



**Mechanical and
Electromechanical
BEng/MEng
Programmes**

2018/19

WELCOME TO THE BEng Mechanical / Electromechanical PROGRAMME

On behalf of the Engineering Team at The University of Northampton, welcome to your Engineering programme. We all hope that you'll enjoy your studies and that you'll get a lot of benefit from the new knowledge you will acquire.

We've been tutoring programmes in Engineering for many years, and most of us have worked at one time or another in the engineering industry, so we're confident that we can provide you with all the support you need. More than that, we're looking forward to working with you and learning with you as well about how industry is working today - what's new, what's improving and what's changing.

During Welcome Week in September (week beginning 24 September 2018), you will meet the course team and attend a few talks to help you to settle in to your exciting new environment. To facilitate this process and to create opportunities for you to get to know your peers, you are required to do some preparatory work over the summer, the details of which you will find below. In this pack you will also find other relevant information about the course prior to meeting you during Welcome Week.

INDICATIVE TIMETABLE

Year One

During your first year of study it is hoped that you will successfully complete all six 20 credit modules. In order to achieve this you will be expected to attend University on the days you are timetabled each week and undertake significant independent learning.

Foundation Year 1 (this only relates to the 4-year BEng programme)

Your Engineering module will take on either of the above days dependent upon your programme of study.

COURSE STRUCTURE / AWARD MAP

In order to achieve the named award Mechanical or Electromechanical BEng, Students must meet all the requirements of this map. See link below for Award Maps and Module Specifications

NOTE: [Link to Award Maps & Modules for all levels](#)

TEACHING INFORMATION

Blended Delivery - Each module is made up of appropriate blended learning components, this is a mix of methods, including both face-to-face activities and online learning e-tivities, which can be completed on or offsite and you will be given advice on when they are best to complete. Each module has a Coordinator and they meet on a regular basis with the Programme Leader to ensure that the highest quality teaching and learning activities are being provided.

Seminars and Seminar presentations — to allow students to test ideas against those of staff and other students as well as more formal presentations and to discuss contemporary and historical photography.

Practical demonstrations and Workshops — Workshop practices are a significant part of all the production modules. In addition to the transferring of technical skills and expertise, they offer hands-on instruction to students and guidance to complete specific technical or production tasks.

Projects — The project is essential in teaching and learning in that it encourages the definition of problems and their appropriate solution and evaluation. All projects have clearly defined learning outcomes and assessment criteria, related to content, which provide the framework for exploration, experiment, research, development, presentation and communication. As students progress through the course, they are expected to take a more active role in directing their own work and ideas, and designing their own project briefs through negotiation with staff.

Tutorials — Each student will be allocated a tutor. The tutorial system enables exploration through discussion of issues such as current work, progress, including new ideas and possibilities, providing analysis and exchange, through increasingly negotiated development to support progressively independent and student-centred learning. An open and direct approach to discussion of work is encouraged.

Industrial Visits and Activities — These aim to foster group dynamics, peer group learning and broadening of student experience of the industrial world.

Visiting speakers — carefully selected speakers with relevance to the course contribute through presentations on their practice and specialism, key events include Autumn and Spring seminars.

INDUSTRIAL ENGAGEMENT

A key part of the course is ensuring that students have an appreciation and as far as possible prepared for employment. Our industrial partners through the Northampton Engineering Training Partnership (NETP) support the Course. The NETP provides optional placements industrial engagement opportunities and other information sharing and engagement opportunities such as the Autumn and Spring Seminars and Annual Awards evening. Please check out the NETP activities via the following link: <http://www.netpengineering.co.uk/>

WELCOME WEEK

The welcome week programme will include a range of activities design to introduce you to the course, the team and help build relationship with some of your student colleagues. The activities are summarized below:

a. Social belonging/team building

During this session you can meet the academic team and some of our industry partners (NETP link). You can also find about the Formula Student activity and hear about some of our former and current students.

b. Subject Orientation

This session involves a talk from a programme leader who will outline the programme including methods of assessment and forms of communications through the virtual learning environment (NILE). This will be followed by brief subject talks and tour of lab facilities.

c. End of Welcome Week

This would be an opportunity to ask any questions arisen during the welcome week.

d. Meet your Personal Tutor (PT)

This in an opportunity for a short meeting with your Personal Tutor.

EQUIPMENT REQUIREMENTS

During the course you'll be using a wider range of specialist equipment and software to support practical elements of your course. This is provided and supported as part of your fees. The only element of equipment you will have to purchase is a scientific calculator. This can be purchased during the course following advice from the relevant module leader.

READING LIST

Some key texts, please note there is no requirement for you to purchase these books, as copies are available. However, should you wish to have your own copy then these would be of use throughout the course.

Engineering Mathematics: A Foundation for Electronic, Electrical, Communications and Systems Engineers by Dr Anthony Croft (Author), Robert Davison (Author), Martin Hargreaves (Author), James Flint

Publisher: Pearson; 4 edition (2 Aug. 2012)

ISBN-10: 0273719777, ISBN-13: 978-0273719779

Engineering Mathematics by K.A. Stroud, Dexter Booth

Publisher: Palgrave; 7th Edition (March 2013)

ISBN-13: 9781137031204

Physics for Scientists & Engineers with Modern Physics: Pearson New International Edition, 4/E

By Doug Giancoli

Publisher: Pearson; 4 edition (29 Jul. 2013)

ISBN-10: 1292020768 • ISBN-13: 9781292020761

PREPARATION PRIOR TO STARTING THE COURSE

We find that student's find topics with mathematical content most challenging. The following links will provide useful information, which will prepare you prior to and during the course.

The following Khan Academy links cover the Engineering Math requirements.

- <https://www.khanacademy.org/math/trigonometry>
- <https://www.khanacademy.org/math/algebra>
- <https://www.khanacademy.org/math/precalculus/precalc-matrices>
- <https://www.khanacademy.org/math/algebra-home/alg-matrices>
- <https://www.khanacademy.org/math/integral-calculus/definite-integral-evaluation-ic>
- <https://www.khanacademy.org/math/integral-calculus/integration-techniques>
- <https://www.khanacademy.org/math/differential-calculus/basic-differentiation-dc>

The following Khan Academy links cover the Engineering Physics requirements.

- <https://www.khanacademy.org/science/physics>
- <https://www.khanacademy.org/science/physics/one-dimensional-motion>

- <https://www.khanacademy.org/science/physics/two-dimensional-motion>
- <https://www.khanacademy.org/science/physics/forces-newtons-laws>
- <https://www.khanacademy.org/science/physics/centripetal-force-and-gravitation>
- <https://www.khanacademy.org/science/physics/work-and-energy>
- <https://www.khanacademy.org/science/physics/linear-momentum>
- <https://www.khanacademy.org/science/physics/torque-angular-momentum>
- <https://www.khanacademy.org/science/physics/mechanical-waves-and-sound>
- <https://www.khanacademy.org/science/physics/fluids>

Welcome Week Timetable – May be subject to change

	Monday (Day) (Month)	Tuesday (Day) (Month)	Wednesday (day) (Month)	Thursday (Day) (Month)	Friday (Day) (Month)
9am – 10am				Team Building and Social Hosts: Dr. Steve Mabbutt, Engineering Team Room: SN205 An informal opportunity to find out about our industrial links, the wider engineering team and meet your fellow peers.	
10 am – 10.30 am					
11am - 11:30am	Welcome Room: SN208				
12am – 1pm			Subject Session Introduction to the Programme Host – Dr.Steve Mabbutt and Team Room: Rm-SN310		
1pm – 2pm		Skills Session Room: SN104	A brief introduction to the programme, focussing upon some of the unique features and the wider activities of the Engineering Subject. Introduction to Key Modules A brief informal introduction to key modules	End of Week Session Host: Dr. Steve Mabbutt Room: CH305 A drop in session to answer any outstanding questions Finishes at 1.30pm	
2pm – 3pm			Introduction to Laboratories		

			<p>Hosts – Richard Albany-Ward (Technician) and Team</p> <p>An opportunity to familiarise yourself with the laboratory facilities</p>		
3pm – 4pm					
4pm – 5pm					
5pm – 6pm					
6pm – 7pm					