Faculty of Engineering and Environment
Department of Computer Science and Digital Technologies

MSc Computing, Engineering and Information Sciences

Programme Handbook
2015 - 2016

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1 About this handbook

This handbook is designed to provide a guide to your programme of study at Northumbria. It does not provide all of the information that you will need although it attempts to tell you where to find most of that information. The latest version of much of the further information that you need is to be found in a comprehensive and definitive form on your "My Northumbria" site and through the eLP (Blackboard). This document is also supported by the Faculty Handbook which you should have been issued at the start of the programme of study.

2 Welcome from the Programme Leader

Welcome to your MSc Computing, Engineering and Information Sciences (CEIS) programme, the Faculty of Engineering and Environment, in Northumbria University. We hope you will find your studies interesting, useful, challenging and fun! I am sure you will find the course, engaging and beneficial to you and your future career aspirations. As your programme leader I will do all that is possible to ensure your course meets your expectations. I look forward to working with you over the coming year.

Programme Leader: - Shelagh Keogh (BA (Hons), MRes, PMBCS. FRSA)

3 Department Introduction

The Department of Computer Science and Digital Technologies at Northumbria University encompasses all of our work in games, robotics, mobile applications, animation and digital visual effects, computer forensics and ethical hacking, network technology and website design. Our students, staff and researchers develop and refine cutting edge technologies that impact on the way we all live our lives. They work cross-discipline, exploring the way that technology can impact on health, travel, security intelligence, artificial intelligence and many other sectors.

4. Specialist Equipment

Your programme of study is unique to you; hence defining specialist equipment would depend on what you have chosen as the content of your degree course. If you are interesting in Networking, Programmng and or integrated software then Pandon Building would be the central resource for your content. If the content of your programme of study is more on the engineering side of the faculty then you would be mainly dependent on the Ellison Building.

5. Who's Who and Communication?

If you have any queries on procedure, processes or support in the first instance you should go to the Administration Office in Pandon Building. The administrative staff will be able to answer your questions or be able to give you the name of the most appropriate member of staff to speak to in order to address your questions or need for support.

4.1 Who to go to for help

You will meet a broad range of academic, administrative and technical staff throughout your studies. The majority of staff will be drawn from the various subject areas within the Faculty. However, we also draw upon subject specialisms outside the Faculty and external consultants, industrialists and advisors.

Staff from the faculty and from the wider university (such as the University Library, IT Services and Student Support and Wellbeing) are here to help you get the most out of your Programme. In this section, we introduce you to some of the key people who will support you at Faculty and subject area level.

Student Support Team

The Student Support Team is available to assist all students requiring information and/or advice. The team is located in room EB B201 Ellison Building.
Opening times: Monday – Thursday 8.30 – 17.00 hours Friday 8.30 – 16.30 hours
Email: ee.studentsupport@northumbria.ac.uk
Telephone: 0191 227 4722

Programme Leader: **Shelagh Keogh**

Office Location: Pandon Building, room 112

Email: shelagh.keogh@northumbria.ac.uk

Telephone: 0191 2437293

Office Hours: Shelagh Keogh's timetable will be posted on her office door during teaching weeks: Room 112 Pandon Building.

Your Programme Leader is the academic leader for your Programme and is responsible for managing the programme on a day to day basis, working with other Faculty and University staff – academic, administrative and technical – as needed. Your Programme Leader is committed to helping you get the most out of the Programme and, where relevant, will liaise with your Module Tutors and other relevant staff to make sure that they are aware of your needs and of how you are doing.

Programme Administrator

Your Programme Administrator holds all the key information regarding your Programme. All programme administrators manage such processes as enrolment, option choice, day to day correspondence, confirmation of attendance letters, marks entry, etc. They can be contacted via the Pandon Administration Office. Your programme administrator is Andrew Cox.
a.cox@northumbria.ac.uk

Module Tutors

For each module of study, you will have a designated Module Tutor. The Module Tutor is responsible for the organization of the module and supporting your learning and assessment on that module. Details of each module tutor can be found on your eLearning portal (Blackboard).

4.2 Communication

Contacting Your Programme Leader

The best way to contact the programme leader is by making an appointment via the email system. Drop-in times will be available throughout the semester this will be posted on the programme leader's office door.

Academic staff may teach on many modules and programmes, in addition they may have other roles and responsibilities which take them from their office, thus it is advisable to make an appointment if you wish to see them. You can do this via email or you can just turn up at their office. Occasionally you may be able to have an immediate appointment, but don't be disappointed if you are asked to return at a mutually convenient time. Please contact staff to cancel if you are unable to make the arranged appointment.

Email

Email is used extensively throughout the University and is a very effective method of communication between students and staff. You will be automatically allocated an email address by the University once you have enrolled. Do remember that the Northumbria email address is the one that should be used when contacting University and Faculty staff. It is also the one that is used by staff to make contact with you, so do make sure that you check it regularly, particularly if you also use a personal email account. Please be aware that staff may not reply to your email immediately due to their other duties and activities.

eLearning Portal

The eLearning Portal (eLP), sometimes referred to as Blackboard, is a very important resource for students. You will find specific information related to the modules you are taking, such as copies of lecture and seminar handouts, assignment briefings, instructions, and announcements. In general your Programme Leader uses you individual email to send you any notifications that are necessary. It is therefore important that you check the eLP regularly – at least daily – for new announcements and new material.

Plasma TV Screens

The Faculty has a number of plasma screens in the Pandon and Ellison buildings. These are also used to display announcements, events and opportunities.

Programme Notice Board

(First Floor of Pandon building just through the floor entrance door to your left)

This board is mainly used for additional but not essential information. This may be career opportunities, professional bodies information etc. You should check this board from time to time but most important notices are sent to you through the email system so it is particularly important to keep a check of your emails daily.

PLEASE NOTE: *IT IS REALLY IMPORTANT THAT IF YOU HAVE AN ISSUE YOU CONTACT US AS SOON AS POSSIBLE – WE ARE HERE TO HELP*

6. Programme Information

Here you will find specific information on your programme of study. There is a national requirement that all university programmes of study have a publicly available Programme Specification and this section is based on that programme specification. The full and definitive version of the programme specification can be found at http://www.northumbria.ac.uk/programmespecs/.

a. Programme Aims

The MSc Computing, Engineering and Information Sciences (CEIS) programme was specifically designed to allow students to update, extend and deepen their knowledge in a flexible programme, to enhance their career opportunities in industry, or as a preparation for further academic research. The programme complements the existing postgraduate programmes in the Faculty. The programme provides individually tailored study plans, utilising taught modules from approved postgraduate programmes and individual projects.

The programme aims to:

i. produce graduates who can apply fundamental principles and techniques to produce creative solutions
ii. evaluate theoretical frameworks and models and select appropriate techniques and tools for analysis of complex systems
iii. develop a critical awareness and evaluation of current issues in the selected subject discipline in order to foster the ability to produce new insights and propose new solutions
iv. competently evaluate and apply a range of research techniques using both primary and secondary sources to successfully undertake a research or investigative project in an appropriate subject discipline
v. enhance the academic, personal and professional development of all students and foster their abilities to be self-evaluative, reflective practitioners and life-long learners

- develop the application of professional and ethical principles, standards and practices in the selected subject discipline.

b. Programme Learning Outcomes

a) Knowledge and Understanding

Students will be able to demonstrate specialist in-depth knowledge and critical understanding of:

a1. essential facts, concepts, principles, theories, methods, techniques and tools in the selected subject discipline and the related topics.
a2. role, nature, evolution and limitations of methods and technologies appropriate to the subject discipline and relevant interdisciplinary areas
a3. major issues at the frontiers of research and development in the selected subject discipline
a4. professional, ethical and legal issues involved in the development and operation of a range of new technologies and methodologies.

b) Intellectual Skills

Students will be able to:

b1. apply knowledge and understanding to systematically identify and analyse complex problems and offer appropriate strategic solutions using a range of effective methods and tools.

b2. critically examine, understand, apply, discuss and evaluate the philosophies, techniques, tools and methods relevant to the subject discipline for a range of applications

b3. use evidence and criteria to integrate, evaluate, interpret and synthesise information and data from a variety of sources

b4. understand how the boundaries of knowledge are advanced through research and advanced scholarship

b5. apply and evaluate appropriate research techniques to undertake a research problem

b6. identify, plan and execute a significant individual project by conducting independent research and applying a range of specific skills and established techniques in research methodologies and literature reviewing.

c) Practical Skills

Students will be able to:

c1. define problems and identify the key issues and parameters affecting their solutions

c2. select and apply scientific principles to model problems

c3. select and use appropriate methods and techniques to analyse non-routine problems

c4. search for, select, retrieve, evaluate and apply information to support research, using a rigorous, scientific approach

c5. manage projects, integrating practical skills across disciplines effectively and safely.

Transferable/Key Skills

Students will be able to:

d1. learn independently, enhancing their existing skills and developing new ones to a high level, enabling them to sustain their own continued professional development

d2. demonstrate creativity in problem solving and decision making in complex and unpredictable solutions

d3. demonstrate initiative, personal responsibility, personal enterprise, self-reliance and self-direction, acting autonomously in planning and implementing tasks at a professional level

d4. manage their time and resources efficiently

d5. engage in critical self-appraisal of their learning experience, personal strength, limitation and performance

d6. justify, organise, complete and appraise research at a high level over an extended period.

c. Programme Structure

A core consisting of the module in Research Methods and Project Management (IS0749) and a MSc Project or dissertation is included.

Full Time: September start:
The programme typically runs over three semesters. In the first two semesters taught modules are studied (120 credits). In the third semester students complete their project (further 60 credits). During the summer students will take a vacation or obtain work experience. The placement office can help students to obtain unpaid work experience.

Students would typically study:

Semester 1	Semester 2	Summer	Semester 1
Sept –Jan	Feb-May	June-Sept	Sept-Jan
IS0749 Research and Project Management (20)		Vacation or Work Experience	MSc Project / Dissertation CG0174 / IS0438/EN0542/EN0739/IS0718/ LI0599/LI0762
A total of 50 credits selected from a list of available modules in accordance with a study plan approved by SLT	A total of 50 credits selected from a list of available modules in accordance with a study plan approved by SLT		

Full time: January start:
The programme runs over three semesters. In the first two semesters taught modules are studied. In the third semester students complete their project. During the summer students will take a vacation or obtain work experience. The placement office can help students to obtain unpaid work experience.

Students would typically study:

Semester 2	Summer	Semester 1	Semester 2
Feb-May	June-Sept	Sept-Jan	Feb-May
IS0749 Research and Project Management (20)	Vacation or Work Experience	**Continuation of IS0749 Research Methods and Project Management (20)**	MSc Project / Dissertation CG0174 / IS0438/EN0542/EN0739/IS0718/ LI0599/LI0762
A total of 50 credits selected from a list of available modules in accordance with a study plan approved by SLT		A total of 50 credits selected from a list of available modules in accordance with a study plan approved by SLT	

Part Time:

The programme typically requires three years of study, with the final year devoted to the project. The sequencing of the modules depends upon when a student starts. The diagram below shows a typical study pattern:

<table>
<tr><th></th><th>Year 1</th><th colspan="2">Year 2</th><th>Year 3</th></tr>
<tr><td>Semester 1
Sept-Jan</td><td>A total of 30 credits selected from a list of available modules in accordance with a study plan approved by SLT</td><td rowspan="2">IS0749 Research Methods and Project Management (20)</td><td>A total of 20 credits selected from a list of available modules in accordance with a study plan approved by SLT</td><td rowspan="2">MSc Project / Dissertation
CG0174 / IS0438/EN0542/EN0739/IS0718/ LI0599/LI0762/</td></tr>
<tr><td>Semester 2
Feb-May</td><td>A total of 30 credits selected from a list of available modules in accordance with a study plan approved by SLT</td><td>A total of 20 credits selected from a list of available modules in accordance with a study plan approved by SLT</td></tr>
</table>

d. Learning Teaching and Assessment Strategy

The learning, teaching and assessment methods fully comply with the QAA Code of Practice on Assessment. The methods are diverse, incorporating the best techniques to fit both the particular subject under study and the depth of learning required at postgraduate level.

At the start of each semester all students are provided with full details of the learning, teaching and assessment styles for each module via the eLearning portal.

Each module adopts a teaching and learning strategy that is appropriate to the subject matter covered. Some modules adopt a traditional approach with initially, learning and teaching taking place via lectures, small group seminars and practical skills sessions in computing laboratories and classrooms. Deep learning is facilitated by applying theoretical concepts in practical ways in order to reinforce lecture topics and maximise "learning by doing". Other modules follow a flexible learning approach with the students being provided with the appropriate materials and the lecturers acting as learning facilitators, supporting the students in a flexible manner.

The internet and the University and Faculty web resources, including eLP, are used to support lectures, seminars, computing laboratory and classroom sessions and private study. Directed and supported independent learning quickly becomes prevalent as students are expected to become increasingly creative, reflective, independent learners and researchers. Seminars are used extensively for student centered discussion and debate of major and emerging issues. Case studies and open-ended, complex and unpredictable problems are presented for analysis, solution and critical evaluation. Students are encouraged to reflect on their own professional experience, and to make use of this where appropriate.

The taught modules are followed by the Individual Project which is the showcase for Masters students to demonstrate their technical, intellectual, management and research skills. All students are prepared for the project via earlier modules covering project management and research methods. Students are encouraged to identify a project which is linked to industry or based on a real-world problem, to increase the project's validity and the Faculty's enterprise links.

During your semester two you will receive lectures to support your preparation for your forthcoming project. It is essential that you attend these sessions.

All students are allocated an academic project supervisor who is a suitable subject specialist. Supervisors meet their students regularly on a one-to-one basis, providing full support throughout the period of the project. Milestones are scheduled to facilitate progress, with students submitting an outline proposal and detailed Terms of Reference to their supervisors at appropriate times. Further support is available via eLP. Students are also provided guidance in the form of lectures from the Project Tutor about the process and expected deliverables.

Wherever possible and appropriate a student will be paired with an academic supervisor who is an active researcher in the student's area of research. In this way it is hoped to maximise the opportunity for MSc research to contribute towards publishable research papers, for the mutual benefit of the student, the Faculty, the University and the discipline itself.

Assessment is seen as an integral part of the learning process and the programme has been designed to ensure that the overall balance of assessment tasks measures the learning outcomes in an effective and efficient way. Both

summative and formative elements are utilised, the latter to provide students with feedback which is developmental and timely.

Great care has been taken to ensure that the learning outcomes for each individual module are not over-assessed, and do not produce unmanageable workloads for students and staff. This measure ensures that students can produce work to the best of their abilities and that staff can be confident that the marks they give are correct. Where appropriate student achievement is measured by assignment, individual portfolio or individual project rather than formal examination, which is generally accepted to be less applicable at this higher level of study. Modules with 100% coursework make use of mechanisms such as vivas and presentations to ensure integrity of assessment.

Learning, teaching and assessment of transferable skills permeate the whole of the programme.

In accordance with Assessment Regulations for Northumbria Awards, this programme has a formal progression point after completion of 120 credits.

Full-time students can complete the programme for a minimum of 3 semesters of study starting in September. Part-time students typically require 3 academic years to complete the course but in special circumstances students can complete in 2 years.

e. Feedback on Assessment

Formative assessment (this is not marked but rather is designed to help you improve your work) and feedback is incorporated into modules wherever appropriate and students are encouraged to participate in formative activities through linking those activities to PDPs and using the formative activities to develop the skills, techniques and expectations of summative assessment. Summative assessment methods include assignments, exams, technical reports, case study analyses, presentations, portfolio and project work.

f. Student Feedback

The University and the Faculty regard obtaining student views as an essential part of the "quality assurance" process - both for immediate concerns affecting current operation of the programme, and for longer term development and enhancement.

Student views are sought at a variety of levels, and in a variety of ways. You will probably find that many lecturers will ask you to complete a questionnaire concerning their particular module/teaching. Unless specified otherwise these questionnaires are treated anonymously, and it is a significant help to staff if you complete and return these questionnaires as accurately and as quickly as possible.

In addition each programme has **student representatives** on the staff-student liaison committees. These operate informally at a programme/programme level with several meetings each semester with the programme leader, and a more formal Faculty committee which normally meets once each semester. These provide a forum for discussing operational and policy matters relating to the programmes. Any matters of general concern to students on the programme may be raised, but it is expected that matters relating to an individual student or module would be raised on an individual basis at least in the first instance.

Details of the number of representatives for each set of students (part time, full time, by seminar group etc) will be announced early in the first semester, and the programme leader will invite nominations and arrange for an election if necessary.

7. Programme and Assessment Schedule and Assessment Criteria

As this is a programme with many options available it is not possible to give a full schedule of all permutations of modules assessment deadlines. Help and support for your timetable will be given to you in your induction week. Each assessment will assessed the skills and competences outlined in your Programme Information previously. Each assessment framework will be different, but an example of the criteria that is used for masters is appended to this guide in appendix C.

8. External Examiner Information

The external examiner for this programme is Dr John Lloyd from the University of Newcastle.

9. Resources and Laboratories

At the start of the semester teaching you will be given the module information via the eLearning portal. Generally all resources and laboratory equipment that you will need will be in the Pandon Building or the Ellison Building.

10. Selecting Modules for My Programme

Each student follows their own individual study plan. Students discuss and agree their study plan at the start of their study with the programme leader. The study plan must be coherent. The study plan and any changes to study plans are approved by the appropriate approvals committee (FRASC). Students can study any modules from any of the MSc programmes across the Faculty. A full list of the modules available can be viewed in appendix 1. The FRASC validates the plans on an individual basis.

Students must select a title of their award that will be related to the modules studied. The SLEA also approves this on an individual study plan basis. There are limited types of titles for this programme as displayed below:

MSc Informatics

MSc Applied Computing

MSc Computer Networks

MSc Computer Security

MSc Computer Forensics

MSc Management Information Systems

MSc Information Studies

MSc Software Engineering

MSc Embedded Computer Systems

MSc Engineering and Technology

MSc Information Resource Management

Study plans are subject to timetabling and other operational constraints.

Constraints

- All study plans are subject to the approval of the Faculty's approvals committee
- A plan must be coherent
- A plan must be supported by the timetable
- All modules are subject to viability of student numbers
- IS0749 Research and project management module must normally be included

These requirements ensure an academic coherence for each student's programme, with the title of the final award being determined by the subject discipline encompassed by the project.

Some modules will be taught conventionally, others may be taught using independent or distance learning materials, with the support of an appropriate tutor.

You can see further information about each module in one of the following places:

http://nuweb.northumbria.ac.uk/live/webserv/mod.php

Timetable information on each module is available on:

http://information.unn.ac.uk/

Students are required to fully complete the form in appendix B within the induction week of the programme. Your programme leader will set up consultancy time to discuss selection made.

11. FAQ

How much time should I spend on a module?

Generally, As much as it takes! Different students have different levels of expertise and aptitude for particular subjects, and some people learn faster than others. As a guideline a full time notional student workload (NSW) for a 15 week semester is 600 hours. This would give an average workload of 40 hours learning activity per week for a "notional" student.

As a real student (rather than a notional one) you will find that your actual hours differ from this figure. In addition students also need to spend time on non-learning activities - finding where the lecture is, waiting in the library queue to check out a book, reading mail messages and a myriad other things.

What is the pass mark for an assignment?

50% is the % pass mark for all postgraduate modules.

How do I pass the programme?

The easiest way is to pass all the assessment on modules.

What if I was ill for an exam, or had other good reasons for not doing well as well as I could normally have done?

If there are extenuating circumstances, you should discuss this with the Administrative Office in the first instance, and complete a person extenuating circumstances form (available from the Pandon Administrative Office). The

Progress and Awards examination board will then be able to consider your situation and may make allowances, or give you a *deferral* assessment, to give you a second chance during the summer.

What is the difference between a deferral and a referral?

A deferral will count as your first attempt. A referral is only allowed if you have failed to get a pass mark in a module. The maximum recorded mark for a referral is the pass mark for the module. For a deferral you can get up to 100%. If you fail a deferral, you can still be allowed a referral. If you fail a referral you may be able to repeat the module next time it runs, but will be charged the module fee.

What if I still don't pass all my modules?

The Progress and Awards board is allowed to consider disregarding up to 20 points of study for a Postgraduate Diploma or M.Sc. If you don't qualify for a M.Sc. the board will consider you for a Postgraduate Diploma, and then for a Postgraduate Certificate (minimum of 60 points needed).

Who decides my marks?

The lecturers on a module will recommend marks to an examination board, which agrees the marks in consultation with an internal moderator and an external examiner from another University.

Do I have to wait until June to get any marks or feedback on how I am doing?

No, module tutors will give marks, and personal feedback on each assignment and examinations after it has been marked. The marks are provisional until the examination board has made its decisions. Once the provisional marks for semester one have been collated you will be provided with a transcript of your marks for the semester.

What if I think the Progress and Awards Board, or the Subject Division examination board have been unfair?

You have a right of appeal, but should consult a programme leader, and the regulations, first. You can't appeal simply because you think your work was worth more marks. Appeals should be submitted within three weeks of the decision that you are appealing against.

What do I do if I can't complete an assignment on time?

Talk to the staff in Pandon Administrative Office. If you have good grounds, then ask for an extension. If you can't have an extension it is always better to submit something than nothing. If at all possible, you should ask for an extension **before** the assignment is due. Only your programme leader may grant extensions. Do not commit academic misconduct just because you are in a rush.

What if I miss an exam?

If you know in advance that you can't attend an exam, then contact the Pandon Administrative Office and ask for advice. If you miss an exam, and think you have a valid reason, you should contact the Pandon Administrative Office, and complete a Personal Extenuating Circumstance form. *Note that documentary evidence will be required* (e.g. If you were ill, a doctor's note will be needed).

How do I find out about programme announcements?

Check the programme notice board, read your e-mail, check Blackboard

How do I find out about examination timetables?

The examination timetable is usually available a few weeks before the exams, and is posted on a notice board close to the Pandon Administrative Office. A copy will ***not*** appear on the programme notice board.

When are the exams?

Examination schedule appears on the academic calendar, see http://www.northumbria.ac.uk/staff/?view=Staff

I am on holiday when the exams take place. What can I do?

Change your holiday dates! You should not book holidays for the exam period. It is your responsibility to ensure you are available during all three assessment periods.

What does the Pandon Administration Office do?

The Pandon Administrative office is on the ground floor of Pandon Building; the administrators for computing programmes are based there. You should contact the Pandon Administrative office, change of study plans (*after* discussing it with a programme leader), assignment extension requests and personal extenuating Circumstances.

How do I contact the programme leader?

It is generally best to use email, always include your programme and student id please. Please use university email, not your home email for this purpose. Phoning is not recommended. If a meeting is needed, then suggest some times and include a telephone number in your email. Always include your real name. If you need to leave a form or letter it can be handed in at the Pandon Administrative Office.

Northumbria Students' Union (NSU) is here to make sure you have the best experience possible. NSU is one of the largest and most exciting Unions in the country and that's all because of YOU. We represent you, the student, on all levels, on the issues students are concerned about; receiving a great academic experience, being very employable when you graduate, being safe on campus and in the city and having a fantastic time while a student.

NSU is run by students for students. You can have your say in what NSU does and how it is run, by contacting your Sabbatical Officers or by coming along to Student Council

MEMBERSHIP: As a student of Northumbria University you are automatically a member of the Students' Union. We also sell NUS Extra Card from the Students' Union at both Coach Lane and City Campus giving you discounts in shops and online, but you don't need one to use any of our services.

DIVERSE: Your Students' Union is a place which brings together students from all walks of life, all parts of the country and the world and many different cultures. NSU provides lots of opportunities for you to Get Involved, make lasting friendships, increase employability and have FUN!

INDEPENDENT: NSU is independent of the University, with its own staff, services and decision-making structure. Run by students for students, providing the best services and opportunities for students we push for change from the University to deliver for students. Find our more at our You Said, SU Did page. If you need advice about academic appeals or other issues, we can help. Check out the Advice Page.

VALUE: Your NSU offers the best value for money, and everything you spend goes straight back into the Students' Union to fund all the activities that we run for you.

If you would like more information check out the website www.mynsu.co.uk or come and see us at our offices in City, Coach Lane and London.

* * *

The libraries at City Campus and Coach Lane provide access to a wide range of print and electronic resources including over half a million print books, over 700,000 eBooks and more than 50,000 electronic journals. More details can be found on the University Library website: http://library.northumbria.ac.uk/home

City Campus Library (number 14 on City Campus map) is housed near the Student Union building (number 30 on City Campus map).
Coach Lane Library is situated on the East Side of the Campus, in F Block (number 16 on Coach Lane Campus map).

City Campus library is open 24/7 during term time and from 9am to midnight during vacation times. Coach Lane library is open 7am until midnight (Monday to Friday), 9am until midnight (Saturday and Sunday). Opening hours are prominently displayed in the foyers of the library buildings, any changes are advertised on the Library website and on social media. Opening hours vary during bank holidays and are subject to change, so please check before you travel.

You will need to keep your smartcard with you to gain access to and leave the libraries. Your Smartcard is a universal card which not only gives access to the Libraries and other University buildings, but it also allows you to print, copy, scan, borrow books and make cashless payments.

The Library Catalogue can be accessed on and off-campus through the University Library website and the dedicated catalogue computers on each floor of both Libraries. The catalogue can be used to search for books and eBooks located in the University Library. It is quick and easy to use and will give you the information you need to locate the material on the shelves or read online. eBooks can be read on and off-campus, anytime, anywhere. NORA can be used to search for, and retrieve, up-to-date scholarly materials including articles, reports and statistics that are relevant to your studies. You can browse through all the online resources relating to your subject in one place including databases, journals and websites.

Students are entitled to borrow up to 15 items at any one time. Items can be issued using the self-issue machines on the ground floor of City and Coach Lane Libraries. You can renew your library books online through the MyLibrary section of MyNorthumbria or via the Library Catalogue.

Northumbria students can use other libraries such as the Robinson Library at Newcastle University and Newcastle City Library using the SCONUL access scheme. For more information see the Library SCONUL information page: http://library.northumbria.ac.uk/sconul-holiday

The Northumbria Skills Programme is a comprehensive skills programme designed to develop the key skills you need to succeed at university and beyond provided by the Library. It runs throughout the year and provides classroom style skills sessions on many topics including academic writing skills, giving accomplished presentations, and referencing your work correctly, as well as regular drop in surgeries. Some sessions are bookable; simply consult the timetable on the Northumbria Skills Programme website: http://library.northumbria.ac.uk/skillsdev-nsp

Skills Plus is the Library's collection of online learning materials, with a focus on digital literacy and study skills that can be accessed on and off-campus. Using these resources is an excellent way to develop your skills through a range of online tutorials with quizzes, video demonstrations and printable help guides.
http://nuweb2.northumbria.ac.uk/library/skillsplus/topics.html?l3-0

If you need help or advice, on or off campus, you can contact Ask4Help. The Ask4Help service provides you with help and support to access a range of University services including Library, Disability Support, Student Finance and Careers. The quickest way to find answers to some of the most popular questions asked by students is to look at Ask4help online. You can also contact us by phone and speak to a member of our dedicated enquiry team or email us your questions.

www.northumbria.ac.uk/ask4help
ask4help@northumbria.ac.uk
0191 227 4646

Appendix A Modules list for 2015/16

Module Code	Module Title	Period	Module Tutor	Credits
CG0174	MSc Individual Computing Project	SEM2	Rebecca Strachan	60
CM0718	Programme Design & Implementation		Michael Brockway	20
CM0719	Database Modelling	SEM1	Akhtar Ali	20
CM0720	Systems Analysis & Design with UML	SEM2	Emil Petkov	20
CM0721	Implementation of Object Oriented Designs	SEM2	Mark Hurrell	20
CM0727	Website Development	SEM1	Emma Lejk	10
CM0728	Website Development and Deployment	DL	Colin Damm	20
CM0729	Artificial Intelligence for Applications	SEM1	Jeremy Ellman	20
CM0730	Decision Support Systems	SEM2	Akhtar Ali	20
EN0506	Advanced Dynamics and Vibrations	2	Ali Daadbin	20
EN0507	Computational Fluid Dynamics	1	Reazul Hasan/R Penlington	20
EN0510	Solid Modelling & Prototyping	2	Phil Hackney	20
EN0519	Silicon Electronic Design	2	Richard Binns	20
EN0535	Engineering Data Analysis	1	John Tan	20
EN0536	Materials Process Modelling	2	Roger Penlington	20
EN0542	Project MSc E & T Part II	SEM2	Becky Strachan	60
EN0547	Photovoltaic Cell and Module Technology	2	Rob Miles	20
EN0548	Advanced Photovoltaic Cell Design	2	Rob Miles	20
EN0549	Photovoltaics - Economics, Policy and Environment	2	Nicola Pearsall	20
EN0550	Photovoltaic System Technology	2	Nicola Pearsall	20
EN0705	Computer Networks & Operating Systems	SEM1	Emil Petkov	20
EN0706	Systems Development Workshop	SEM1	Alamgir Hossain	10
EN0711	Wind Energy Conversion Systems	2	Milutin Jovanovic	20

Module Code	Module Title	Period	Module Tutor	Credits
EN0712	Modern Power Engineering	1	Ghanim Putrus	20
EN0713	New and Renewable Technologies for Electricity Supplies	1	Nicola Pearsall	10
EN0715	Optimising Converged Cisco Networks (ONT)	SEM2	Graham Sexton	20
EN0718	Computer Aided Methods for Engineering	1&2	Sean Danaher	20
EN0719	Switch: IP Switched Networks and Troubleshooting	1&2	Richard Binns	10
EN0720	Digital Design Automation	2	Ian Elliott	20
EN0721	Engineering Design	2	A Maheri/R Penlington	20
EN0722	Radio Frequency Communication Systems	1	Dave Smith	20
EN0725	Wireless Computer Network Technology	1	Graham Sexton	10
EN0729	Understanding the Technology Context	YL	H Jenkins	20
EN0730	Learning Contract	1&2	Noel Perera	10
EN0731	Managing own Learning	2&3	Noel Perera	10
EN0732	Technology Developments		Roger Penlington	20
EN0733	Scientific Principles in Design	3	Richard Binns	20
EN0734	Business Practice and New Technology	1&2&3	John Tan	20
EN0735	Computer Models and Problem Solving	1, 3	Sean Danaher	10
EN0736	Management and Project Business Practice	1&2&3	John Tan	10
EN0737	New Technology Adoption	1&2&3	Richard Binns	10
EN0738	Academic Recognition for CPD	1&2&3	Noel Perera	20
EN0739	Work Based Dissertation (Commencing 2012/13)	YL	Noel Perera	60
EN0746	Computer Network Implementation	SEM2	Neil Eliot	10
EN0747	Route: IP Routing and Troubleshooting	SEM1	Graham Sexton	20
EN0748	Switch: IP Switched Networks and Troubleshooting	SEM2	Richard Binns	20

Module Code	Module Title	Period	Module Tutor	Credits
EN0758	Modern Engineering Design and Optimisation	2	Alireza Maheri	20
EN0759	Network Security	SEM1	Nauman Aslam	20
EP0191	Optical Fibre Communication Systems	1	Joe Allen	10
IS0718	Masters Dissertation	SEM2	Jackie Adamson	60
IS0729	Systems Security Management	SEM2	Colin Goodlett	10
IS0732	Information Systems and Knowledge Management in the Business Context	SEM1	Mandy Lewis	20
IS0733	PRINCE2 for Practitioners	SEM1	Andrew Turnbull	10
IS0739	Business Agility and Creativity	SEM1	Steve Ball	20
IS0743	BIT Consultancy Project	SEM2	Ed Hyatt	20
IS0749	Research and Project Management	YLSEM1	Colin Damm	20
IS0753	Integrated Enterprise Systems with ERP	SEM2	Honglei Li	20
LI0709	Research Methods	1	Sue Childs	10
LI0762	Dissertation	YL	Biddy Casselden	60
LI0775	Cataloguing and Classification	1	Andy Williamson	20
LI0792	Electronic Record Keeping	1	Julie Mcleod	20
LI0793	Record keeping practice	S3	Julie Mcleod	20
LI0794	Record Keeping Principles	1	Julie Mcleod	20
LI0796	Organising Knowledge DL	2	Biddy Casselden	20
LI0797	Managing in the information environment DL	S1	Jackie Urwin	20
LI0798	Collection Management DL	3	Jackie Urwin	20
LI0800	Hypermedia DL	1	Matthew Pointon	20
LI0808	Managing Records for Legal & Regulatory Compliance	1	Julie Mcleod	20
LI0810	Data regs and ethics	S2	Susannah Hanlon	20

Module Code	Module Title	Period	Module Tutor	Credits
LI0811	Information Governance & Security: Principles and Practice for Information Professionals	1&2	Julie Mcleod	20
LI7004	Research Philosophy and Practice	S1	Alison Pickard	20
ME0088	Numerical stress analysis	1	Ken Leung	10
VAL300	Pipeline Integrity Assessment	YL	Ken Leung (contact)	20

Appendix B Study Plan and Module Registration Form

Faculty of Engineering and Environment									
MSc Computing, Engineering and Information Sciences									**Study Plan**
Award Title:	**MSc**								
Item	**Module Code**	**Module Title**	**Credits**	**Level**	**Semester**	**Lecture Time**	**Semina r Time**	**Module Tutor**	
1									
2									
3									
4									
5									
6									
		Total credits:	**180**						
Comment									
Student:		**ID:**		**Signature:**		**Date:**			
Programme Leader:				**Signature:**		**Date:**			
SLT A Approval:				**Signature:**		**Date:**			

One signed copy of this study plan is to be sent to the programme leader following approval by SLTA.

Faculty of Engineering and Environment

MSc Computing, Engineering and Information Sciences

The following titles have been approved by LTPAS for awards offered under the MSc Computing, Engineering and Information Sciences.

Prior approval must be sought from LTPAS for any award title not included in this list.

Award Title	Date of LTPAS approval
MSc Applied Computing	1st July 2010
MSc Computer Forensics	1st July 2010
MSc Computer Networks	1st July 2010
MSc Computer Security	1st July 2010
MSc Embedded Computer Systems	1st July 2010
MSc Engineering and Technology	1st July 2010
MSc Informatics	1st July 2010
MSc Information Resource Management	1st July 2010
MSc Information Studies	1st July 2010
MSc Management Information Systems	1st July 2010
MSc Software Engineering	1st July 2010

Appendix C - Example Assessment Masters Assessment Framework

	Mark Range	**Postgraduate Generic Assessment Criteria**
Distinction	86-100	Exemplary work providing evidence of a complete or near complete grasp of the knowledge, understanding and skills appropriate to level 7. All learning outcomes met a high level. Exemplary in: use of primary sources of literature from a range of perspectives; development of analysis and structure of argument; critical evaluation of theories including those at 'cutting edge' of the discipline; creative original use of theory, research methods and findings; presentation of information to the intended audience.
	76-85	Outstanding work providing evidence to an extremely high level of the knowledge, understanding and skills appropriate to level 7. All learning outcomes met, most at high level. Outstanding in: use of primary sources of literature from a range of perspectives; development of analysis and structure of argument; critical evaluation of theories including those at 'cutting edge' of the discipline; creative use of theory, research methods and findings; presentation of information to the intended audience.
	70-75	Excellent work providing evidence to a very high level of the knowledge, understanding and skills appropriate to level 7. All learning outcomes met, many at high level. Excellent in: use of primary sources of literature from a range of perspectives; development of analysis and structure of argument; critical evaluation of theories including those at 'cutting edge' of the discipline; some creative use of theory, research methods and findings; presentation of information to the intended audience
Commendation	67-69	Very good work providing evidence of the knowledge, understanding and skills appropriate to level 7. All learning outcomes met, some at a high level. Very good in: use of up-to-date material from a variety of sources; development of analysis and structure of argument; critical evaluation of theory; application of relevant theory, research methods and findings to the problem in question; presentation of information to the intended audience.
	63-66	Good work providing evidence of the knowledge, understanding and skills appropriate to level 7. All learning outcomes met, many are more than satisfied. Good in: use of up-to-date material from a variety of sources; development of analysis and structure of argument; critical evaluation of theory; application of relevant theory, research methods and findings to the problem in question; presentation of information to the intended audience
	60-62	Good work providing evidence of the knowledge, understanding and skills appropriate to level 7. All learning outcomes met, many are more than satisfied. Good in most of the following aspects: use of up-to-date material from a variety of sources; development of analysis and structure of argument; critical evaluation of theory; application of relevant theory, research methods and findings to the problem in question; presentation of information to the intended audience.
Pass	57-59	Highly satisfactory work providing evidence of the knowledge, understanding and skills appropriate to level 7. All learning outcomes are met, some are more than satisfied. Highly satisfactory in: use of relevant material from a variety of sources; development of analysis and structure of argument; evaluation of theory; application of relevant theory, research methods and findings to the problem in question; presentation of information to the intended audience.
	53-56	Satisfactory work providing evidence of the knowledge, understanding and skills appropriate to level 7. All learning outcomes are met. Satisfactory in: use of relevant material from a variety of sources; development of analysis and structure of argument; evaluation of theory; application of relevant theory, research methods and findings to the problem in question; presentation of information to the intended audience.
	50-52	Acceptable work providing evidence of the knowledge, understanding and skills appropriate to level 7. All learning outcomes are met. Adequate in: use of relevant material from a variety of sources; development of analysis and structure of argument; evaluation of theory; application of relevant theory, research methods and findings to the problem in question; presentation of information to the intended audience.
Fail	45-49	Work is not acceptable in providing evidence of the knowledge, understanding and skills appropriate to level 7. A substantial majority of the learning outcomes are met, however, and the others are nearly satisfied. Adequate in most but not all of the following aspects: use of relevant material from a variety of sources; development of analysis and structure of argument; evaluation of theory; application of relevant theory, research methods and findings to the problem in question; presentation of information to the intended audience.
	30-44	Work is not acceptable in providing evidence of the knowledge, understanding and skills appropriate to level 7. Most of the learning outcomes are met, however, and many of the others are nearly satisfied. Adequate in at least some of the following aspects: use of relevant material from a variety of sources; development of analysis and structure, argument; evaluation of theory; application of relevant theory, relevant methods and findings to the problem in question; presentation of information to the intended audience
	1-29	Work is not acceptable and shows little evidence of the knowledge, understanding and skills appropriate to level 7. Few of the learning outcomes are met. Inadequate in several, or seriously inadequate in at least one of the following aspects: use of relevant material from a variety of sources; development of analysis and structure of argument; evaluation of theory; application of relevant theory, research methods and findings to the problem in question; presentation of Information to the intended audience.
	0	Work not submitted OR Work giving evidence of serious academic misconduct (subject to regulations in ARNA Appendix 1) OR Work showing no evidence of the knowledge, understanding and skills appropriate to level 7. None of the learning outcomes are Met.

Source: A. Dordoy (2007), Academic Registry, Northumbria University (as published in Matthews Lesley (2007), Dissertations: issues in guidance, supervision and assessment