

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

MSc Computer Network Technology

Programme Handbook
2015 - 2016

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1 Welcome from the Programme Leader

Welcome to the MSc Computer Networking Technology programme. This programme is designed to allow you to learn, extend and deepen your knowledge and skills in principles and practices and in Computer Networking. The program aims to deliver practical hands on experience using a state-of-the-art networking laboratory ensuring that all students will graduate with a common set of fundamental and practical Internetworking abilities that are much desired for Internetworking-related employment.

I hope that the programme meets your expectations and that you find it useful, enriching and enjoyable. I wish you every success in your studies and future careers.



Dr Nauman Aslam

Senior Lecturer

Department of Computer Science and Digital Technologies

Faculty of Engineering and Environment

2 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.

3 About this handbook

This handbook is designed to provide a guide to your programme of study at Northumbria. It should be read alongside the University and Student Handbooks which contain more general information about being a student at Northumbria within Engineering and Environment.

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” and through the eLP (Blackboard) – more information on these sites later in the guide.

WHO'S WHO AND COMMUNICATION?

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- this is where to go first when you have a query!

The Student Support Team is available to assist all students requiring information and/or advice. The team is located in room 007 (Ground floor) Pandon Building.

Opening times: Monday – Thursday 8.30 – 17.00 hours Friday 8.30 – 16.30 hours

Email: ee.studentsupport@northumbria.ac.uk

Telephone: 0191 243 7379

Programme Leader: Dr Nauman Aslam

Office Location: Pandon Building, Room PB247
Email: nauman.aslam@northumbria.ac.uk
Telephone: 019- 243 -7737

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. This is the person who manages such processes as enrolment, option choice, day to day correspondence, confirmation of attendance letters, marks entry, etc. They can be contacted via the Pandon School Office.

Module Tutor

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.

3.1 Communication

Contacting Your Programme Leader

The best way to contact the programme leader is by email nauman.aslam@northumbria.ac.uk.

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. Occasionally you can just turn up at their office, 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 daily, 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) 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 hand-outs, assignment briefings, instructions, and announcements. In general your Programme Leader uses your 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

A point of contact for staff with students is the Programme Notice Board. This could be for timetable changes, assessment information or personal messages. It is particularly important to check the notices at the start of the semester when timetable changes are more likely and towards the assessment period when important information will be displayed.

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

4 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/>

4.1 Programme Aims

The MSc Computer Network Technology is specifically designed to allow students to update, extend and deepen their knowledge in an innovative programme, to enhance their career opportunities in industry, or as a preparation for further academic research. The programme provides an excellent platform for those who wish to take the further Cisco CCNP qualifications. The programme aims to:

- produce graduates who can apply fundamental principles and techniques of computer networks to produce creative solutions for commerce and industry
- produce graduates who are focussed towards an innovative and expanding network industry.
- evaluate theoretical frameworks and models and select appropriate techniques and tools for analysis of complex computer networks.
- develop a critical awareness and evaluation of current issues in the computer networks subject discipline in order to foster the ability to produce new insights and propose new solutions
- competently evaluate and apply a range of research techniques using both primary and secondary sources to successfully undertake a research or investigative project in the computer networks discipline.
- 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 within this subject discipline.

4.2 Programme Learning Outcomes

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

- Essential concepts, theories, techniques and tools used in computer networking technologies, computer communications and related topics.
- Major issues at the frontiers of research & development, professional, ethical and legal issues involved in the development and operation of new technologies.
- apply a range of knowledge, techniques and tools in the analysis, design, testing and maintenance of high quality solutions to complex problems in a variety of both real world and theoretical contexts
- Creativity in problem solving and managing projects, integrating practical skills across disciplines effectively and safely
- Effective and professional communication of information, ideas, arguments, problems and their solution in both written and oral form to specialist and non-specialist audiences.

4.3 Programme Structure

MSc in Computer Network Technology – Full time September Start

	Northumbria Semester 1 Programme Semester 1	Northumbria Semester 2 Programme Semester 2	Summer Programme Semester 1
<u>Programme Specific Modules</u>	Route: IP Routing and Troubleshooting EN0747 (20 credits)	Switch: IP Switched Networks and Troubleshooting EN0748 (20 credits)	MSc Engineering Project EN0542 (60 Credits)
	Network Security EN0759 (20 credits)	Optimising Converged Cisco Networks (ONT) EN0715 (20 Credits)	
	Wireless Computer Network Technology EN0725 (10 credits)	Computer Network Implementation EN0746 (10 credits)	
	Research Methods and Project Management ISO749 (20 Credits)		

MSc in Computer Network Technology – Full time January Start

	Northumbria Semester 2 (Jan) Programme Semester 1	Northumbria Semester 1 (Sept) Programme Semester 2	UNN Semester 2 (Jan) Programme Semester 3
<u>Programme Specific Modules</u>	Switch: IP Switched Networks and Troubleshooting EN0748 (20 credits)	Route: IP Routing and Troubleshooting EN0747 (20 credits)	MSc Engineering Project EN0542 (60 Credits)
	Optimising Converged Cisco Networks (ONT) EN0715 (20 Credits)	Network Security EN0759 (20 credits)	
	Computer Network Implementation EN0746 (10 credits)	Wireless Computer Network Technology EN0725 (10 credits)	
	Research Methods and Project Management ISO749 (20 Credits)		

4.4 Learning Teaching and Assessment Strategy

All the learning, teaching and assessment methods follow the University strategy and guidelines and the QAA Code of practice on assessment. The methods provide wide diversity, incorporating the best techniques to fit both the particular subject under study and the depth of learning required at postgraduate level.

Modules are taught using a combination of formal lectures and seminar classes in addition to directed and independent learning methods. Each module adopts a learning and teaching strategy that is appropriate to the subject matter covered and the mode of delivery. 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. IT skills are included in learning in addition to simulation skills and field study visits where appropriate. Delivery is also supported by the use of a range of academic and case study based learning materials. There is an emphasis on independent learning and using new research development in the relevant subject area.

The assessment methods reflect the wide range of teaching and learning practices and diversity of subject matter and test the learning outcomes of each module in the most appropriate way. The students are expected to evaluate theoretical or practical frameworks for the analysis and critical evaluation of a variety of issues, informed by recent research. Where appropriate, they are expected to produce new critiques, methodologies and insights and propose new solutions to problems. Formative assessment is also included.

The learning, teaching and assessment methods are designed to provide a development continuum from the Certificate through to the Diploma and full Masters awards, supporting the progressive development of the Learning outcomes and the demands of increasingly advanced postgraduate work. For the award of MSc, students must undertake a substantial individual project, which critically evaluates and applies appropriate research techniques and methodologies. All students are prepared for the project by earlier core modules on research methods and research management. Students are encouraged to find a problem linked to industry on a real-world problem.

In accordance with section 4 of the Assessment Regulations for Northumbria Awards, this programme has a formal progression point after completion of 120 credits. A summary of the regulations can be found at:

http://northumbria.ac.uk/static/worddocuments/ardocs/ARNA_overview.doc.

5 Staff Gallery and Contact Details



Dr. Nauman Aslam
Office: Pandon 247
Nauman.aslam@northumbria.ac.uk
Ph: 0191-243-7737



Dr. Graham Sexton
Office: Pandon 205
g.sexton@northumbria.ac.uk
Ph: 0191-227-3232



Dr. Richard Binns
Office: Ellison E408
Richard.binns@northumbria.ac.uk
Ph: 0191-227-3670



Dr. Becky Strachan
Office: Ellison D109
rebecca.strachan@northumbria.ac.uk
Ph: 0191-227 3979



Dr. David Kendall
Office: Pandon 228
David.kendell@northumbria.ac.uk
Ph: 0191-243 7619



Prof. Ahmed Bouridane
Office: Pandon 219
Ahmed.Bouridane@northumbria.ac.uk
Ph: 0191 227 3606



Mr. Martin Wonders
Office: Pandon 247
Matrin.wonders@northumbria.ac.uk
Ph: 0191-227-3602

6 Resources and Laboratories

The University has some excellent resources that are well documented on the University's www site and on the Electronic Learning Platform (Black Board). Within the School the main resource you will be using is the Networking laboratories in Pandon Building PB S3 and PB S4.. This laboratory contains a wide variety of internetworking devices including switches, router, firewalls, traffic analysers and miscellaneous networking software. The laboratory was recently received new set of Cisco 2921 series routers and Cisco ASA security appliances. All information regarding the set up is provided on the home page of lab computers in PB S3 and PB S4. This facility is available to postgraduate students during normal operating hours during weekdays. Access can be arranged at weekends and out of normal hours during the week – you must contact the programme leader for this.

7 Important Points

7.1 Attendance

As a mature student you will already realise the importance of good attendance and no doubt your intentions at this point are to attend well. Our statistics show a strong correlation between attendance and performance and on this basis if you want to do well you should be looking to attend all classes. Module tutors will record attendance as a matter of course and this data may be used in several ways. The University has an obligation to inform immigration authorities on poor attendance. Additionally, the attendance data gathered will be used to rate your attendance if you require a 'visa attendance' letter for a visa extension. This programme will expect an attendance of better than 70% for a rating of 'good' on the letter.

7.2 Assignment Submission

The University has strict regulations regarding submitting work on time and the late submission of a piece of work may lead to zero marks being allocated. If you need to submit a piece of work late and have a valid reason for doing so, you will need to inform the school office and they will help you to complete a late submission form. A point of caution – while you may obtain authorisation for the late submission of a piece of work, the late submission itself may cause you problems in progressing on your programme in a timely manner and may even ultimately lead to Visa problems if you are an overseas student.

7.3 Your name

This piece of advice applies especially to students who might have complicated and multiple names. It is really important that you use the name you gave the University when you registered, particularly on assignments, exams etc. Using names other than those provided, even if they are valid names, can lead to problems processing marks.

An example might be:

The person's actual full name is: Peter Mark Smith-Jones

The person registered as: Peter Smith

If this person then later refers to himself on an assignment as:
Mark Smith-Jones or
Mark Jones

You can imagine the problems it might cause.

Of course, when handing in an assignment, you should include your Registration Number too. This number is unique to you and can help solve name ambiguities.

8 Academic Calendar 2015- 2016

See Appendix 1.

The assessment schedule for each module will be available through the eLP.

9 External Examiner Information

The external examiner for this programme is Dr Gordon Russell from the Edinburgh Napier University.

10 Resources and Laboratories

There are lots of computer labs in the faculty. The majority of facilities used on this programme are available in the standard computer labs that are mostly based in Pandon building. For some modules more specialist labs or equipment may be used – for example, networks related modules have access to the specialist Networking lab in Pandon S3. You will also have 24 hour access to the computers in Pandon Basement for more general computer facilities.

11 Professional Bodies

The programme has accreditation from the British Computer Society (BCS).

12 Frequently Asked Questions

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-taught 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?

You need to gain 50% in an assignment to pass the assessment.

How do I pass the programme?

Normally, by passing all the assignments 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 Pandon Administrative office and or your programme leader, and complete a person extenuating circumstances form (available from the Faculty 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 members are normally allowed to disregard 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 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 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 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 your module tutor. If you have good grounds, then ask for an extension via the Faculty Office. 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. The Faculty Office 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 your programme leader and ask for advice. If you miss an exam, and think you have a valid reason, you should contact a programme leader, 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 Administration Office. A copy will **not** appear on the programme notice board.

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 Faculty Office do?

The Faculty office is on the ground floor of Pandon Building; the administrators for computing master's programmes are based in this office. You should contact the faculty office about change of address, change of study plans (*after* discussing it with a programme leader), assignment extension request forms and personal extenuating Circumstances forms.

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 Faculty Office.

Appendix -1

Semester One		
Enrolment	Thursday 10 September to Friday 2 October 2015	3 weeks and 2 days
Welcome/Induction Week	Monday 14 September to Friday 18 September 2015	1 week
Teaching Weeks	Monday 21 September to Friday 11 December 2015	12 weeks
December Congregation for courses completing after June Examination Boards	Monday 7 & Tuesday 8 December 2015	2 days
Winter Break	Monday 14 December 2015 to Friday 1 January 2016	3 weeks
Assessment Weeks	Monday 4 January to Friday 15 January 2016	2 weeks

Semester Two		
Welcome/Induction week	Monday 11 January to Friday 15 January 2016	1 week
Teaching Weeks	Monday 18 January to Friday 18 March 2016	9 weeks
Spring Break	Monday 21 March to Friday 8 April 2016	3 weeks
Teaching Weeks	Monday 11 April to Friday 29 April 2016	3 weeks
Assessment	Tuesday 3 May to Friday 20 May 2016	3 weeks
Final year results published	Friday 24 June 2016	1 day
Summer Award Congregations	Thursday 7 July to Wednesday 13 July 2016	1 week
Reassessment Period	Monday 22 August to Friday 26 August 2016	1 week

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 out 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?13-0>

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