The Faculty of Engineering and Environment
Department of Physics and Electronic Engineering

BEng (Hons) Mechanical Design Engineering

BEng (Hons) Electronic Design Engineering

BEng (Hons) Mobile Communications Engineering

Student Handbook 2015 - 2016

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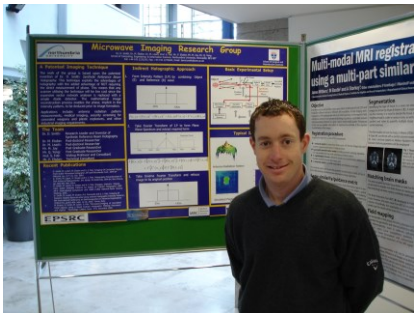
1 Welcome from the Programme Leader



Welcome to the Electronic Design Engineering (EDE), Mechanical Design Engineering (MDE) & Mobile Communications Engineering (MCE) top-up degree programmes here at Northumbria University.

I hope you enjoy your time with us and take every opportunity to enjoy the experience and get the very best degree you can.

Dr Michael Elsdon

2 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 Faculty Student Handbooks which contain more general information about being a student at Northumbria within the Faculty of 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 the Northumbria website. A key page, entitled *'Information for Students'*, is available by pointing your web browser to the following URL (or CTRL-click on the link):

http://www.northumbria.ac.uk/sd/student/?view=Standard

3 Who's Who and Communication?

3.1 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 specialism outside the faculty and external consultants, industrialists and advisors.

Staff from the school and from the wider university (such as the University Library, IT Services and Student Support and Wellbeing Services) 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 School and subject area level.

Ellison Office

Office Location: Ellison Building room B201 (ground floor)

Email: eb.ceisstudentsupport@northumbria.ac.uk

Telephone: 0191 243 7379

Office hours: 8.30 am – 5 pm Monday to Thursday, 8.30 – 4.30 pm on a Friday

This is a dedicated point of help for students. It should be your first point of contact for all queries.

Programme Leader: Dr Michael Elsdon

Office Location: Ellison Building, room E404

Email: michael.elsdon@northumbria.ac.uk

Telephone: 0191 243 7289

Office Hours: 9am – 5pm

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 Ellison Building 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. Often, the module tutor is also a member of the teaching team that delivers the module.

Module tutors for EDE, MDE & MCE Programme core modules

Academic Staff			Room	Phone
	Michael Elsdon	Programme Leader and Module Tutor EN0607	*EB E404	0191 2437289
	Peter Minns	Module Tutor EN0348	EB E404	0191 2273631
	Peter Harrington	Module Tutor EN0343	EB E406	0191 2273673
	Shelagh Keogh	Module Tutor CM0647	PB 106	0191 2277293
	Phil Hackney	Module Tutor EN0619	EB C004a	0191 2273644
	Michael Elsdon	Module Tutor EN0352	EB E406	0191 2273237
	Graham Sexton	Module Tutor EN0632	PB108	0191 2273232
	Ken Leung	Module Tutor EN0337	EB C004a	0191 2274618
Administrative Support	Office	Room EB B201		0191 2277150
IT Help Desk	Email: it.helpline@northumbria.ac.uk			0191 2274242

*EB is Ellison Building, **PB is Pandon Building

3.2 Communication

Contacting Your Programme Leader

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) 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. You will be shown how to access the eLP in Induction week. For example, your Programme Leader may use the eLP to pass on information concerning programme matters. There is also a module – the CEIS School Office: Student Support – which acts as an electronic notice board for a wide range of information that students need during the academic year. It is therefore important that you check the eLP regularly – at least daily – for new announcements and new material.

Plasma Screens

The school owns a number of plasma screens in Pandon and Ellison Building. These are also used to display announcements, events and opportunities such as visits from potential placement providers.

Programme Notice Board

An important point of contact for staff with students is the Programme Notice Board. This could be for timetable changes, assessment information or personal messages. YOU MUST CHECK THE NOTICEBOARDS REGULARLY. 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. The Notice Board can be found outside of the Programme Leader's office, room E202 in Ellison Building.

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 for EDE, MDE & MCE

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 EDE/MDE/MCE programmes aim to produce graduates who can:

1. Apply key electronic, mechanical or communications engineering concepts and design skills in the modern engineering environment.
2. Innovate and be creative in the design of new electronic, mechanical or communications products, devices or components.
3. Conduct experimental work and generate appropriate data to evaluate concepts and deepen understanding.
4. Draw upon a broad knowledge of engineering business practice and integrate design in a business context.
5. Demonstrate an understanding and apply the competencies required to create and operate a business.

It is anticipated that students graduating from this programme will be able to take up a range of engineering roles and make immediate and valuable contributions to engineering businesses.

4.2 Programme Learning Outcomes

The EDE/MDE/MCE BEng (Hons) top-up programmes aim to achieve a number of learning outcomes, these can be categorised in general terms as:

a Knowledge and Understanding

b Intellectual Skills

c Practical Skills

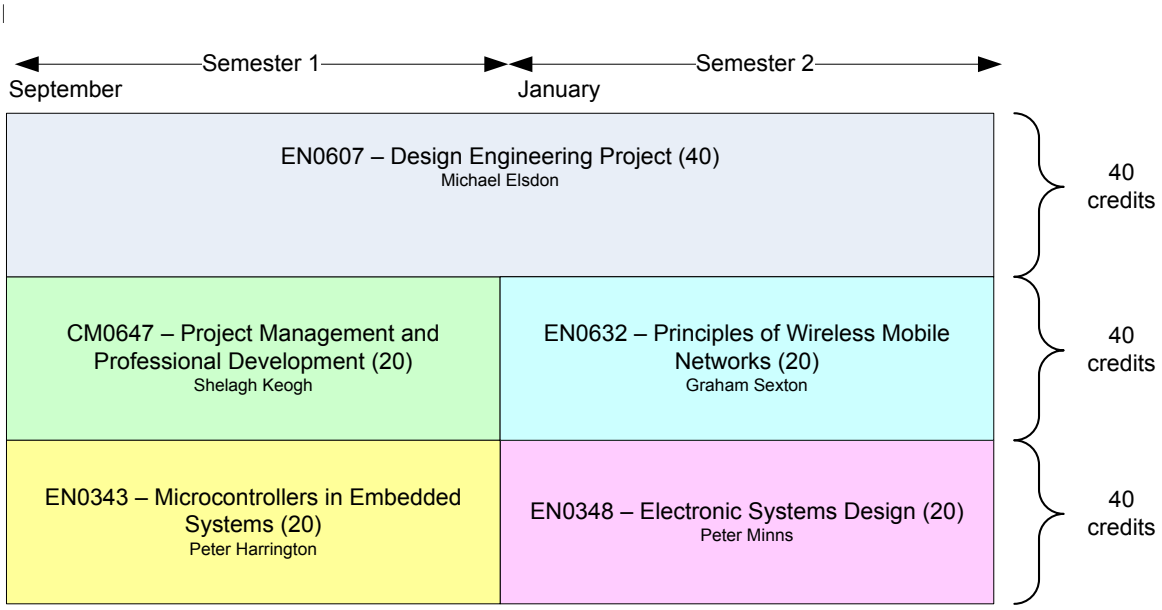
d Transferable/Key Skills

Further details on the breakdown of each of these categories can be found in the relevant Programme Specification.

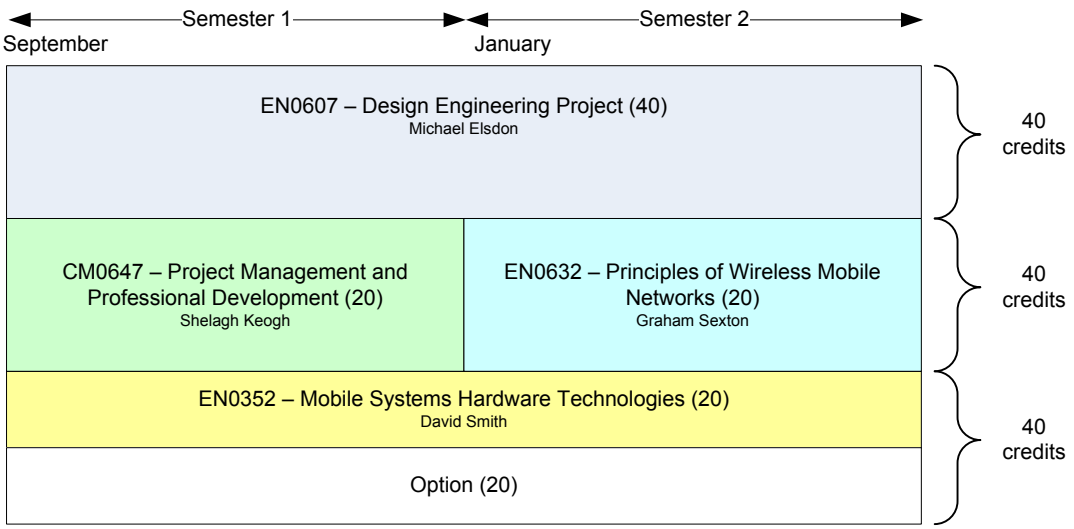
4.3 Programme Structures

Each of the three top-up programmes comprises 120 credits worth of modules at level 6. The next two pages show the structure of the individual programmes. Each module shown in the diagram on this and the next page includes the name of the module tutor underneath the title of the module.

EDE September Start

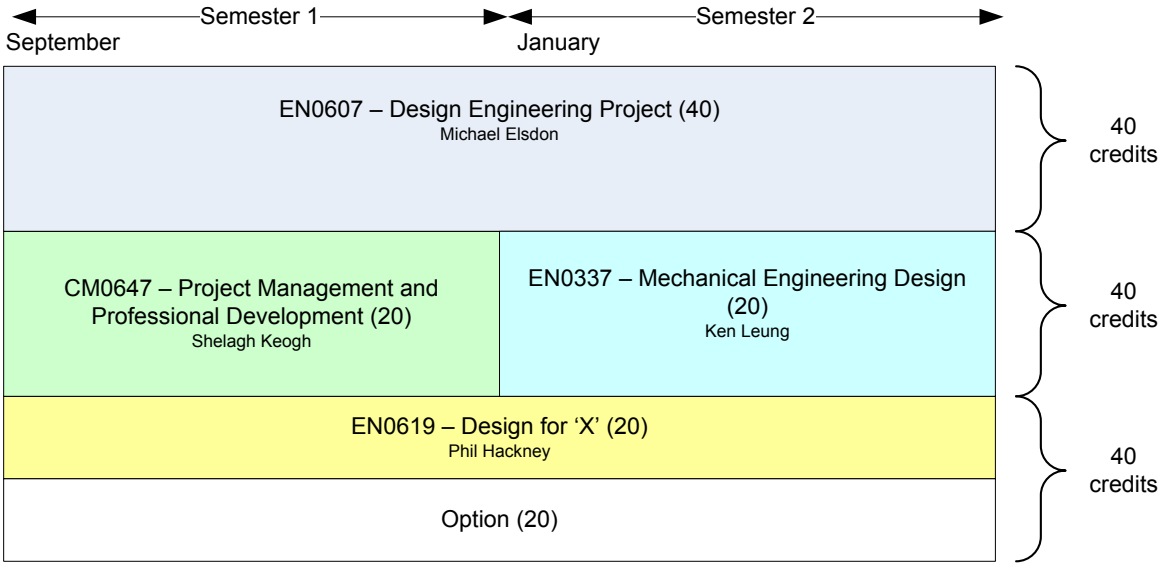


MCE September Start



Options: (choice one 20-credit year long module from the following)
EN0365 Ethical Hacking for Network Security,
IS0619 Graduate Enterprise for CEIS,
EN0273 C Programming,
EN0578 Advanced Operating Systems,
EN0630 Optical Communication Systems Design

MDE September Start



Options: (choice one 20-credit year long module from the following)
EN0620 Digital Product Design & Analysis
EN0622 Renewable Energy Technology
IS0619 Graduate Enterprise for CEIS

4.4 Learning, Teaching and Assessment

Lectures and laboratories are used to deliver the core curriculum. Each module generally has two hours per week contact, which includes problem solving. This allows the lecturer to increase the students' knowledge but also enhance their understanding and ultimately application as the academic year moves on. For year-long modules, during the final four weeks there is no new material introduced and this time is further used to focus on application of knowledge and development of understanding, the aim being to facilitate a deep and active approach to learning.

Seminars and lab work are integrated in most module deliveries to enhance the students understanding of the material, but also allows for enhancement of the students' Transferable Skills. The students must actively engage with their peers and staff during these sessions. They also allow the opportunity for formative feedback, raising the students' awareness of their progress. At this level seminars and lab sessions involve more open-ended and complex problem domains in line with the Faculty's Learning and Teaching Strategy. Individual and group project activity will be used to develop these higher order skills with students increasingly working independently of staff.

The core module CM0647 Project Management & Professional Development includes project management and academic skills topics, giving skills which are needed by students moving from a diploma programme to final year degree level. This module also provides the students with the skills necessary to plan and manage their Design Engineering Project EN0607.

Graduate Enterprise for CEIS* seeks to develop students' entrepreneurial aspirations in a "real-world" business context. The module aims to develop a critical awareness of small business creation and operation, and to raise awareness of self-employment opportunities that Engineering graduates can exploit.

Integration of the knowledge and skills developed on the programme is achieved through the Design Engineering Project in which significant individual work is undertaken to produce an Engineering product as well as the project report.

Lecturers are free to use the teaching style best suited to deliver their material. Material is provided via the eLP, handouts, OHP's, projected material via PC and projector, whiteboard or any combination.

*Available on MDE and MCE programmes

Assessment of a module includes a mix of summative and formative elements. A key goal of the Faculty is to avoid overloading student summative assessment. To that end, each learning outcome on a module is only summatively assessed once whenever possible. The form of summative assessments, and weightings, is specified by the Module Tutor as appropriate to the particular module, and may comprise coursework and/or examination. Formative feedback is also encouraged

in seminar and laboratory exercises and during group design work. Both summative and formative feedback is given throughout the programme. Each piece of assessment informs the students of the Learning Outcomes it is covering and what is expected of the student in terms of hours, format etc.

4.5 Student Feedback

Student Representatives are elected in Induction Week or as soon as possible thereafter. Being a Student Representative is a responsible task and one that is important, not only to help the University operate effectively, but also to make sure that you and your fellow students are getting the best experience possible whilst at Northumbria. The students in your Year Group elect the Student Representatives for the coming academic year. The Reps' commitment will be to gather 'issues and ideas' from fellow students and feed these back each semester at Staff Student Liaison Committee (SSLC) meetings with the Year Tutors and Programme Leader and at Programme Committee Meetings with the Programme Management Team. The results of such discussion between the Reps and programme team may then be auctioned as appropriate, and results fed back via published minutes and through the Reps.

The main role of the Student Rep. is to represent the students in the Faculty on programme related matters at the programme committees, however their role need not be limited to participation in programme committees, nor need they wait for the committee to meet to act on any issues affecting the student body. They can represent students at various meetings in the Students Union, including the Student Council as well as the annual General Meeting.

5 Programme and Assessment Schedule

2015-16 Programme Schedule

Semester One		
International student enrolment	Friday 11 & Saturday 12 September 2015	2 days
Home student enrolment	Saturday 12 September 2015	1 day
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
Winter Break	Monday 14 December 2015 to Friday 1 January 2016	3 weeks
Assessment Weeks	Monday 4 January to Friday 15 January 2015	2 weeks
Semester Two		
Teaching Weeks	Monday 18 January to Friday 18 March 2015	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 2015	3 weeks
Final year results published	Friday 24 June 2016	1 day
Summer Award Congregations ***(provisional)***	Monday 11 July to Wednesday 13 July 2016	1 week
Reassessment Period	Tuesday 26 August to Friday 29 August 2016	1 week

Students must note the above dates and ensure their availability to fulfil all academic requirements for their programme of study.

Public Holidays

- Good Friday 25 March 2016
- Easter Monday 28 March 2016
- Bank Holiday Monday 2 May 2015
- Bank Holiday Monday 25 May 2015
- Bank Holiday Monday 31 August 2015

Assessment Schedule

The following tables show the provisional assessment schedule for the top-up degree programmes commencing September 2014. As a general guideline, module tutors will endeavour to provide feedback, usually in the form of marked work, three weeks after the submission deadline.

wk no.	EDE/MDE/MCE Core Common			EDE Core			MDE Core	
Sem 1	**CM0647**	**EN0607**		**EN0343**			**EN0619**	
1		P & P Rpt						
2								
3								
4				Lab1				
5								
6								
7	Report 1			Lab 1				
8				Lab2				
9								
10	Report 1							
11				Lab2				
12	Report 2	P & P Rpt		Assignment				
	WINTER BREAK							
	ASSESSMENT							
	ASSESSMENT							
Sem 2				**EN0348**	**EN0632**			**EN0337**
1		P & P Rpt			Assgnmt			Assg 1 & 2
2		Final Rpt					Assgm	
3								
4								
5				Labs 1,2				Assgm 1
6							Assgm	
7								
8				Labs 1,2				
9							Assgm	Assgm 1
10				Labs 3,4				
	SPRING							
	BREAK							
11								
12		Final Rpt						
13	EXAMS	Presentation		Labs 3, 4				Assgm 2
14	EXAMS				Assgmnt			
15	EXAMS			Exam	Exam		Exam	
16		Feedback			Assgmnt			Assgm 2
Credits	20	40		40	20		20	20

Key:	Issued	Submission	Feedback

Optional Modules

	EN0365	EN0273	IS0619	EN0578	EN0630	EN0622	EN0620
Sem 1							
1							
2	Assgnmt 1						
3							
4		Asst 1 & 2		Asst 1 & 2	Assgnmt		
5							
6							
7							
8							Assg 1
9							
10			Bus.Plan				Assg 1
11							
12	Assgnmt 1	Assgnmt 1		Assgnmt 1			
13					Assgnmt		
Sem 2							
1	Assgnmt 1	Assgnmt 1		Assgnmt 1	Assgnmt		Assg 1
2	Assgnmt 2						Assg 2
3							
4							
5							
6							
7							
8							
9							Assg 2
10			Present.				Assg 2
11							
12	Assgnmt 2	Assgnmt 2	Ment/Rpt	Assgnmt 2			
13							
14	Assgnmt 2				Exam	Exam	
15		Assgnmt 2		Assgnmt 2			

Module Titles
CM0647 - Project Management and Professional Development
EN0607 - Design Engineering Project
EN0348 - Electronic Systems Design
EN0632 - Principles of Wireless Mobile Networks
EN0343 - Microcontrollers in Embedded Systems
EN0619 - Design for 'X'
EN0337 - Mechanical Engineering Design
EN0352 - Mobile Systems Hardware Technology
EN0632 - Principles of Wireless Mobile Networks
EN0365 – Ethical Hacking for Network Security
EN0273 – C Programming
IS0619 - Graduate Enterprise for CEIS
EN0578 - Advanced Operating Systems
EN0630 - Optical Communications Systems Design
EN0622 - Renewable Energy Technology
EN0620 - Digital Product Design and Analysis

6 Resources and Laboratories

The Faculty of Engineering and Environment is housed in Pandon Building and Ellison Building and most of your classes will take place in these buildings. Computing laboratories abound – some are open to all University students, such as those in the Library or Pandon Basement. Engineering students primarily make use of the laboratories on the first and second floors of E-Block in Ellison Building, along with the open access area known as the 'Forum' on the third floor of E-block, Ellison building. All of the above mentioned labs have specialist Engineer

Library

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

Northumbria Students' Union (NSU)

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.