising and evaluating new approaches
 - Develop individual self-management and independent learning skills
 - Work as part of a team, identifying issues and devising responses

1.2 Course Team

Course Leader:

Martin Bateman CM111 x3004 mbateman@uclan.ac.uk

Academic Lead for Computing:

Chris Casey CM226 x3278 ccasey@uclan.ac.uk

Tutors:

Martin Bateman	CM111	x3004	mbateman@uclan.ac.uk
Nicky Danino	CM227	x3303	ndanino@uclan.ac.uk
Dan Fitton	CM218	x3277	dbfitton@uclan.ac.uk
Peggy Gregory	CM012	x3284	ajgregory@uclan.ac.uk
Janet Read	CM217	x3285	jcread@uclan.ac.uk
Katie Taylor	CM224	x3321	kitaylor@uclan.ac.uk
Li Guo	CM116	x3556	lguo@uclan.ac.uk
Vinh-Thong Ta	CM116	x3263	vtta@uclan.ac.uk

1.3 Expertise of staff

The course team have substantial experience of teaching at this level. They have research interests and industrial/academic experience relevant to your course. There is research into data communications and networks, mobile computing, computer security, HCI and software engineering, particularly Agile software development. We have collaborated with Sony, BAE and a variety of UK and overseas Universities. They will use this to enrich the postgraduate learning experience. Details of staff publications and interests are available on the School website. We also have several active research groups in the Computing area that you may want to get involved with.

1.4 Academic Advisor

You will be assigned an Academic Advisor who will provide additional academic advice and support during the year. They will be the first point of call for many of the questions that you

might have during the year. Your Academic Advisor will be able to help you with personal development, providing insight and direction to enable you to realise your potential.

1.5 Administration details



Campus Admin Services provides academic administration support for students and staff and are located in the following hubs which open from 8.45am until 5.15pm Monday to Thursday and until 4.00pm on Fridays. The hub can provide general assistance and advice regarding specific processes such as extenuating circumstances, extensions and appeals.

Computing and Technology Hub

C&T Building Room 235

Contact Details: candthub@uclan.ac.uk or +44 (0)1772 891994

1.6 Communication



The University expects you to use your UCLan email address and check regularly for messages from staff. This can be set to auto-forward to another email address and is also available via remote access. If you send us email messages from other addresses they risk being filtered out as potential spam and discarded unread.

Campus Admin Services and academic staff generally contact you via your UCLan email address. Details of term starting times, enrolment details and results will be sent to you by letter.

1.7 External Examiner

The University has appointed an External Examiner for your course to help ensure that the standards of the course are comparable to those provided at other higher education institutions in the UK.

Dr José Abdelnour-Nocera of the University of West London is the External Examiner who takes overall responsibility for checking the quality of the course, particularly for assessments and the way they are marked on the key modules. Other examiners have responsibility for other modules.

If you wish to make contact with your External Examiner, you should do this through your Course Leader and not directly. External Examiner reports will be made available to you electronically. The School will also send a sample of student coursework to the external examiner(s) for external moderation purposes, once it has been marked and internally moderated by the course tutors. The sample will include work awarded the highest and lowest marks and awarded marks in the middle range.

2. Structure of the course

2.1 Overall structure



Students embarking on the course may be enrolled on an MSc or a PGDip. The MSc comprises 9 modules (6 taught modules and a 3 module Project). The PG Dip comprises 6 modules (all taught). Students who satisfactorily complete the PG Dip may continue to the MSc route if they wish, by undertaking the 3 module Project.

The course is flexible and can be completed in a number of ways:

Full-time study (MSc includes the project, PGDip does not)

September start

3 modules	3 modules	Project
Sept – Jan	Jan – May	May – Sept

January Start

3 modules	Summer	2 Modules	Project
Jan – May		Sept – Jan	Jan - May

Part-time study (MSc includes the project, PGDip does not)

Over 3 years

3 modules	3 modules	Project
Year 1	Year 2	Year 3

Over 2 years

4 modules	2 modules and Project
Year 1	Year 2

2.2 Modules available

Each module is a self-contained block of learning with defined aims, learning outcomes and assessment. A standard module is worth 20 credits. It equates to the learning activity expected from one sixth of a full-time undergraduate year. Modules may be developed as half or double modules with credit allocated up to a maximum of 120 credits per module.

Compulsory modules

You must take the following modules

CO4804 Masters Project
CO4820 Critical Analysis
CO4403 OO Software Development
CO4754 User-Centred System Design & Evaluation
CO4830 IT Projects & Programmes

Optional Modules

You must take 2 of the following modules

CO4509 Digital Security
CO4510 Advanced Topics in IT Security
CO4608 Agile Systems Development
CO4705 Database Administration
CO4752 Web Application Development
CO4753 UX Away from the Desktop
CO4732 Advanced Topics in UX
CO4832 Independent Investigation

Optional Work Placement

In addition, you may gain work experience by taking CO4822, Professional Placement.

2.3 Course requirements



There are no course-specific requirements beyond the requirements of the University's Academic Regulations.

2.4 Module Registration Options

Discussions about your progression through the course normally take place after semester results are released (in January, June, September and October). These discussions provide an opportunity for you to make plans for your study over the next semester.

2.5 Study Time

Full time students are expected to study a 40-hour week; part-time students are expected to study the number of hours that are appropriate for the modules they are enrolled for. The contact time (in-class) will typically be three hours per week for each module. You should expect to do roughly an additional 6-9 hours during teaching weeks and some additional work before and after the teaching period. You will also have to attend the PDP sessions (1 hour per week) and in your second semester you have to attend a project preparation class (1 hour per week). The time outside of class contact should be spent on independent study, assignment and completing lab exercises.

2.5.1 Weekly timetable

A timetable will be available once you have enrolled on the programme, through the student portal.

2.5.2 Expected hours of study

The normal amount of work involved in achieving a successful outcome for a 20 credit module is 200 hours of study time - this includes attendance at UCLan, private study and time taken to prepare for and complete assignments.

2.5.3 Attendance Requirements



You are required to attend all timetabled learning activities for each module. Notification of illness must be made to CandTHubAttendance@uclan.ac.uk.

Exceptional requests for leave of absence must be made to your Course Leader.

We will monitor your attendance. It is your responsibility to make sure your attendance is recorded. You can check your attendance record through myUCLan. Occasional absences are not a problem, but you should discuss your attendance with the module tutor if your attendance is not recorded for more than one event that you attend.

You must only enter your own details on the attendance system. To enter information for anyone else is dishonest and would result in inaccurate records, which might mean that a student's problems might not be detected until it is too late for us to help. Any student who makes false entries can be disciplined under the student guide to regulations.

International students may have responsibilities under the UK Visas and Immigration (UKVI), Points Based System (PBS) - you MUST attend your course of study regularly; under PBS, UCLan is obliged to tell UKVI if you withdraw from a course, defer or suspend your studies, or if you fail to attend the course regularly.

If you have not gained authorisation for absence, do not respond to communications from the University and are absent for four weeks or more, you may be deemed to have withdrawn from the course. If so, the date of withdrawal will be recorded as the last day of attendance.

3. Approaches to teaching and learning

3.1 Learning and teaching methods

Teaching methods include lectures, tutorials, practical classes, discussion groups, and student presentations. As well as attending classes you will be expected to follow your tutor's suggestions for weekly reading and study. Materials and instructions will all be made available on Blackboard either prior to or after sessions. As a postgraduate student you are expected to be an independent learner, and to gradually take more initiative for your learning throughout the course. You already have a background in computing and experience of academic work. You are expected to build on this by reading around the subject, finding relevant material for yourself as well as following tutor suggestions and contributing to discussion.

3.2 Study skills

Study Skills - 'Ask Your Librarian'

https://www.uclan.ac.uk/students/support/study/it_library_trainer.php

You can book a one to one session with a subject Librarian via Starfish. These sessions will help with questions such as "My lecturer says I need a wider variety of sources in my references, what do I do?"

"I need to find research articles, where do I start?"

"How do I find the Journal of ...?"

"How do I use RefWorks?"

The course team support the development of study skills through individual and group feedback in class and through individual discussions with your module tutors and your

academic advisor. For more information on the general support provided by the University, see WISER <http://www.uclan.ac.uk/students/study/wiser/index.php>

3.3 Learning resources



3.3.1 Learning and Information Services (LIS)

The best place to start when exploring the Library resources available to you is;

- Your 'Subject Guide' can be found in the [Library Resources](#)
- Your 'My Library' tab in the [Student Portal](#)
- [Library search](#)

Extensive [resources](#) to support your studies are provided by LIS – library and IT staff. Take advantage of the free training sessions designed to enable you to gain all the skills you need for your research and study.

When you have complaints or problems with equipment, these should be reported to LIS (LISCustomerSupport@uclan.ac.uk) as well as to the relevant module tutor. LIS prefer to deal with problems first-hand and rather than indirectly through academic staff. Moreover, by dealing with LIS directly, your problem should be dealt with more quickly.

3.3.2 Electronic Resources

LIS provide access to a huge range of electronic resources – e-journals and databases, e-books, images and texts. See http://www.uclan.ac.uk/students/study/library/electronic_resources.php for more information. You should use the Discovery search engine to help locate relevant resources from the University's collection. (http://www.uclan.ac.uk/students/library/discovery_resource.php).

All modules will be supported by information on Blackboard and you should make sure that you make use of this outside as well as in class.

3.4 Personal development planning

Personal development planning is about assessing your own skills and abilities and planning how to develop them during (and after) your course. Technical development is part of this, but personal skills such as teamwork and communication skills are also important to your success at University and in your career. You might be surprised at how much emphasis employers put on these aspects. You will meet with your Academic Advisor to do personal development planning (PDP) and to discuss your progress.

3.5 Developing your career



Your University experience is not only about achieving your chosen award, it is also about developing as a person and realising your potential. We want you to gain the skills and attitudes that will help you to achieve your goals and aspirations.

The Careers Service (<http://www.uclan.ac.uk/students/careers/index.php>) offers a range of support for you including:-

- career and employability advice and guidance
- access to work placements, internships, voluntary opportunities, part-time employment and live projects
- workshops, seminars, modules, certificates and events to develop your skills

There is a daily drop in service available from 10.30am-3pm for CV checks and initial careers information. For more information visit the team (in Foster building near the main entrance) or access our careers and employability resources via the Student Portal.

4. Student Support

Information on the support available is at: <https://www.uclan.ac.uk/students/>

There are many student support services available in the University. In general you should go to your **module tutor** if you have questions about a particular module, your **Course Leader** and **Academic Advisor**, for course queries, the **Campus Admin Service** (The Hub) for administration queries and **the 'i'** for more general 'living' queries (such as accommodation, visas, disability or wellbeing support, etc.). If any of these cannot help you directly, they will direct you to a more appropriate source of help.

4.1 Academic Advisors



Your Academic Advisor is an academic member of staff who will discuss your progress with you and help you to deal with problems. They help you to review your aims and achievements. Full-time students should meet with their personal tutor twice per semester, and part-time students once per semester. Use Starfish to identify your Academic Adviser and the rest of the teaching team.

4.2 Students with disabilities

Chris Casey (ccasey@uclan.ac.uk) is the acting disability co-ordinator for students with disabilities in CEPS. Please contact him directly for further advice / support, particularly if you have not been allocated a Disability Advisor. He is not a specialist disability advisor but can help to ensure that appropriate arrangements have been put into practice.

4.3 Students' Union

The Students' Union offers thousands of volunteering opportunities ranging from representative to other leadership roles. We also advertise paid work and employ student staff on a variety of roles. You can find out more information on our website:

<http://www.uclansu.co.uk/>

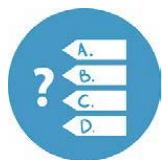
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5. Assessment

5.1 Assessment Strategy



Assessment is an important part of Higher Education. We use examinations to allow you to demonstrate your knowledge and the ability to apply that knowledge to solve problems. Because computing is a practical and vocational subject, course-work is important. You will often be expected to tackle realistic problems and to evaluate different ways of solving them.

The course learning outcomes demand that you develop a variety of knowledge, skills and abilities, which require a variety of assessment techniques:

- Formally invigilated tests and examinations* can be used to explore your knowledge and your ability to apply it to simplified situations. They also ensure that your own work is assessed.
- Presentations and vivas (interviews)* allow the demonstration of skills in spoken communication.
- Coursework* such as laboratory work, programming exercises, design exercises, written assignments and independent research allow you to demonstrate many practical and important skills that cannot sensibly be assessed by the previous methods.

In course assessment doesn't just assess what you can do – by doing the assessment you will learn and consolidate the skills you have. Your tutors will give you formal feedback on assignments to help you to do better on other assessments, but more importantly for your future career, to show how you can improve your performance on similar tasks in the future. By acting on the feedback from the lecturer, you will develop your competence and understanding.

The overall mark for each module is calculated as a weighted average of the coursework and examination marks. The details are given in the module descriptor held on Elearn Blackboard.

5.2 Notification of assignments and examination arrangements

How do I know what assignments I will have?

At the beginning of the year you will be issued with an indicative assignment schedule. Also at the start of each module, the module leader will tell you the latest date by which a piece of coursework will be released and the date by which you must submit it. This is to help you to plan your work. Examinations will be displayed on your on-line timetable.

How do I submit my assignments?

Assignments are usually submitted on-line through Elearn Blackboard, which gives you an electronic receipt. Keep a copy of it safe. *To reduce problems from lost assignments, keep a **complete** copy of the work you hand in.*

As far as possible your work will be marked anonymously, so assignment work submissions must not contain your name.

Aim to complete the coursework before the hand-in date to allow a margin of safety in case of technical problems. The University provides you with the software and hardware relevant to your course. If you choose to use your own equipment you are responsible for backing it up. Therefore please note that **failed/lost computers; failed/lost hard-drives, etc will not be accepted as an excuse for late submission.**

Meeting deadlines and dealing with problems in good time are essential parts of your preparation for industry. If you have a problem that may make it difficult to meet a deadline, discuss it with the relevant lecturer **before** the deadline if possible.

If you fail to submit a piece of work without a good reason, you will be given 0% for that work. This will make passing the module very difficult and may mean that you have extra work to complete over the summer. **It makes sense to hand work in before the deadline, even if it is incomplete.**

Will I be penalised for late work?

Except where an extension of the hand-in deadline date has been approved (using extenuating circumstances forms), lateness penalties will be applied in accordance with University policy as follows:

(Working) Days Late	Penalty
1 - 5	maximum mark that can be achieved is 50%
more than 5	0% awarded

If you anticipate that you will have difficulty in meeting assessment deadlines or you have missed or are likely to miss in-semester tests you must apply for an extension or for an adjustment to be made because of Extenuating Circumstances, which can be done online

via myUCLan (this can be accessed in the Useful Tool link on the Student Portal home page of the UCLan website).

5.3 Referencing

In your assignments, use Harvard convention for referencing whenever you make a reference to someone else's work. You can find lots of information about this on the internet, but you will be given more information about it during your course. If you are in any doubt, ask a lecturer for guidance.

5.4 Confidential material

If you use personal or commercially confidential information in your assignments (e.g. in your project), you have ethical and legal responsibilities to respect confidentiality and maintain the anonymity of individuals and organisations in your work assignments.

Students who do projects for clients must arrange for a client project agreement to be signed by the participants to ensure that they all understand their responsibilities.

5.5 Cheating, plagiarism, collusion or re-presentation

Please refer to the information included in section 6.6 of the University Student Handbook for full definitions. The University uses an online Assessment Tool called Turnitin. A pseudo-Turnitin assignment will be set up using the School space on Blackboard to allow students to check as many drafts as the system allows before their final submission to the 'official' Turnitin assignment. Students are required to self-submit their own assignment on Turnitin and will be given access to the Originality Reports arising from each submission. In operating Turnitin, Schools must take steps to ensure that the University's requirement for all summative assessment to be marked anonymously is not undermined and therefore Turnitin reports should either be anonymised or considered separately from marking. Turnitin may also be used to assist with plagiarism detection and collusion, where there is suspicion about individual piece(s) of work.

5.6 How do I know that my assessed work had been marked fairly?

Assessment is an integral part of the course. Module staff work closely together to design assessments, agree the marking criteria and approve final versions of assessments to ensure that these are appropriate. The criteria for assessment will be communicated to you clearly during the module teaching.

All module staff engage in development and training in assessment, marking and feedback. Once the assessments have been completed the module team will discuss the assessment methods and marking criteria, prior to starting to mark, so that there is a common understanding of what is expected of students. All assessed modules have moderation built into the marking process. Moderation involves sampling students' assessed work to make sure that the learning outcomes and agreed marking criteria have been interpreted and applied in the same way. This ensures that you and your fellow students are treated equitably and that the academic standards are applied consistently. During the marking process the module leader will co-ordinate moderation to ensure that at least 10% of assessed work (or a minimum of three pieces) has been reviewed by other markers and any concerns about consistency or accuracy addressed with the whole module team. Your work may or may not be part of this sample, but the processes for developing assessments and marking criteria as well as moderation mean that you can be confident that teaching staff are marking assessments to the same criteria. Module teams may then use feedback from moderation to improve clarity about the nature and purpose of future assessment, or to make changes if required.

Modules are also moderated externally. The module leader will arrange for the external examiner to receive a sample of work for review and comment. External examiners cannot change individual grades, but can act as 'critical friends' and confirm that marking standards

are in line with other, similar courses in the sector. If, on reviewing the sample, external examiners feel that the marking criteria have not been applied consistently the work of the whole cohort will be reviewed.

6. Classification of Awards

The University publishes the principles underpinning the way in which awards and results are decided in [Academic Regulations](#). Decisions about the overall classification of awards are made by Assessment Boards through the application of the academic and relevant course regulations.

7. Student Feedback



You can play an important part in the process of improving the quality of this course through the feedback you give. You will elect a student representative through the Student Union. The Staff Student Liaison Committee is a formal way of providing feedback through the student representative. However, the rep should also raise issues directly with staff on your behalf, if necessary.

Do not simply save up problems to be raised at the meeting. To help resolve them quickly, problems should be raised with relevant staff, your course representative, or support staff as soon as you are aware of them.

7.1 Student Staff Liaison Committee meetings (SSLCs)

The purpose of a SSLC meeting is to provide the opportunity for course representatives to feedback to staff about the course, the overall student experience and to inform developments which will improve future courses. These meetings are normally scheduled once per semester. Details of the Protocol for the operation of SSLCs is included in section 8.2 of the University Student Handbook.

8. Appendices

8.1 Programme Specification

UNIVERSITY OF CENTRAL LANCASHIRE

Programme Specification

This Programme 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.

Sources of information on the programme can be found in Section 17

1. Awarding Institution / Body	University of Central Lancashire / University of Central Lancashire Cyprus
2. Teaching Institution and Location of Delivery	UCLan main campus Cyprus Campus
3. University School/Centre	Physical Sciences & Computing School of Sciences
4. External Accreditation	Cyprus Agency for Quality Assurance & Accreditation in Higher Education
5. Title of Final Award	MSc in Computing PGDip in Computing
6. Modes of Attendance offered	Full-time and Part-time with optional professional placement
7a) UCAS Code	
7b) JACS Code	I100
8. Relevant Subject Benchmarking Group(s)	Computing
9. Other external influences	QAA (NQF for HE); BCS, the Institute for IT
10. Date of production/revision of this form	September 2019
11. Aims of the Programme	
PgDip Aims	
<ul style="list-style-type: none">• To develop the practical skills and understanding of theory necessary for the students to be responsible for the management, design, implementation and evaluation of computing projects• To encourage students to adopt a professional approach to their work and to take responsibility for the legal and ethical implications of their work• To foster awareness of current trends and research activities in the computing community• To develop the students' critical evaluation, communication and self-management skills to a level appropriate for post-graduate students	
MSc Aims (in addition to the above aims)	

<ul style="list-style-type: none"> To provide an opportunity for the students to plan, undertake and evaluate a substantial computing project
<ul style="list-style-type: none"> To encourage and enable the students to become reflective and research-aware practitioners
12. Learning Outcomes, Teaching, Learning and Assessment Methods
A. Knowledge and Understanding
<p>The successful student will be able to</p> <p>A1. Describe and evaluate principles, practices and techniques relevant to the design and development of computing systems.</p> <p>A2. Describe and evaluate tools and techniques for the management of computing projects.</p> <p>A3. Find and critically evaluate computing research literature</p> <p>A4 Evaluate and compare techniques and frameworks for developing complex software</p>
Teaching and Learning Methods
<p>Lectures, directed reading, tutorial exercises, visiting speakers, case studies, supervised and unsupervised practical work. Project and literature-based research.</p>
Assessment methods
<p>Assessment methods are specified in each module syllabus. All learning outcomes in a module are assessed with the mode of assessment specified for each outcome of the assignment. Assessment methods include written reports, portfolios, practical assessment and presentations, examinations.</p>
B. Subject-specific skills
<p>The successful student will be able to</p> <p>B1. Select and use appropriate tools and techniques to design, build and evaluate software.</p> <p>B2. Apply principles, practices and techniques to solve complex computing problems in specific domains (through optional modules)</p> <p>B3. Adopt a professional approach to ethical and legal issues relevant to a computing professional and understand the implications of their actions</p> <p>B4. Apply skills, techniques and knowledge to manage, plan, perform and evaluate a substantial Computing project</p>
Teaching and Learning Methods
<p>Practical work, lectures, tutorials, discussion groups, peer review, individual supervision, self-directed learning project preparation and supervisory advice, peer review.</p>
Assessment methods
<p>A variety of methods are used to assess skills, these include lab exercises, written and practical coursework, project work and the final project report.</p>
C. Thinking Skills
<p>The successful student will be able to</p> <p>C1. Evaluate ideas, methods and systems in a coherent manner</p> <p>C2. Analyse and evaluate appropriateness of methods and techniques from a specialist area for the development of computer-based systems in a given situation</p> <p>C3. Locate and integrate information from multiple sources</p> <p>C4. Analyse and apply abstract concepts to solve problems</p>
Teaching and Learning Methods
<p>Practical work, directed research, on-line discussion groups, student-led seminars, supervisions</p>
Assessment methods
<p>Paper-based examinations, evaluations within a portfolio of work, practical problem solving, written coursework, project report, online discussion and presentations</p>
D. Other skills relevant to employability and personal development
<p>The successful student will be able to</p> <p>D1. Communicate complex ideas to a diverse audience</p> <p>D2. Reflect critically on professional experience, devising and evaluating new approaches</p> <p>D3. Develop individual self-management and independent learning skills</p> <p>D4. Work as part of a team, identifying issues and devising responses</p>
Teaching and Learning Methods
<p>Communication skills are developed through group-work activity, project preparation and supervision, preparation of and participation in student-led seminars. Students can develop and improve their written skills through directed supervision sessions.</p>
Assessment methods
<p>These transferable skills are assessed through presentations, coursework, examination, project work, project interview and project report.</p>

13. Programme Structures*				14. Awards and Credits*	
Level	Module Code	Module Title	Credit rating		
Preston Campus					
Level 7	CO4804	Masters Project	60	<p>Masters Degree In Computing Requires 180 credits (90 ECTS) at Level 7</p> <p>Optional professional placement route requires successful completion of CO4822 which has a notional credit value of 60 but does not contribute to the required award total</p> <p>PGDip in Computing Requires 120 credits (60 ECTS) at level 7</p> <p>Post-Graduate Diploma is normally a target award for students who do not wish to carry out a project</p>	
	CO4403	Object-Oriented Software Development	20		
	CO4754	User-Centred System Design and Evaluation	20		
	CO4820	Critical Analysis	20		
	CO4830	IT Projects & Programmes	20		
	Two modules from:				
	CO4509	Digital Security	20		
	CO4510	Advanced Topics in IT Security	20		
	CO4608	Agile Systems Development	20		
	CO4705	Database Administration	20		
	CO4752	Web Application Development	20		
	CO4753	UX Away from the Desktop	20		
	CO4732	Advanced Topics in UX	20		
CO4832	Independent Investigation	20			
CO4822	Optional module: Professional Placement	60 notional credits			
Cyprus Campus					
Level 7	CO4804	Masters Project	60 (30 ECTS)	<p>PGCert in Computing Requires 60 credits (30 ECTS) at level 7</p>	
	CO4820	Critical Analysis	20 (10 ECTS)		
	CO4830	IT Projects & Programmes	20 (10 ECTS)		
	Four modules from:				
	CO4752	Web Application Development	20 (10 ECTS)		
	CO4755	Mobile Application Development	20 (10 ECTS)		
	CO4505	Network Communication & Routing	20 (10 ECTS)		
	CO4509	Digital Security	20 (10 ECTS)		
	CO4513	Network Operations & Management	20 (10 ECTS)		
	CO4103	Ethical Hacking	20 (10 ECTS)		
	CO4102	ERP Systems	20 (10 ECTS)		
	CO4832	Independent Investigation	20 (10 ECTS)		
	MK4023	Digital Marketing	20 (10 ECTS)		
CO4609	or e-Marketing	20 (10 ECTS)			
CO4822	Optional module: Professional Placement	60 notional credits / 30 ECTS			
15. Personal Development Planning					
<p>Professional skills are developed through dedicated course modules, as well as through discussion, seminars, project work, coursework and support sessions.</p> <p>Technical competence alone is not enough for the good computing professional and so is not sufficient for the award of any Masters within the School of Computing, Engineering & Physical Sciences. The Programme aims identify the need to develop interpersonal skills and generic transferable skills as well as subject-specific knowledge, understanding and skills. The course team believe that this combination is needed to ensure the employability of the graduate.</p> <p>The following transferable skills are developed:</p> <ul style="list-style-type: none"> critical evaluation presentation skills report-writing skills investigative (information finding) skills 					

- problem solving
- independent learning
- team work
- time-management.

The design of the course has been directed to the development of these practitioner skills alongside technical competence. The skills will be developed and assessed throughout the programme as a whole.

The process begins with an induction scheme that runs throughout the first semester aimed at supporting students as they transition to Masters level study. Students are encouraged to reflect on Masters level reading and writing skills, personal development plans, career opportunities, and reflective learning. In addition an academic advisor is allocated at enrolment with whom students are encouraged to discuss their personal development.

16. Admissions criteria

(including agreed tariffs for entry with advanced standing)

**Correct as at date of approval. For latest information, please consult the University's website.*

For All Campuses:

Applicants should have one of the following:

- Honours degree of 2.ii or above, in a computing or closely-related discipline
- Degree and substantial relevant industrial experience
- BCS postgraduate diploma plus PGD project
- Qualifications deemed by the University to be equivalent to the above

Applicants able to demonstrate appropriate work-based experience or possessing alternative professional qualifications will be considered on an individual basis.

Interviews may be required as part of the admissions process.

Students will be expected to display communication skills appropriate to an Honours graduate. In particular, students whose first language is not English will be required to demonstrate competence in the language. The normal minimum standard required is IELTS (at least 6.5), TOEFL (at least 600-pbt or 80-ibt) or equivalent.

For Cyprus Campus:

Preference is given to applicants with a Bachelor (Hons) degree in a relevant subject (e.g. Computing, Computer Science, Electronics, Computer Engineering) taught in English from a recognised university.

The Course Leader (programme coordinator) is directly involved in the admissions process closely collaborating with the University Admission Office), and has the ultimate decision on each applicant.

17. Key sources of information about the programme

- http://www.uclan.ac.uk/courses/msc_pgdiip_computing.php
- <http://www.uclancyprus.ac.cy>
- **student handbook**
- **Postgraduate Prospectus**

18. Curriculum Skills Map

Please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

Level	Module Code	Module Title	Core (C), Compulsory (Comp) or Option (O)	Programme Learning Outcomes															
				Knowledge and understanding				Subject-specific Skills				Thinking Skills				Other skills relevant to employability and personal development			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
LEVEL 7	CO4804	Masters Project	C	✓	✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓	
	CO4403	OO Software Development	Comp*	✓	✓	✓	✓	✓				✓		✓	✓	✓			
	CO4754	Interaction Design & Evaluation	Comp*	✓		✓	✓	✓			✓		✓	✓	✓	✓	✓		✓
	CO4820	Critical Analysis	Comp	✓		✓					✓		✓		✓	✓	✓		
	CO4830	IT Projects & Programmes	Comp	✓	✓	✓	✓	✓	✓	✓		✓		✓		✓	✓	✓	✓
	CO4510	Advanced Topics in IT Security	O	✓		✓		✓	✓			✓	✓	✓	✓	✓	✓		
	CO4509	Computer Security	O	✓		✓			✓			✓	✓	✓	✓	✓			
	CO4608	Agile Systems Development	O***	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CO4705	Database Administration	O***	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓			
	CO4732	Advanced Topics in UX	O	✓		✓		✓	✓			✓	✓	✓	✓	✓	✓		
	CO4752	Web Application Development	O	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓			
	CO4753	UX Away from the Desktop	O	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓			
	CO4755	Mobile Application Development	O****	✓		✓	✓	✓	✓			✓	✓	✓		✓			
	CO4832	Independent Investigation	O			✓			✓			✓		✓	✓	✓		✓	
	CO4822	Professional Placement	O													✓	✓	✓	
	CO4505	Network Communication & Routing	O****	✓		✓			✓			✓	✓	✓	✓	✓			✓
	CO4513	Network Operations & Management	O****	✓		✓			✓			✓	✓	✓	✓	✓			✓
	CO4103	Ethical Hacking	O****	✓		✓		✓	✓	✓		✓	✓	✓	✓	✓		✓	
	CO4102	ERP Systems	O****	✓		✓			✓			✓		✓		✓			
	MK4023	Digital Marketing	O****	✓		✓			✓			✓		✓		✓	✓	✓	
CO4609	e-Marketing	O****	✓		✓			✓			✓		✓		✓	✓	✓		

Note: Mapping to other external frameworks, e.g. professional/statutory bodies, will be included within Student Course Handbooks

* Compulsory for Preston Campus – not available at Cyprus Campus

** Compulsory for Preston Campus– optional for Cyprus Campus

*** Not available at Cyprus Campus

****Cyprus Only Options

Some option modules may not be available in a given year. Timetabling may prevent some option combinations.

19. LEARNING OUTCOMES FOR EXIT AWARDS:

For **each exit award available**, list learning outcomes relating to the knowledge and understanding, subject specific skills, thinking, other skills relevant to employability and personal development that a typical student might be expected to gain as a result of successfully completing each level of a course of study.

Learning outcomes for the award of: PGDip Computing

- A1. Describe and evaluate principles, practices and techniques relevant to the design and development of computing systems.
- A3. Find and critically evaluate computing research literature.
- B1. Select and use appropriate tools and techniques to design, build and evaluate software.
- B2. Apply principles, practices and techniques to solve complex computing problems in specific domains (through optional modules)
- B3. Adopt a professional approach to ethical and legal issues relevant to a computing professional and understand the implications of their actions
- C1. Evaluate ideas, methods and systems in a coherent manner
- C2. Analyse and evaluate appropriateness of methods and techniques from a specialist area for the development of computer-based systems in a given situation
- D1. Communicate complex ideas to a diverse audience
- D2. Reflect critically on professional experience, devising and evaluating new approaches

Learning outcomes for the award of: PGCert Computing

- A1. Describe and evaluate principles, practices and techniques relevant to the design and development of computing systems.
- B2. Apply principles, practices and techniques to solve complex computing problems in specific domains (through optional modules)
- C1. Evaluate ideas, methods and systems in a coherent manner
- D1. Communicate complex ideas to a diverse audience