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Introduction

The Student Handbook brings together all the information you might need during the few years you spend here. There is a Student Handbook for each year of the degree course, with more relevant information to your immediate study. Make sure you have the correct version!

When the first day of term ends you will already have a stack of important information — including a timetable and a tutor group list. You’ll have taken in a lot of information — and forgotten most of it. As time goes on, please use the online version of this handbook to answer all your questions. There’s a comments/feedback section on every screen to ask (anonymously!) the ones we missed. Updates are frequent.

A new and exciting phase of your life is beginning. The Students’ Union, social media and your fellow students are all around you, but never be afraid to seek help from us, the staff. Whatever our official role, that’s what we’re all here for.

CAGB is changing!

Imperial has embarked on a rolling, two-year programme to completely renovate our City and Guilds Building. Some teaching spaces and many teaching staff offices have already moved to their new locations.

As the 2015-16 academic year commences, the renovation of CAGB has reached a point where most of the building is open, and many of the staff have moved to their new offices. However, the next stage of the renovation will see access to the central section of the building somewhat restricted.

You will be kept informed of any changes to access to the various floors of the building as the next phase of the renovation approaches.

Changes to lecture or tutorial venues will be announced well in advance. The interactive Teaching Spaces web page provides directions to all of the teaching spaces used by the Mechanical Engineering courses.

Link to the Shared Teaching Spaces web page
Welcome Information for New Students

Topics:
- Welcome from the Head of Department
- MechSoc
- Key contacts
- The Year Organiser
- Welcome Week
- Safety
- Security
- Health services
- Imperial Horizons
- Meeting your Personal Tutor
- Communications
- Blackboard VLE
- Computers
- Internet access
- Library
- Bicycle and car parking
- The Student Hub
- Disability
- Student counselling
- Careers Service
- Support for the academic transition
- Attendance
- Plagiarism
- Imperial College Union
- Joining the IMechE
- Vacation work
- South Kensington campus map

Welcome to Imperial College, London.

This chapter of the Student Handbook is a copy of the information presented to you in the Welcome Booklet, to help you settle in during Welcome Week and the early weeks of term. Later chapters provide information about all aspects of life at Imperial, including a detailed chapter on the first year of the degree programme.
Welcome Information for New Students

Welcome from the Head of Department

Firstly, I would like to congratulate you on your success in your recent exams and in gaining a place to study here. I would like to welcome you to our Department of Mechanical Engineering, which, as I am sure you are aware, is one of the world's leading centres in its field. We pride ourselves in our distinguished tradition of excellence in teaching, research and practice. Our course is undoubtedly challenging and to succeed you will need to continue to work hard and to take full advantage of the many opportunities available to you. In the first two years you will develop your core engineering skills, through lectures, tutorials, practical and design activities. In your third and fourth years you will be able to decide in which areas you wish to specialise and become more closely involved in the research side of the Department. There will be many opportunities to develop your academic, professional and personal skills and you will be supported in this by our academics and support staff. I hope that you will take a proactive part in your studies and the wider College and Engineering Community so that your time here will be truly successful and rewarding.

Professor Peter Cawley FREng, FRS
Head of Department

MechSoc

Hello and welcome to Mech Eng!

The Mechanical Engineering Society (MechSoc) is your student society, run by students, and we work hard to make your life at Imperial less stressful and more fun. We work alongside the department and our sponsors to bring you, not only great opportunities in industry, but also many fun events throughout the year.

Almost weekly, we arrange for industry-leading companies to give presentations to you about their work and the chances they offer for you to get experience with them. On top of this, we also organise many subsidised events throughout the year, including paintballing, ice-skating and, new this year, the Freshers’ Welcome Dinner, which is a black tie dinner in Central London and a great way for you to get to know the people on the course.

We also work closely with the department to voice any comments or concerns you might have throughout your time here, and you should feel free to contact us with anything you feel is important.

Our website is simply www.mechsoc.com. You’ll find all our contact details along with more important information there.

-- Oscar and the MechSoc Team!
Key contacts

Almost all of the 50 or so academic staff and many other members of the department are engaged in teaching, but as an undergraduate student there are a few you will see and hear much more of.

Head of Department

Prof Peter Cawley
Room 460C
Email p.cawley@imperial.ac.uk

The Head of Department is responsible to the University for all of the Department’s activities, both teaching and research.
Senior Tutor

Dr Fred Marquis
Room 552
Email a.marquis@imperial.ac.uk
The Senior Tutor is responsible for the welfare and academic progress of every undergraduate student in the department.
Should you wish to discuss an issue with an alternative member of the faculty, Dr Julie Varley is also available (Room 549, Email: j.varley@imperial.ac.uk, Tel 47089)

Academic Tutor

Dr Juliet Varley
Room 549
Email j.varley@imperial.ac.uk
The Academic Tutor (a new post in this department) is concerned with all aspects of the ‘student experience’, but especially those involving the challenging transition from school to university.

Director of Undergraduate Studies

Dr Mike Bluck
Room 747
Email m.bluck@imperial.ac.uk
Senior UG Administrator

Josie Ann Howard  
UG Office, Room 553  
Email j.howard@imperial.ac.uk

The Senior UG Administrator is responsible for managing the interaction of students and teaching programmes — dealing, in particular, with timetabling and registration issues.

UG Administrator

Tom Curtin  
UG Office, Room 553  
Email t.curtin@imperial.ac.uk

Departmental Disability Officer (DDO)

Dr Fred Marquis  
Room 552  
Email a.marquis@imperial.ac.uk

The Departmental Disability Office is able to help students arrange for any special requirements that they may need throughout their study at Imperial (see Disability on page 13).
The Year Organiser

The Year Organiser is responsible for overall administration of your current year of the undergraduate course. This includes the coordination of different modules of the academic programme, and liaison (via the Year Representatives) between students and the staff teaching them.

The 1st Year Organiser

Dr Maria Charalambides
Room 516
Email m.charalambides@imperial.ac.uk

Welcome Week

During your first week (Welcome Week), and those which follow, your first port of call will be our New Students website. The first week of your first term at Imperial will be a busy one, for which you will be given a separate timetable. Some of the events and requirements need planning; please read this section now.

ID cards

The College-wide security system of ID swipe cards controls and monitors access to halls of residence, and to the departmental building and certain rooms outside normal hours. Your ID card will be your passport for the duration of your course: get it as soon as you can, and treat it with respect.

Once you have registered, the way you obtain your ID card will depend on when you arrive, and where you will be living.

If you arrive after Week 1, you will need to take your Registration Confirmation page to Security (located on Level 1 of the Sherfield Building next to the HSBC cash machine) — where they will take your photo and issue the ID card. Otherwise:

If you will be living in College accommodation and...

• ... you uploaded a photo when you registered, you will be issued with your ID card by the Hall Warden at the hall Safety Briefing.

Or...

• ... you did not upload a photo, your Warden now issue you with a guest card, valid for a limited time only. To obtain a fully validated ID card you will need to take your Registration Confirmation page to Security (see above) to get your picture taken. If you can do this during week 1, the ID card will be sent to the UG Office from where you can collect it.

If you will be living in private accommodation and...
• ... you uploaded a photo when you registered and you arrive during Week 1, you should collect your card from the UG Office.

Or...

• ... you did not upload a photo and are arriving in Week 1, you must take your Registration Confirmation page to Security (see above) to get your picture taken. The ID card will then be sent to the Undergraduate or Postgraduate Office from where you can collect it.

**Warning**: Lending your swipe card to friends or acquaintances, for however short a time, is a serious offence which can result in your being asked to leave the College permanently. **Never, ever lend your card knowingly to a third party.**

**Related Links**
- Student registration website
- Key contacts on page 3

### Safety

*Mechanical engineers make things, break things and deal with potentially dangerous quantities: power, energy, force, pressure, mass and velocity. To be a professional engineer your consciousness of risk, and concern for your own and others' safety, must be instinctive. We will emphasise this from day one.*

Very soon after registration, every student must attend the **Departmental Safety Briefing**. This will cover all of the absolute essentials including first aid, fire drills and security.

**Important**: The College is required, under the Health and Safety at Work Act (1974), to formally acquaint all its members with their legal responsibilities for the maintenance of their own safety and that of others.

**Warning**: Failure to attend the Safety Briefing will forfeit the protection offered by the Act and render you vulnerable to personal prosecution in the courts. In any event, you will certainly not be allowed to work in the departmental laboratories or workshops.

Once you accept a place at Imperial College you agree to abide by the Heath & Safety policy.

**Related Links**
- Departmental Safety website
- College Safety Policy statement (pdf)

### Personal protection equipment

*The department has exceptionally good lab and workshop facilities. To use them, you must be wearing suitable protective clothing — most of which will be issued to you.*

**Important:**

It is a Departmental health and safety requirement that before using any of the workshop machinery, you are wearing appropriate clothing.

Before you attend the Student Workshop for the first time, you will be asked to provide height and weight details. Shortly afterwards, you will be provided with your own personal boiler suit and safety glasses.

You will also be provided with a white lab-coat, which you must wear when entering any of the laboratories in the building except the Mechatronics lab.

On every subsequent occasion that you enter the Student Workshop, you must wear this protective equipment. You must also wear shoes sturdy enough, and with thick enough soles, to protect your feet from any heavy object that may fall on them or any sharp object you may tread on. Anybody wearing open-toed shoes or sandals will be refused access.

**Tip**: It is your responsibility to know when you should be attending laboratory or workshop sessions and to have adequate personal protection equipment available. Keep it all on-site, in your locker!
Security

*Imperial is a relatively public space, the City and Guilds Building is situated near its front entrance and, sadly, thefts do occur from time to time. It is essential to look after your own property and to remain vigilant.*

Take great care of both your personal property and that of the College.

- Do not keep valuables even in your locker, even if it is locked.
- Do not leave wallets in jackets in empty rooms
- Take care of handbags

**Important:** If you lose anything, report it promptly to the Security Officer in Sherfield Building (ref. 20 on Campus Map, internal tel. 4444). It is especially important to report a lost or stolen ID card.

If you find an ID card or any apparently lost property in the Mechanical Engineering Department, please hand it in to the Undergraduate Office or Postgraduate Office on Level 5 of the City & Guilds Building.

Related Links

- Information on ID cards
- South Kensington campus map on page 18
- The Undergraduate Office on page 24

Lockers

*During Welcome Week you will be allocated a numbered locker in the City and Guilds Building. We plan for this to remain your locker for the duration of your course. Use it for secure storage of any items which you might not need immediately, such as protective clothing for the workshop.*

The lockers require a standard, small sized padlock (25 mm centreline on 6 mm diameter hasp) which you can bring with you or purchase locally.

Health services

*A list of health and welfare services is available in the College throughout the Department and College. You will probably need to make little or no use of these services, but you should register as an NHS patient with the Health Centre within the first few weeks of term.*

**Health Centre**

- 40 Prince’s Gardens Southside, Watts Way, London SW7 1LY
- 24-hour telephone service: +44 (0)20 7584 6301
- Emergencies (Security) 4444 (internal) Internal extension 49375/6
- Opening times: term time 08.00–18.00 Monday, Wednesday, Thursday and Friday 08.00–13.00 Tuesday; vacations 08.00–17.00 Monday, Wednesday, Thursday and Friday, 08.00–13.00 Tuesday. Closed at weekends and on public holidays.

On weekdays during the Christmas and Easter closures, the Health Centre runs an emergency clinic only, 08.00–10.00. Reception is open 08.00–13.00.

**Out of hours services**

If you are registered with the Health Centre as a National Health Service (NHS) patient, and need medical advice outside normal opening hours please telephone the surgery as usual. Follow the recorded instructions which explain how to contact the out-of-hours service.

The Health Centre provides a 24-hour emergency service for NHS registered patients only. If you are not eligible to register there, you may use its on-site services during normal working hours only. Make sure you
are registered with an NHS General Practitioner (GP) near where you live during term, in case you need the doctor to visit you there or need medical advice out-of-hours.

**Nearest Accident and Emergency (A&E) departments**

- Chelsea and Westminster Hospital 369 Fulham Road London SW10 9NH
- St Mary’s Hospital, Praed Street, London W2 1NY

**Important:** Accident and Emergency (‘A&E’) departments should only be used for accidents and emergencies. If your problem is not a true emergency, or you are unsure of what to do, please contact the Health Centre out-of-hours service.

**Related Links**

- [College site for student health and wellbeing](#)
- [Imperial College Health Centre](#)
- [Email Health Centre](#)

**Imperial Horizons**

*The Imperial Horizons programme offers UG1-2 students the opportunity to develop knowledge and skills beyond their core degree subject. There are courses on subjects including languages at various levels, humanities, business and global issues. The aims are to broaden undergraduate education, inspire creativity and enhance professional impact.*

In 2015-16, Imperial Horizons will be offered to all first and second years in autumn and spring Terms. Key selling points are:

- Students develop a unique career edge. The courses are a selling point for employers, developing valuable skills in communication, team-working and problem-solving, and promoting enhanced business and organisational awareness.
- Improved student experience. The courses are designed to have maximum positive impact on student experience.
- Free and taught during scheduled teaching slots. All Departments have organised timetables to avoid the scheduled Horizons slots (16.00-18.00 on Tuesday for UG1 and Monday for UG2). There are no additional charges.

Courses run for one or two terms. Students who enrol on a one-term course are encouraged to use the other term for a second course.

**Table 1: Dates for incoming 1st years in October 2015.**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperial Horizons enrolment opens</td>
<td>Monday, 7 September, 2015</td>
<td>—</td>
</tr>
<tr>
<td>Imperial Horizons enrolment closes</td>
<td>Monday, 12 October, 2015</td>
<td>17:00</td>
</tr>
<tr>
<td>Allocations confirmed</td>
<td>Friday, 23 October, 2015</td>
<td>—</td>
</tr>
</tbody>
</table>

Register your course preferences on the Imperial Horizons website during Welcome Week, before enrollment closes.

Informal information sessions where you can meet some of the teaching and administrative team to find out more about the programme or a particular course will take place Monday, Tuesday, and Thursday during Welcome Week from 12-2pm, in the Centre for Languages, Culture and Communication (access via Level 3 Sherfield Building).

To find our more, visit the website: [www.imperial.ac.uk/horizons](http://www.imperial.ac.uk/horizons).
Meeting your Personal Tutor

As one of a group of about four, you will be allocated to a member of staff who will act as your Personal Tutor. You will meet him/her regularly during the session — in groups and/or individually — to discuss both academic progress and personal topics.

You will find the name and room number of your Personal Tutor in the information pack you receive during Welcome Week. Lists will also be posted on the ME1 notice board, situated next to the lifts on Level 2 of the City and Guilds Building. A first group meeting with your Personal Tutor has already been scheduled but if unavailable at that time, s/he will contact you to arrange an alternative appointment.

Communications

Our primary channel for maintaining contact with you is e-mail. Letter post is still used for information from outside, and delivered to the concourse letter rack. You must check this regularly.

The email address issued to you on registration will remain active until one year after you leave Imperial. You can use this address freely to communicate with other students, staff and people outside the College. We try to email you no more than necessary, but messages will still be necessary — and some of these will be very important and, possibly, urgent.

Caution: You must check your e-mail regularly for incoming messages. If you fail to read and clear your inbox regularly you may be unable to receive further mail: any resulting failure to read important communications will not be accepted as grounds for mitigation.

If necessary, ICT can redirect your mail to a colleague or to a non-Imperial email address.

There are letter racks, for both internal and external mail to students, on the Level 2 concourse near the drinks machines.

On the Level 2 concourse there are year group and general notice boards as well as displays of staff and student photos.

Related Links

Teaching staff listed by surname
Re-directing Imperial email to a non-Imperial address

Blackboard VLE

For any question connected in any way with your course, try Blackboard first. We use this web based Virtual Learning Environment (VLE) for most teaching materials and activities, and it is updated constantly. Information from other departments and from College administration is better found using the web.

As a registered student, you should already be registered on Blackboard (http://bb.imperial.ac.uk). Log in using your College username and password.

Note: Blackboard is linked to the College login system: if you change your College password, your Blackboard password will change.

Each student cohort has a General Information Organisation (under My Organisations) which is dynamically updated, and should be your first point of reference. Each year will be registered onto the relevant Blackboard course pages.

Related Links
Computers

*The Department’s main undergraduate computing facility is equipped with medium specification PCs running Windows 7. All run the same suite of software, and their use is often reserved for timetabled classes. Outside those periods they are normally available for individual use, but it is important to minimise social networking time.*

As an undergraduate you have right of access to more than 240 computers in rooms 203, 761, and 762 of CAGB, and rooms 208, and 317 in the Skempton Building (map 27).

All shared computers are loaded with a standard suite of software including Microsoft Office, drawing and CAD applications, stress analysis and fluid dynamics applications and other, more specialised engineering software. You will use these facilities for timetabled programming classes in ME1 and ME2, and for specialised electives in later years. At other times they are available for report writing and preparing presentations etc.

Printing facilities are available in all computer rooms and are accessed using your College ID card. You will be given £15.00 of printer credit at the beginning of each year, after which you can purchase printer credits to charge your card at the Central Library or online. Printing costs 3p per black and white A4 page and 6p per colour A4 page.

If you are thinking of buying a computer, special educational discounts are available, once you have registered, from the College Purchasing website. Consumables can be purchased at the Union Shop on the Sherfield Walkway, and software at the online ICT Software Shop.

Related Links
- [ICT resources for new users](#)
- [ASK ICT - the ICT service desk](#)
- [Union shop website](#)
- [Purchasing website](#)
- [ICT Software Shop](#)
- [Login to online print service (on site or via VPN only)](#)

Internet access

*Imperial College London provides and supports excellent access to the internet, both on-site and in halls. However, this access is not unrestricted and its misuse, or its use for anti-social behaviour, are regarded as serious offences.*

An account for access to IT facilities was created for you on registration, and you have been provided with a username and password for login and internet access via Outlook, Internet Explorer and Firefox. If you forget your password and need to obtain a new one, you will need to produce a valid college ID card.

Mobile access to many services is available through the Imperial College Mobile app.

**Warning:** In your contract as a student you have agreed to abide by the Conditions of Use of IT Services. These conditions concern anti-social behaviour by which other users can be affected and areas of misuse which come under UK Law. The College network extends to student halls and here, again, it is important to be aware of the restrictions imposed both by College regulations and by national law.

**Remember:** Even outside timetabled class periods, private study and report deadlines can put heavy pressure on computer resources. Please keep your social networking and recreational surfing time to a considerate minimum on College owned computers.
Related Links

- Conditions of use of IT facilities
- Internet and phone in student halls
- Information on Imperial College Mobile app

Library

The College’s Central Library is next to the Sherfield Building. It provides access to high quality resources including electronic journals, databases, textbooks, print journals and maps. PCs and wireless access to the College computing network are also available.

Much more information is available on the library’s website, and you will be given an induction course during the first week of term.

The Liaison Librarian, who is shared with the Departments of Bioengineering and Materials, can provide or arrange

- Training for students and staff on how to use the library and its services
- Support on how to use the library’s resources
- Advice on how to cite, reference or use RefWorks

etc. etc..

The Liaison Librarian is available in the Central Library, Room 110, on Tuesdays 12:30–14:00 or at another time by arrangement.

<table>
<thead>
<tr>
<th>Post</th>
<th>Holder</th>
<th>Email</th>
<th>Phone</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liaison Librarian (Engineering)</td>
<td>Nicole Urquhart</td>
<td>n.urquhart</td>
<td>41889</td>
<td>Library</td>
</tr>
</tbody>
</table>

Related Links

- Central Library website

Bicycle and car parking

Cycling in London is not easy, but there are many secure bike parking spaces on campus. Driving a car is even more difficult and parking spaces are virtually non-existent.

There are five designated bike parking areas of which the closest, with 600 spaces, is under the Faculty Building (the ‘blue box’, number 22 on the Campus map) behind the City & Guilds building. Car parking space on the College site is very limited, and availability varies as spaces are used for building and maintenance work. If any spaces are available for students then they will be administered by the Student Union.

Important: Public transport links to and from the campus are excellent: we strongly advise that you do not bring a car to the College.

Related Links

- Map of bike parking facilities in the area (pdf)
- Transport for London site

The Student Hub

The Student Hub, situated in Sherfield Building, provides a ‘one-stop shop’ for all key information and support you might need for life at Imperial.
Amongst the services and topics on which knowledgeable staff can offer advice, support and comprehensive information are:

- Accommodation
- Financial support
- Tuition fees
- Student records
- Exams
- International student issues

The Student Hub can be found on Level 3, Sherfield Building and is open Mondays to Fridays 09.30–17.00 (10.00–17.00 on Wednesdays).

Related Links

**Student Hub**

---

**Disability**

*Studying at university can be a special challenge if you have a disability. It is very important that you let us know about any disability, specific learning difficulty or health problem as soon as possible. We can then arrange the expert advice and support you need to fulfil your potential and to graduate with the degree you merit.*

Some students who have experienced any of the issues listed below never think of themselves as having a disability, but find that additional support makes all the difference to their study experience.

- Specific learning difficulties (such as dyslexia, dyspraxia, AD[H]D)
- Autistic spectrum disorder (such as Asperger’s)
- Deafness or hearing difficulties
- Long term mental health difficulties (such as chronic anxiety, bipolar disorder, depression)
- Medical conditions (such as epilepsy, arthritis, diabetes, Crohn’s disease)
- Physical disabilities or mobility impairments
- Vision difficulties.

The Departmental Disability Officer (DDO) should be your first point of contact. The DDO will be able to help you with arranging whatever support is necessary within the department. The DDO is also the person who will apply for Special Examination Arrangements on your behalf. You should contact them without delay if you think that you may need extra time or other adjustments for your examinations.

Departmental Disability Officer
Dr Fred Marquis
Room 552
Email a.marquis@imperial.ac.uk

Related Links

**Email Disability Liaison Officer**

**The Disability Advisory Service** on page 30
Student Counselling

The Student Counselling Service offers short-term counselling to all registered students of Imperial College London. It is free and confidential.

The primary purpose of the Student Counselling Service is to enable students to become more effective in their lives within and outside Imperial College. They offer a confidential space where you can talk about issues you feel troubled by. They will not usually pass on personal information about you to anybody outside the Service, unless you have given us permission to do so.

Location

The Service is located on Level 4, Sherfield Building. From the lifts on Level 4, walk diagonally to your right to the corner of the lift foyer. Go through the double doors and left up the ramp, through another set of double doors, and reception is the sixth door on your right: Room 449.

Opening times

Reception is usually open on weekdays in term time between 9.30 - 12.30 and 13.30 - 16.15. Times may vary out of term time.

Appointments

Contact the Service's Co-ordinator, Maggie Backhouse by telephone on 020- 7594 9637 or by email (counselling@imperial.ac.uk) to make an appointment.

Careers Service

The Careers Service provides a comprehensive careers guidance, information and vacancy service for all College students and alumni of Imperial College, from first to final year undergraduates and postgraduates.

The Careers Service (www.imperial.ac.uk/admin-services/careers/) arranges various seminars and events throughout the year.

Careers advice and guidance

- Expert one to one advice with one of the careers consultants, through 20 minute discussions and 40 minute discussions.
- Book 20 minute discussions through JobsLive (Career Management System).

CV, application and interview seminars

- Run throughout the autumn and spring terms.
- To help you improve your presentation with employers.

Careers information resources

- Useful careers information resources set out in a comfortable information room to allow you to research your career options.

A range of employer events throughout the year

- Employer presentations, skills workshops and careers talks to give you an opportunity to speak directly to graduate recruiters.

Careers fairs

- provide a range of Careers Fairs each year including an annual Engineering Careers Fair, Science Fair, PhD Fair and Banking and Finance Fair, and various other sector focussed events
Support for the academic transition

Students who join Imperial are all academically able, but they come from a diversity of secondary education cultures. Adjusting to the challenge of higher education can be tough, and we offer some special resources to support you.

Related Links
The Imperial Success Guide: everything you need to support the transition from school to university

The Imperial Success Guide: Attain Academic Excellence at Imperial

The College has launched a new on-line resource to support the academic transition into Imperial (www.imperial.ac.uk/students/success-guide). This guide includes information on effective study, assessments and feedback, wellbeing, workshops and support to ensure that you know where to look for advice and guidance relating to study skills.

English classes for overseas students

The undergraduate course involves a substantial amount of reading and writing, as well as oral presentation. Fluency in English is vital if you are to be successful in the course.

The Centre for Academic English (www3.imperial.ac.uk/academic-english) runs a series of English classes in the evenings for students who need tuition and practice.

Caution: Failure to attend these classes could result in your not understanding the lectures and hence failing the end-of-year exams.

Related Links
English language support offered by the Centre for Academic English
Centre for Academic English, information for undergraduates and exchange students

Applied Mathematics

Many students with good maths A-levels run into difficulties with maths when they arrive at university. On our programme particular problems arise with topics in basic mechanics, which not all students have covered. An additional course is provided to support those who need it.

The Applied Mathematics course runs in autumn term. Every student must pass it, by one of two routes:

1. There will be an assessment test (an exam containing a series of short questions) during the first week. If you do well you will be deemed to have passed immediately.
2. Those who do not do so well will need to complete the full course and pass an assessment at the end of the autumn term.

Warning: Students who do not pass the Applied Mathematics course will be deemed to have failed to follow the prescribed programme — and must therefore expect to withdraw from the College.

The topics covered are:

- Kinematics — velocity, displacement and acceleration. Constant acceleration equations.
- Force and acceleration, Newton’s first and second laws, multiple forces, net force, equilibrium, acceleration due to gravity, weight.
- Resolving forces.
- Newton’s Third Law.
- Conservation of momentum and impulse.
- Combining and splitting forces, resultant and component — representation of forces and forces in equilibrium.
• General motion in a straight line, use of calculus. Work, energy, both kinetic and potential. Moments and equilibrium of rigid objects.

Tip: Further support for maths is offered by the online METRIC project (www.imperial.ac.uk/engineering/staff/learning-technology/metric), developed by Imperial’s Mathematics Department. METRIC concentrates mainly on “pure” maths topics, and can serve as a useful self-study aid in parallel with other subjects throughout your programme.

Please don’t get discouraged about mathematics. We understand that students have a wide range of backgrounds. You may well find that you are unfamiliar with the topics listed above or with some of the METRIC material. Our aim is to help you to fill in the knowledge gaps during the first year, so that you will have the mathematical skills you will need.

Related Links
Module search page on Blackboard
METRIC website

Technical communication skills

Communicating information about science and technology is a specialised skill in which words, data and images must be used with clarity, precision and economy. Most students will already be familiar with the necessary software but not all students are equally skilled. We offer a short self-taught primer to get you up to speed.

One of your first modules in ME1 is Experimental Reporting Skills, in which you will learn to write a report to professional standards.

You can save yourself a lot of time and struggle with what may be unfamiliar software by putting together a ‘Technical Communication Toolbox’ — preferably before you arrive — using this self-taught course. As well as giving you exercise in the skills you will need very often throughout the programme, this course will save you time by providing you with ready-made, personalisable templates.

Related Links
Technical Communications Tookit self-teaching resource (pdf)

Attendance

The College is legally obliged to ensure that its registered students are genuinely in attendance, and it has a duty of care for them. It also requires students to follow the prescribed course. Various checks are made to ensure that you are present, safe and engaged in study.

The large majority of students are legally adults; therefore, like all adults, they have social and legal obligations. Your attendance will not be checked at lectures. However, it will be checked on any occasion at which your absence would result in the loss of coursework marks either by yourself or, potentially, by colleagues in a group activity. In ME1 and ME2 attendance will also be checked at tutorials.

Important: College regulations require undergraduates to inform the Senior Tutor if they are to be absent for more than three consecutive days during term time. If the absence is due to illness a medical certificate must be produced within seven days of your return to College. Any absence should be communicated to your personal tutor.

Related Links
Mitigating circumstances for assessment on page 62

Part-time work during term

To cope with the financial pressures of full-time study, many students take occasional or part-time jobs. This is permitted and even recognised as a useful part of general education, but it is essential to maintain the balance with academic work.
The status of your degree is based on the demands it makes on you: our full-time degree programmes are a full-time job. However, we know that some students, for various reasons, will seek part-time work — and that the benefits may be social as well as financial.

The College permits full-time students to take up part-time work during term-time, but it recommends that you do not do so. If you must, you are advised to work no more than 10-15 hours per week, mainly at weekends and never within the normal working hours of the College. Ultimately the decision is yours, but you should discuss it with your personal tutor.

**Warning:** Under no circumstances can a commitment to part-time work ever be claimed as a ‘mitigating circumstance’ for coursework or examination assessment.

**Sponsored students** should note that some sponsors may not permit students to take up work outside their studies and others may specify a limit.

**International students** should be advised that most visas allow students to work no more than 20 hours a week.

**Related Links**
- College policy on student employment during studies (pdf)
- International Office information concerning visa restrictions on employment

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**Plagiarism**

*Plagiarism is the presentation of another person’s thoughts, words or images and diagrams as though they were your own. It is extremely important to understand exactly what this means before you submit your first item of work for assessment, because the penalties for plagiarism are very severe.*

When you graduate from this Department with an MEng degree you will be a few steps away from Chartered status in a profession. We are trusted to ensure that you have not only the knowledge and skills but also the ethical standards which you need to deserve that status. For this reason, and because the internet offers such free access to information, the College treats plagiarism and cheating offences very seriously indeed.

Within the first week of term you will hear a lecture on plagiarism by a representative of the College Library. Attendance at this lecture is compulsory.

The department uses the plagiarism detection site TurnItIn both to filter electronic submissions of coursework and to check electronic duplicates of printed submissions. If any significant level of plagiarism is detected in any submission, the best possible outcome will be a mark of zero.

**Related Links**
- Library information on plagiarism
- plagiarism.org information site, provided by Turnitin
- TurnItIn website
- Policy and procedures on plagiarism and cheating
- Library information on plagiarism
- plagiarism.org information site, provided by Turnitin
- TurnItIn website
- Policy and procedures on plagiarism and cheating

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**Imperial College Union**

*Every student who registers at Imperial College London automatically becomes a member of the Students’ Union. As well as providing an overall framework for student representation, ICU provides a wide range of information, facilities and social events.*
Within each department, the Union has two Departmental Representatives ('Dep Reps'). You elect these two from amongst the eight Year Representatives ('Year Reps', two elected by each cohort). During your first few days at Imperial your cohort will need to elect its own Year Rep for ME1; this will obviously not be easy, and arrangements will be explained.

Related Links
- Imperial College Union website
- Information on Union Reps and how to become one
- Union Reps for Mechanical Engineering

Joining the IMechE

You will receive information about the Institution of Mechanical Engineers (IMechE), as well as a joining pack, during Welcome Week. We strongly encourage you to make use of student membership: there are no membership fees until you graduate.

The Institution invites all first year students to an informal evening reception towards the end of October at its London headquarters. Further details will be available during your first week and a programme of other events will be posted on the IMechE notice board outside the UG Office.

Related Links
- How to apply for to be an Affiliate Member of IMechE

Vacation work

If sponsored, you will probably return to your company during the summer vacation. If not, you may seek relevant work experience elsewhere, and we can try to help you. Either way, you should join a Monitored Professional Development Scheme (MPDS) under which industrial experience will count towards your registration as a Chartered Engineer.

It may seem very early to begin thinking about your CEng: for the time being, getting a degree will seem ambitious enough. However, workplace experience which you do not record under an MPDS represents additional time which you will have to spend doing so after graduation.

Tip: At this early stage, planning ahead to secure and use vacation placements can help get you Chartered Engineer status up to six months earlier.

Related Links
- What is a Chartered Engineer? on page 123
- Professional development on page 122

South Kensington campus map

The campus map below shows the names and locations of all the major buildings on the South Kensington Campus.
Chapter 2

Support and welfare

Topics:
- About the Department
- The Student Hub
- Coping with stress
- Health services
- Disability
- The Disability Advisory Service
- Student counselling
- English classes for overseas students
- Interruption of studies

Coming to Imperial can be quite daunting if you are moving away from home for the first time — especially if you are also new to this country. The campus is probably bigger than any institution you’ve attended before, and the freedom of life in it is immense. The culture shock can be a challenge, but there are resources at both Department and College level to help you face it.

As well as academic support, the department has a student-led academic and welfare network. Your departmental representatives (dep reps) will introduce themselves in the first week and outline how the student view is fed back to the department to improve your time at the college. The dep reps can be contacted at any time to help you with an issue to do with work or personal life.

Related Links
- College site for student health and wellbeing
- Support for international students
About the Department

This section contains information about the Department of Mechanical Engineering, including some key staff roles and responsibilities.

About the Department

The Mechanical Engineering Department at Imperial has two main missions: teaching and research.

The department has over 600 undergraduates on the four-year course and about 70 postgraduate students on one- and two-year courses for Masters degrees. Most of the formal teaching — lectures, laboratory classes, tutorials etc. — is carried out by the department’s academic staff, of which there are about 50.

The same academic staff also carry out and/or supervise research, together with 80 full-time research staff and about 240 postgraduate students working for their PhD degrees. The department is managed by a Departmental Management Committee, representing both teaching and research and chaired by the Head of Department.

The Faculty of Engineering consists of this department and nine others:

- Aeronautics
- Bioengineering
- Civil and Environmental Engineering
- Computing
- Earth Science and Engineering
- Electrical and Electronic Engineering
- Materials
- Design Engineering

This faculty and three others make up Imperial College London: ‘Imperial’. Although often just called ‘the College’, Imperial — which was until 2007 a college of London University — is an independent university.

In 2013-14, the department received an annual budget from the College of £10.6 million for Teaching and additionally received a further £16.7 million from outside organisations for sponsored research.

Although ‘Mech Eng’ has its own culture and ways of doing things, we share (and rely on) many College resources, procedures and regulations.

Tip: The university and its Student Union recently collaborated to set out in a single, readable and concise document — Our Principles — the ethos of the entire College community.

Related Links

‘Our Principles’ website

Key contacts

Almost all of the 50 or so academic staff and many other members of the department are engaged in teaching, but as an undergraduate student there are a few you will see and hear much more of.
Head of Department

Prof Peter Cawley
Room 460C
Email p.cawley@imperial.ac.uk

The Head of Department is responsible to the University for all of the Department’s activities, both teaching and research.

Senior Tutor

Dr Fred Marquis
Room 552
Email a.marquis@imperial.ac.uk

The Senior Tutor is responsible for the welfare and academic progress of every undergraduate student in the department.

Should you wish to discuss an issue with an alternative member of the faculty, Dr Julie Varley is also available (Room 549, Email: j.varley@imperial.ac.uk, Tel 47089)

Academic Tutor

Dr Juliet Varley
Room 549
Email j.varley@imperial.ac.uk

The Academic Tutor (a new post in this department) is concerned with all aspects of the ‘student experience’, but especially those involving the challenging transition from school to university.
Director of Undergraduate Studies

Dr Mike Bluck
Room 747
Email m.bluck@imperial.ac.uk

Senior UG Administrator

Josie Ann Howard
UG Office, Room 553
Email j.howard@imperial.ac.uk

The Senior UG Administrator is responsible for managing the interaction of students and teaching programmes — dealing, in particular, with timetabling and registration issues.

UG Administrator

Tom Curtin
UG Office, Room 553
Email t.curtin@imperial.ac.uk
Departmental Disability Officer (DDO)

Dr Fred Marquis  
Room 552  
Email a.marquis@imperial.ac.uk

The Departmental Disability Office is able to help students arrange for any special requirements that they may need throughout their study at Imperial (see Disability on page 13).

The Undergraduate Office

Until you graduate, the UG Office will be your main point of contact with the Department.

For any general queries, the UG Office (room 552) is the place to start. The office is open 09:30–15:30 each weekday except Wednesday, when it closes at 13:30.

You will hear a lot from the UG Office — mostly by email — during the course of your studies. Please read emails carefully as they provide vital information on lectures, assessment and other topics of real importance to you. We do try to keep such alerts to a bare minimum.

Just outside the UG office are submission letterboxes for the submissions you need to make in hard copy. Download a cover sheet for each item from Blackboard, sign it to attest that it is your own work and post your submission in the box provided for collection at the deadline time.

⚠️ Warning: The submission for all hard copy assignments is 12:00 noon, and this is an absolute deadline!

Related Links

- ME1 coursework cover sheet
- ME2 coursework cover sheet
- ME3 coursework cover sheet
- ME4 coursework cover sheet

The Senior Tutor

The Senior Tutor is responsible for the welfare and academic progress of every undergraduate student in the department, and works with the student representatives to ensure your course is running as smoothly as possible. He can offer personal advice and help to any student on both academic and non-academic matters.

The Senior Tutor is also on call during vacations but if for any reason he is unavailable, or you are unsure about who to talk to on a particular issue, please ask any staff member in the UG Office and they will decide who is best able to help you.

One responsibility of the Senior Tutor’s team is to maintain records for each student so that, for example:

- You can be notified of your examination results
- You can provide evidence of problems such as ill health, for it to be presented to the Board of Examiners.

Your student file is strictly confidential to the Senior Tutor and his team; no-one else is allowed to consult it.

Should you wish to discuss an issue with an alternative member of the faculty, Dr Julie Varley is also available (Room 549, Email: j.varley@imperial.ac.uk, Tel 47089)
Personal Tutors

Your personal tutor will stay with you from year to year and will probably become the staff member you know best. Both of you should maintain the relationship: you may need their help and support, and s/he will need to know both your academic and personal qualities in order to act later as your referee.

To help your tutor get to know you, much of the coursework you submit via the UG Office will be returned to him/her: this will provide one opportunity to review and discuss your academic work and your progress during the year.

You should feel able to contact your personal tutor at any time.

Duties of a Personal Tutor

The duties expected of a Personal Tutor are outlined by the College but vary from department to department. All Personal Tutors are expected to maintain an overview of their tutees' academic progress and development, and to provide them with regular one-to-one feedback and guidance.

The duties of a personal tutor include:

• Helping first-year students to adjust to the academic and social aspects of university life.
• Directing students towards existing resources to support their transition to academic study.
• Acting as the tutee’s first port of call in the case of academic or non-academic problems.
• Returning marked coursework to first and second year students, and thereby monitoring their progress.
• Monitoring and assessing their tutees’ overall academic performance in ME1-2 progress tests.
• Reporting to the Senior Tutor on the progress of their tutees when requested.
• Reviewing and approving any tutee’s XPD Activity Form, so that ECTS credits can be accrued for an extracurricular course or placement.
• Helping their tutees choose ME3 DMT and ME4 Individual projects, ensuring that they have done so by the specified deadline, and attending a meeting between each tutee and the Project Supervisor at least once per term to monitor progress.
• Attending each tutee’s Individual Project seminar.
• Providing written or on-line references for tutees applying for internships, grants, awards or first appointments. This should provide students with the best possible reason for keeping their tutors in touch, up to date with their CV, and generally pleased to know them.

Related Links

The Imperial Success Guide: everything you need to support the transition from school to university

The Year Organisers

Each of the four Year Organisers is responsible for overall administration of one year of the undergraduate course. This includes the coordination of different modules of the academic programme, and liaison (via the Year Representatives) between students and the staff teaching them.
The 1st Year Organiser

Dr Maria Charalambides
Room 516
Email m.charalambides@imperial.ac.uk

The 2nd Year Organiser

Dr Guillermo Rein
Room 340
Email g.rein@imperial.ac.uk

The 3rd Year Organiser

Dr Daniel Balint
Room 519
Email d.balint@imperial.ac.uk
You should check the ME3 Blackboard site and notice board (on level 7, by the lifts) frequently during term time. Notices and emails are usually the only practicable means of communication in ME3.

**The 4th Year Organiser**

Dr Ambrose Taylor  
Room 515  
Email [a.c.taylor@imperial.ac.uk](mailto:a.c.taylor@imperial.ac.uk)

**Student Exchange Coordinator**  
*The Student Exchange Coordinator is responsible for all students participating in the university exchange programme.*

The Role of the Student Exchange Coordinator is:

- To select the students that will take part in the exchange programme.
- To advise incoming and outgoing students, before and during the exchange, on academic issues such as permissible course choice and credit and course requirements.
- To approve learning agreements submitted by students on exchange.
- To review exams marks and transcripts of incoming and outgoing exchange students.

Dr Stelios Rigopoulos  
Room 620  
Email [s.rigopoulos@imperial.ac.uk](mailto:s.rigopoulos@imperial.ac.uk)

**The Student Hub**  
*The Student Hub, situated in Sherfield Building, provides a ‘one-stop shop’ for all key information and support you might need for life at Imperial.*
Amongst the services and topics on which knowledgeable staff can offer advice, support and comprehensive information are:

- Accommodation
- Financial support
- Tuition fees
- Student records
- Exams
- International student issues

The Student Hub can be found on Level 3, Sherfield Building and is open Mondays to Fridays 09.30–17.00 (10.00–17.00 on Wednesdays).

Related Links

- Student Hub

Coping with stress

Stress — an adverse reaction to excessive pressure from work and your environment — affects many of us, staff included. Coping with it effectively is an essential life skill, and learning to do so will be a valuable part of your education. The College offers extensive help.

Support is on hand at a number of levels.

The workload at Imperial is high, and is likely to be a major factor in how you feel — especially, of course, as exams approach. If you are struggling, talk to your personal tutor first. Both the Academic Tutor and the Senior Tutor can help you to untangle the work and personal factors on you.

Remember: Don’t leave things too late! Seek help before things get on top of you: there’s nothing to be ashamed of in doing so.

Exams, of course, are stress concentration factor number one. The Health Centre and Student Counselling Service offer a wide range of resources to manage exam stress and anxiety, including even general guidance on revision and study techniques. It also runs Exam Stress Workshops from November onwards, allocating places on a first-come, first-served basis.

Related Links

- Health centre website on exam stress
- Health centre website on exam stress
- Student Counselling Service
- Health centre website on exam stress

Health services

A list of health and welfare services is available in the College throughout the Department and College. You will probably need to make little or no use of these services, but you should register as an NHS patient with the Health Centre within the first few weeks of term.

Health Centre

- 40 Prince’s Gardens Southside, Watts Way, London SW7 1LY
- 24-hour telephone service: +44 (0)20 7584 6301
- Emergencies (Security) 4444 (internal) Internal extension 49375/6
- Opening times: term time 08.00–18.00 Monday, Wednesday, Thursday and Friday 08.00–13.00 Tuesday; vacations 08.00–17.00 Monday, Wednesday, Thursday and Friday, 08.00–13.00 Tuesday. Closed at weekends and on public holidays.
On weekdays during the Christmas and Easter closures, the Health Centre runs an emergency clinic only, 08.00–10.00. Reception is open 08.00–13.00.

Out of hours services

If you are registered with the Health Centre as a National Health Service (NHS) patient, and need medical advice outside normal opening hours please telephone the surgery as usual. Follow the recorded instructions which explain how to contact the out-of-hours service.

The Health Centre provides a 24-hour emergency service for NHS registered patients only. If you are not eligible to register there, you may use its on-site services during normal working hours only. Make sure you are registered with an NHS General Practitioner (GP) near where you live during term, in case you need the doctor to visit you there or need medical advice out-of-hours.

Nearest Accident and Emergency (A&E) departments

- Chelsea and Westminster Hospital 369 Fulham Road London SW10 9NH
- St Mary’s Hospital, Praed Street, London W2 1NY

Important: Accident and Emergency (‘A&E’) departments should **only** be used for accidents and emergencies. If your problem is not a true emergency, or you are unsure of what to do, please contact the Health Centre out-of-hours service.

Related Links

- [College site for student health and wellbeing](#)
- [Imperial College Health Centre](#)
- [Email Health Centre](#)

Disability

*Studying at university can be a special challenge if you have a disability. It is very important that you let us know about any disability, specific learning difficulty or health problem as soon as possible. We can then arrange the expert advice and support you need to fulfil your potential and to graduate with the degree you merit.*

Some students who have experienced any of the issues listed below never think of themselves as having a disability, but find that additional support makes all the difference to their study experience.

- Specific learning difficulties (such as dyslexia, dyspraxia, AD(H)D)
- Autistic spectrum disorder (such as Asperger’s)
- Deafness or hearing difficulties
- Long term mental health difficulties (such as chronic anxiety, bipolar disorder, depression)
- Medical conditions (such as epilepsy, arthritis, diabetes, Crohn’s disease)
- Physical disabilities or mobility impairments
- Vision difficulties.

The Departmental Disability Officer (DDO) should be your first point of contact. The DDO will be able to help you with arranging whatever support is necessary within the department. The DDO is also the person who will apply for Special Examination Arrangements on your behalf. You should contact them without delay if you think that you may need extra time or other adjustments for your examinations.
Departmental Disability Officer
Dr Fred Marquis
Room 552
Email a.marquis@imperial.ac.uk

Related Links
Email Disability Liaison Officer
The Disability Advisory Service on page 30

The Disability Advisory Service

The departmental Disability Liaison Officer can provide advice, support and referral to the College-wide Disability Advisory Service.

The Disability Advisory Service works with individual students, no matter what their disability, to ensure that they have the support they need. It can also help if you think that you may have a previously unrecognised study problem such as dyslexia. The service is both confidential (information about you is only passed on to other people in the university with your agreement) and individual in that any support is tailored to what you need.

The Disabled Students’ Allowance (DSA) is a grant that can be used to pay any extra costs that are a direct result of disability. In order to apply, you must be a home student with a disability who is resident in the UK, paying home fees; you can be studying full time or part time. This fund is not means-tested and is also a grant not a loan so any home student with a disability can apply and will not be expected to pay it back.

Note: Students with unseen disabilities such as mental health difficulties, dyslexic type difficulties or long term health problems are also eligible for DAS support.

Related Links
Disability Advisory Service
Disabled Students’ Allowance
Email Disability Liaison Officer

Student counselling

The Student Counselling Service offers short-term counselling to all registered students of Imperial College London. It is free and confidential.

The primary purpose of the Student Counselling Service is to enable students to become more effective in their lives within and outside Imperial College. They offer a confidential space where you can talk about issues you feel troubled by. They will not usually pass on personal information about you to anybody outside the Service, unless you have given us permission to do so.

Location
The Service is located on Level 4, Sherfield Building. From the lifts on Level 4, walk diagonally to your right to the corner of the lift foyer. Go through the double doors and left up the ramp, through another set of double doors, and reception is the sixth door on your right: Room 449.

Opening times

Reception is usually open on weekdays in term time between 9.30 - 12.30 and 13.30 - 16.15. Times may vary out of term time.

Appointments

Contact the Service's Co-ordinator, Maggie Backhouse by telephone on 020- 7594 9637 or by email (counselling@imperial.ac.uk) to make an appointment.

English classes for overseas students

The undergraduate course involves a substantial amount of reading and writing, as well as oral presentation. Fluency in English is vital if you are to be successful in the course.

The Centre for Academic English (www3.imperial.ac.uk/academic-english) runs a series of English classes in the evenings for students who need tuition and practice.

Caution: Failure to attend these classes could result in your not understanding the lectures and hence failing the end-of-year exams.

Related Links

English language support offered by the Centre for Academic English
Centre for Academic English, information for undergraduates and exchange students
English language support offered by the Centre for Academic English
Centre for Academic English, information for undergraduates and exchange students

Interruption of studies

The MEng programme, its examination structure and its marking scheme are designed for continuous attendance. Interruption of Studies — effectively, temporary withdrawal — can be arranged for on medical, financial or personal grounds, but can create significant problems especially for international students.

If you wish to take time out from your course of study, speak to your personal tutor first. S/he will refer you to the Senior Tutor, but it is important for us to understand your particular case and all aspects of why you wish to take the ‘gap’. If you plans are to work, for example, there may be options for integrating them with your current degree programme or for transferring to another.

Temporarily ceasing to be a student can create significant problems: details of these are given on the Registry website.

Related Links

http://www3.imperial.ac.uk/registry/currentstudents/registrationchanges
Chapter 3

Learning resources and campus facilities

Topics:

- South Kensington campus map
- Learning resources
- Campus facilities
- Workshops

The College Campus will be the focus of your time at Imperial. Most of the learning resources you need for your studies are provided within the Department’s home City and Guilds building, which is open until midnight. Further learning resources are provided on a campus wide basis. There are also many facilities provided elsewhere on the South Kensington which are not directly related to learning.
Learning resources

The following information relates to facilities provided by the Department and more generally by the College to help you to study and to learn more effectively.

Blackboard VLE

For any question connected in any way with your course, try Blackboard first. We use this web based Virtual Learning Environment (VLE) for most teaching materials and activities, and it is updated constantly. Information from other departments and from College administration is better found using the web.

As a registered student, you should already be registered on Blackboard (http://bb.imperial.ac.uk). Log in using your College username and password.
Note: Blackboard is linked to the College login system: if you change your College password, your Blackboard password will change.

Each student cohort has a **General Information Organisation** (under My Organisations) which is dynamically updated, and should be your first point of reference. Each year will be registered onto the relevant Blackboard course pages.

**Related Links**
- [Login to Blackboard](#)
- [Departmental Study website](#)

**Library**

*The College’s Central Library is next to the Sherfield Building. It provides access to high quality resources including electronic journals, databases, textbooks, print journals and maps. PCs and wireless access to the College computing network are also available.*

Much more information is available on the library’s website, and you will be given an induction course during the first week of term.

The Liaison Librarian, who is shared with the Departments of Bioengineering and Materials, can provide or arrange:

- Training for students and staff on how to use the library and its services
- Support on how to use the library’s resources
- Advice on how to cite, reference or use RefWorks

etc. etc..

The Liaison Librarian is available in the Central Library, Room 110, on Tuesdays 12:30–14:00 or at another time by arrangement.

<table>
<thead>
<tr>
<th>Post</th>
<th>Holder</th>
<th>Email (@imperial.ac.uk)</th>
<th>Phone</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liaison Librarian (Engineering)</td>
<td>Nicole Urquhart</td>
<td>n.urquhart</td>
<td>41889</td>
<td>Library</td>
</tr>
</tbody>
</table>

**Related Links**
- [Central Library website](#)

**The Departmental Librarian**

*Like every other department, we have a Departmental Librarian to guide and support your access to central library resources.*

The departmental librarian:

- Maintains a web page
- Offers office hours for consultation: see the web page for details.

**Related Links**
- [Departmental librarian’s web page](#)
- [Email our departmental librarian](#)

**Communications**

*Our primary channel for maintaining contact with you is e-mail. Letter post is still used for information from outside, and delivered to the concourse letter rack. You must check this regularly.*

The email address issued to you on registration will remain active until one year after you leave Imperial. You can use this address freely to communicate with other students, staff and people outside the College. We try to email you no more than necessary, but messages will still be necessary — and some of these will be very important and, possibly, urgent.
Caution: You must check your e-mail regularly for incoming messages. If you fail to read and clear your inbox regularly you may be unable to receive further mail: any resulting failure to read important communications will not be accepted as grounds for mitigation.

If necessary, ICT can redirect your mail to a colleague or to a non-Imperial email address.

There are letter racks, for both internal and external mail to students, on the Level 2 concourse near the drinks machines.

On the Level 2 concourse there are year group and general notice boards as well as displays of staff and student photos.

Related Links
  Teaching staff listed by surname
  Re-directing Imperial email to a non-Imperial address

Internet access

*Imperial College London provides and supports excellent access to the internet, both on-site and in halls. However, this access is not unrestricted and its misuse, or its use for anti-social behaviour, are regarded as serious offences.*

An account for access to IT facilities was created for you on registration, and you have been provided with a username and password for login and internet access via Outlook, Internet Explorer and Firefox. If you forget your password and need to obtain a new one, you will need to produce a valid college ID card.

Mobile access to many services is available through the Imperial College Mobile app.

Warning: In your contract as a student you have agreed to abide by the Conditions of Use of IT Services. These conditions concern anti-social behaviour by which other users can be affected and areas of misuse which come under UK Law. The College network extends to student halls and here, again, it is important to be aware of the restrictions imposed both by College regulations and by national law.

Remember: Even outside timetabled class periods, private study and report deadlines can put heavy pressure on computer resources. Please keep your social networking and recreational surfing time to a considerate minimum on College owned computers.

Related Links
  Conditions of use of IT facilities
  Internet and phone in student halls
  Information on Imperial College Mobile app

Computers

*The Department’s main undergraduate computing facility is equipped with medium specification PCs running Windows 7. All run the same suite of software, and their use is often reserved for timetabled classes. Outside those periods they are normally available for individual use, but it is important to minimise social networking time.*

As an undergraduate you have right of access to more than 240 computers in rooms 203, 761, and 762 of CAGB, and rooms 208, and 317 in the Skempton Building (map 27).

All shared computers are loaded with a standard suite of software including Microsoft Office, drawing and CAD applications, stress analysis and fluid dynamics applications and other, more specialised engineering software. You will use these facilities for timetabled programming classes in ME1 and ME2, and for specialised electives in later years. At other times they are available for report writing and preparing presentations etc.

Printing facilities are available in all computer rooms and are accessed using your College ID card. You will be given £15.00 of printer credit at the beginning of each year, after which you can purchase printer credits
to charge your card at the Central Library or online. Printing costs 3p per black and white A4 page and 6p per colour A4 page.

If you are thinking of buying a computer, special educational discounts are available, once you have registered, from the College Purchasing website. Consumables can be purchased at the Union Shop on the Sherfield Walkway, and software at the online ICT Software Shop.

Related Links
- ICT resources for new users
- ASK ICT - the ICT service desk
- Union shop website
- Purchasing website
- ICT Software Shop
- Login to online print service (on site or via VPN only)

Microsoft Office 365

Once registered, all students at Imperial College are automatically granted access to Microsoft Office 365. Students at Imperial College are given access to Microsoft Office 365 for the duration of their studies. This allows access to the latest versions of Word, Excel and PowerPoint as well as 1TB of online storage space on OneDrive.

Related Links
- Imperial ICT Microsoft Office 365 page
- Managing your ICTprintservice account

Copying and printing

Copying facilities across the campus can be accessed using your College ID card and charges will be deducted from your electronic print account. An on-site contractor provides facilities for more advanced tasks.

Every year, your print account card will be topped up with credit (usually £15) for work use. Additional money can be added when needed through vending style machines in the library or online.

Printers (with photocopying capability) are available in:
- Every computer room
- Central Library.

Some projects require that you design a poster to present your work. The poster can be printed at Service Point, the College’s on-site contractor for bulk and professional printing.

**Remember:** Even if it is posted on Blackboard, every document you will need for scheduled teaching activities will be printed and provided to you! These handouts are usually issued at lectures, and only if you miss them will you need to print your own copy.

Related Links
- Managing your ICTprintservice account
- Directions to Service Point (pdf)

Personal protection equipment

The department has exceptionally good lab and workshop facilities. To use them, you must be wearing suitable protective clothing — most of which will be issued to you.

**Important:**

It is a Departmental health and safety requirement that before using any of the workshop machinery, you are wearing appropriate clothing.
Before you attend the Student Workshop for the first time, you will be asked to provide height and weight details. Shortly afterwards, you will provided with your own personal boiler suit and safety glasses.

You will also be provided with a white lab-coat, which you must wear when entering any of the laboratories in the building except the Mechatronics lab.

On every subsequent occasion that you enter the Student Workshop, you must wear this protective equipment. You must also wear shoes sturdy enough, and with thick enough soles, to protect your feet from any heavy object that may fall on them or any sharp object you may tread on. Anybody wearing open-toed shoes or sandals will be refused access.

Tip: It is your responsibility to know when you should be attending laboratory or workshop sessions and to have adequate personal protection equipment available. Keep it all on-site, in your locker!

Lockers

During Welcome Week you will be allocated a numbered locker in the City and Guilds Building. We plan for this to remain your locker for the duration of your course. Use it for secure storage of any items which you might not need immediately, such as protective clothing for the workshop.

The lockers require a standard, small sized padlock (25 mm centreline on 6 mm diameter hasp) which you can bring with you or purchase locally.

Breakout student space (BOSS)

There is a student breakout space, suitable for informal study, on Level 2 of the Skempton Building. It comprises PC/laptop benching, comfortable seating and meeting spaces and is provided with drinking water, vending machines, copiers and a recycling station. Access it from the south end of level 2, near Room 203.

Quiet study space

The City and Guilds Building is entering a period of major refurbishment: until this is complete, it will lack study space like that of the Central Library Reading Room. Teaching space which is not booked for scheduled classes will normally be left open for quiet study.

By agreement with Security, the following spaces should remain open for study outside hours and at weekends:

| 649-652 | Drawing offices |
| 749-752 | Drawing offices |
| 759B-C | Design studio |

Tip: If you find any of these rooms locked and would like them opened, please contact Security (tel. 48910).

Related Links

Quiet study space on page 37

ICT support

Imperial College Information and Communication Technologies (ICT) provides general assistance with IT issues from a central Service Desk situated in Sherfield Building (Level 4 West). You can contact the service desk personally (08.30 to 18.00, Monday to Friday, excluding College holidays), by phone (020 759 49000, internal 49000) or by email; however, the recommended method is to use the 24 hour online logging service.

Related Links

ICT webpage
ICT resources for new users
Free software for students
Campus facilities

The College provides a number of useful facilities not directly related to teaching that you will need on a day to day basis.

Refectories

There are refectories in the Sherfield Building and the Union Building.

Banking and ATMs

There is a branch of Santander on Level 1, Sherfield Building. There are also cash machines in the Level 1 concourse of the Sherfield Building and in the Mechanical Engineering concourse.

Bicycle and car parking

Cycling in London is not easy, but there are many secure bike parking spaces on campus. Driving a car is even more difficult and parking spaces are virtually non-existent.

There are five designated bike parking areas of which the closest, with 600 spaces, is under the Faculty Building (the ‘blue box’, number 22 on the Campus map) behind the City & Guilds building. Car parking space on the College site is very limited, and availability varies as spaces are used for building and maintenance work. If any spaces are available for students then they will be administered by the Student Union.

Important: Public transport links to and from the campus are excellent: we strongly advise that you do not bring a car to the College.

Related Links

Map of bike parking facilities in the area (pdf)
Transport for London site

Ethos Sports Centre

All undergraduates are entitled to free access the Ethos Sports Centre located on the north side of Prince's Gardens. Once enrolled, students can use the gym and swimming pool. Hire of courts and access to classes are subject to small additional costs.

Related Links

Transport for London site

Workshops

The department has outstandingly good workshop facilities, situated in the adjacent Skempton building. As for any workshop, you must be dressed appropriately before you can enter, and must be properly trained before you can use any equipment.

Important:

To enter any workshop, you must be wearing a lab coat or boilersuit and relevant safety equipment (e.g. safety glasses and footwear etc.). The IDEAs Lab does not include an area for changing,
so **before attending** you will need to change in some suitable area, e.g. Mechanical or Civil Engineering Department washrooms.

**Student Teaching Workshop (STW)**

The STW is a metals & plastics workshop located on the ground floor in the Skempton building (SKEM 150) and is used extensively in ME2, ME3 and ME4 for the production of project work. It is also used by some clubs and societies.

The STW workshop is open between the hours 8:30am to 4:15pm Monday to Friday and permanently supervised by ME technicians. It is also open on selected Tuesday evenings between 5pm and 7.30pm. Access is not permitted during scheduled teaching. See Blackboard site for more details on access times.

Before being allowed to use the Student Teaching Workshop, all users must first complete a safety induction on Blackboard and a workshop skills course. The supervisory staff will determine the maximum number of students allowed in and what activities they may undertake.

<table>
<thead>
<tr>
<th>Post</th>
<th>Holder</th>
<th>Email</th>
<th>Phone</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshop Manager</td>
<td>Andrew Wallace</td>
<td>a.k.wallace</td>
<td>47015</td>
<td>SKEM 150</td>
</tr>
</tbody>
</table>

**STW Capabilities**

<table>
<thead>
<tr>
<th>Capability</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hand tools &amp; Bench area</strong></td>
<td>Accessible during open sessions when there is no scheduled teaching.</td>
</tr>
<tr>
<td><strong>Machine tools</strong></td>
<td>All machine tools in both the STW &amp; IDEAs workshops are colour coded:</td>
</tr>
<tr>
<td>• Lathes</td>
<td>RED spot machine, for use only by workshop technicians</td>
</tr>
<tr>
<td>• Milling machines</td>
<td>AMBER spot machine, for use by students under the supervision of a technician after the completion of the necessary training &amp; induction.</td>
</tr>
<tr>
<td>• Drills</td>
<td>GREEN spot machine, for use by students without the supervision of a technician but after the completion of induction.</td>
</tr>
<tr>
<td>• Bandsaws &amp; Chopsaws</td>
<td></td>
</tr>
<tr>
<td>• Electric Pipe Bender</td>
<td></td>
</tr>
<tr>
<td>• Sheet Metal machinery</td>
<td></td>
</tr>
<tr>
<td><strong>CNC Milling &amp; Turning</strong></td>
<td>Submit a CNC request form to Technician.</td>
</tr>
<tr>
<td>For producing complex machined parts in metals and plastics.</td>
<td>Students must provide the material (except for FDM), solid model file and drawing of the object. For laser cutting, students must provide a .dxf file of profile or outline and a drawing. Suitable materials are available in the ME Stores.</td>
</tr>
<tr>
<td>• Haas MiniMill</td>
<td></td>
</tr>
<tr>
<td>• Hurco VM1 Mill</td>
<td></td>
</tr>
<tr>
<td>• Haas ST10 Lathe</td>
<td></td>
</tr>
<tr>
<td><strong>FDM Additive Manufacturing</strong></td>
<td></td>
</tr>
<tr>
<td>Complex models in ABS.</td>
<td></td>
</tr>
<tr>
<td>• Stratsys Dimension 1200</td>
<td></td>
</tr>
<tr>
<td><strong>Laser Cutting</strong></td>
<td></td>
</tr>
<tr>
<td>For metals, wood and plastics.</td>
<td></td>
</tr>
</tbody>
</table>

*This includes ME2, ME3 and ME4, AME, IDE and GID enrolled students working on coursework projects.*
The IDEAs Lab

The IDEAs Workshop is a craft materials and wood workshop also used for assembly and testing of projects. It is located in SKEM 238, above the STW in Skempton. It is mainly used in ME3 and ME4 for group and individual project work, and some teaching. The facility is shared with the School of Design Engineering and as a College Hackspace.

The IDEAs workshop is open between 8.00am and 10.00pm, 7 days per week excluding college closure days. Entry is by swipe card. The IDEAs workshop is not permanently supervised by ME technicians.

Before being allowed to use the IDEAs workshop, all users must first complete a safety induction on Blackboard and a workshop skills course.

### Post Holder Email Phone Room

| Workshop Manager | Andrew Wallace | a.k.wallace | 47015 | SKEM 150 |

**Related Links**

*Email IDEAs Lab Coordinator*

*Download COSHH form*

### IDEAs Lab Capabilities

<table>
<thead>
<tr>
<th>Capability</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hand tools</strong></td>
<td>A selection of hand tools are available for use.</td>
</tr>
<tr>
<td><strong>Toolkits</strong></td>
<td>During supervised hours tool boxes and cordless tools are made available upon request. Both items are provided on longer term loans by a booking system. Individuals are then responsible for losses or damage of items. Items must not be removed from the workshop.</td>
</tr>
<tr>
<td><strong>Cordless hand tools</strong></td>
<td>A selection of cordless tools are available for use, charging points for batteries are provided in the Store room.</td>
</tr>
<tr>
<td><strong>Dust Extraction</strong></td>
<td>Workshop has 2 provisions: 1. Down draught air benches for desktop work must be used for all small and portable objects. 2. Portable vacuum units are available for all larger immovable items.</td>
</tr>
<tr>
<td><strong>Machine tools</strong></td>
<td>All machine tools in both the STW &amp; IDEAs workshops are colour coded: RED spot machine, for use only by workshop technicians AMBER spot machine, for use by students under the supervision of a technician and after the completion of the necessary training &amp; induction.</td>
</tr>
<tr>
<td>Capability</td>
<td>Constraints</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>Learning resources and campus facilities</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Capability**

**Constraints**

GREEN spot machine, for use by students without the supervision of a technician but after the completion of induction.

---

**Laser Cutting and Etching**

For light materials such as plywood and MDF up to 6mm, plastics and acrylics, card etc. No metals.

- LaserCam A2 60W

Request to Technician.

Provide own materials and .dxf file of profile or outline. Service is free for all ME taught courses; there is a charged service for non-ME students and researchers.

---

**CNC Router**

For producing 3D machined models and parts in light materials such as model board and foam.

- Unimatic

Request to Technician.

Provide own materials and solid model file of object. Service is free for all ME taught courses; there is a charged service for non-ME students and researchers.

---

**Vacuum Forming**

Small format vacuum forming in light thermoformable polymers up to 6mm in thickness.

Request to Technician.

Provide own materials and discuss mould tool manufacturing method with technician. Service is free for all ME taught courses; there is a charged service for non-ME students and researchers.

---

**Resin Room**

For working with epoxy resins etc. requiring ventilation or fume extraction. The area is NOT SUITABLE for spray painting, only brush application.

Technician supervised activity, only available during working hours.

Students must complete short induction and provide COSHH/MSDS safety data sheets for materials and technical specification sheet.

---

**Project storage**

Project work is not to be left out on benches without the explicit permission of the IDEAs workshop technicians.

Storage boxes are provided for all individual and group projects and are allocated on request to a technician.

Rack space is provided for larger format project work.

---

**Consumables**

A selection of project assembly consumables such as screws, nails, pins, adhesives, tapes etc. are freely available.

All these items are kept in the central store room. The room is open during supervised hours and accessible by door combination outside of supervised hours.

---

**Pit Garage**

The Pit Garage is a specialist facility provided exclusively for groups and individuals working on vehicle projects either as part of their DMT or ME4 projects, or as ex-curricular club activities.

The Pit Garage is open between 8.00am and 10.00pm, 7 days per week excluding college closure days. Entry is by a door code.

The PG is not supervised and is only for use by ME2, ME3 and ME4 students. All users must complete a separate induction on Blackboard.

---

* This includes ME2, ME3 and ME4, AME, IDE and GID enrolled students working on coursework projects.
Pit Garage Capabilities

<table>
<thead>
<tr>
<th>Capability</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand tools &amp; power tools</td>
<td>A selection of hand and power tools are available for use. Some are controlled by operating rules.</td>
</tr>
<tr>
<td>• Cutting and shaping tools.</td>
<td></td>
</tr>
<tr>
<td>High Power Electrical test equipment</td>
<td>Use of this equipment is heavily regulated and subject to Risk Assessment, requiring training in Safe Operating Procedures.</td>
</tr>
<tr>
<td>• Power Supplies</td>
<td></td>
</tr>
<tr>
<td>• Load Bank</td>
<td></td>
</tr>
<tr>
<td>Dynomometer</td>
<td>Users are required to be trained and assessed before accessing the dyno, when in use the PG is closed to all other users.</td>
</tr>
<tr>
<td>• A full vehicle dyno for dynamic performance testing.</td>
<td></td>
</tr>
</tbody>
</table>

Stores

ME Stores is the delivery and collection point for all purchases in the ME dept delivered by parcel courier. ME Stores also has a metals store where students can obtain materials for their project work.

The Stores is open Monday to Friday from 8.00am to 3.30pm and is closed between 1pm and 2pm.

To obtain any of materials you must complete a Stores Requisition requiring a project number and the signature of a supervising member of staff.

When you have a delivery for collection you will receive an e-mail advising your goods have arrived. Always ensure your name is specified on the original order.

Mechatronics Teaching Lab and Projects Room

The Mechatronics Teaching Lab is located in room 770, above the Business School Foyer.

The Teaching Lab is only open during scheduled teaching or by arrangement.

The Mechatronics project room is a small workshop located next to the Mechatronics Teaching Lab where undergraduate can build and test electronic circuits and devices for use on their projects.

The projects room is open between 8.00am and 10.00pm, 7 days per week excluding college closure days. There is no control over access but all users are expected to undergo an induction to ensure their understanding of safe working methods.
# Mechatronics Lab Capabilities

<table>
<thead>
<tr>
<th>Capability</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement and Instrumentation Equipment</strong></td>
<td>Make a request to Technician. The service/ help is free to all ME taught courses.</td>
</tr>
<tr>
<td>• Oscilloscopes (analog and digital)</td>
<td></td>
</tr>
<tr>
<td>• Power Supplies</td>
<td></td>
</tr>
<tr>
<td>• Multimeters</td>
<td></td>
</tr>
<tr>
<td>• Function Generators</td>
<td></td>
</tr>
<tr>
<td>• PCs (for Mechatronics related work only)</td>
<td></td>
</tr>
<tr>
<td>• National Instrument DAQs.</td>
<td></td>
</tr>
<tr>
<td><strong>Attention</strong>: All HIGH VOLTAGE/ MAINS VOLTAGE based projects/ work must be discussed and approved/ supervised by the Technician (by appointment and during working hours only, typically 9am to 5pm)</td>
<td></td>
</tr>
<tr>
<td><strong>Manual hand Tools</strong></td>
<td></td>
</tr>
<tr>
<td>• Screwdrivers</td>
<td></td>
</tr>
<tr>
<td>• wire- strippers</td>
<td></td>
</tr>
<tr>
<td>• pliers</td>
<td></td>
</tr>
<tr>
<td>• cutters</td>
<td></td>
</tr>
<tr>
<td>• spanners</td>
<td></td>
</tr>
<tr>
<td>• etc.</td>
<td></td>
</tr>
<tr>
<td><strong>Attention</strong>: Available upon request during supervised hours. Items can be provided on longer term loans by a booking system. Individuals are held responsible for any losses or damage of items. Only “booked-out” items can be taken out from the Project’s room/ workshop.</td>
<td></td>
</tr>
<tr>
<td><strong>Project equipment &amp; consumables.</strong></td>
<td>Freely available to users.</td>
</tr>
<tr>
<td>• resistors</td>
<td></td>
</tr>
<tr>
<td>• capacitors</td>
<td></td>
</tr>
<tr>
<td>• transistors</td>
<td></td>
</tr>
<tr>
<td>• prototyping boards</td>
<td></td>
</tr>
<tr>
<td>• wire</td>
<td></td>
</tr>
<tr>
<td>• insulating tape</td>
<td></td>
</tr>
<tr>
<td>• etc.</td>
<td></td>
</tr>
<tr>
<td><strong>Cordless Drill</strong></td>
<td>Available on request to a technician.</td>
</tr>
<tr>
<td>A cordless drill is available for very light use, can only be used within the Project’s room.</td>
<td></td>
</tr>
<tr>
<td><strong>CNC PCB Router</strong></td>
<td>Submit a request to Technician.</td>
</tr>
<tr>
<td>For manufacturing prototype printed circuit boards (PCBs)</td>
<td></td>
</tr>
<tr>
<td>• LPKF S63</td>
<td>Students must provide the necessary computer files for the manufacture of the boards, preferred software is Eagle PCB Design (installed on a limited number of PCs in the Mechatronics Lab. Suitable materials are available in the ME Stores. Service is free to all ME taught courses*, and project work; there is a charged service for non-ME students.</td>
</tr>
<tr>
<td><strong>Soldering Facility</strong></td>
<td>Students must complete a short induction to satisfy Health and Safety.</td>
</tr>
<tr>
<td>For soldering PCBs or any and other soldering work</td>
<td></td>
</tr>
</tbody>
</table>

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* This includes ME2, ME3 and ME4, AME, IDE and GID enrolled students working on coursework projects.
Materials Testing Lab

The Materials Testing Laboratory, located in room 115, is used for scheduled laboratory classes in ME1 and ME2. It is also available for material testing in undergraduate projects in ME and ME4.

The Teaching Lab is only open during normal 8.30am to 4.15pm and requests for access should be made by appointment.

<table>
<thead>
<tr>
<th>Post</th>
<th>Holder</th>
<th>Email (@imperial.ac.uk)</th>
<th>Phone</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>MoM Teaching Technician</td>
<td>Ruth Brooker</td>
<td>r.brooker</td>
<td>57046</td>
<td>115</td>
</tr>
</tbody>
</table>

Materials Testing Lab Capabilities

<table>
<thead>
<tr>
<th>Capability</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polishing and Grinding</td>
<td>All users must have training from the Technician before using the grinders and polishers. After approval they are free for use during lab hours.</td>
</tr>
<tr>
<td>Mounting Press</td>
<td>All users must have training from the Technician before using the Mounting Press. After approval it is free for use during lab hours.</td>
</tr>
<tr>
<td>Accutom Saw</td>
<td>All users must have training from the Technician before using the saw. After approval it is free for use during lab hours.</td>
</tr>
<tr>
<td>Acid Etching</td>
<td>All users must have training from the Technician before performing any etching, the key for the acids cupboard must be collected from the technician for every session of etching and returned immediately after use.</td>
</tr>
<tr>
<td>Hardness Tester</td>
<td>All users must have training from the Technician before using the hardness tester. After approval it is free for use during lab hours.</td>
</tr>
<tr>
<td>Stereomicroscope</td>
<td>All users must have training from the Technician before using the stereomicroscope.</td>
</tr>
<tr>
<td>Instron Universal Testers</td>
<td>All users must have training from the Technician before using the Instrons. After approval the Instrons can be booked for each day’s use.</td>
</tr>
<tr>
<td>Scales</td>
<td>Available for anyone to use.</td>
</tr>
<tr>
<td>Capability</td>
<td>Constraints</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>30kg capability digital readout to 1g accuracy</td>
<td></td>
</tr>
<tr>
<td>Charpy Impact Tester</td>
<td>All users must have training from the Technician before using the Charpy Impact Tester.</td>
</tr>
<tr>
<td>Furnaces</td>
<td>Discussions about use of the furnaces should be held with the technician before use each time.</td>
</tr>
<tr>
<td>Fan and convention furnaces, Fan up to 750°C, conventional up to 1200°C</td>
<td></td>
</tr>
</tbody>
</table>

**Project work in research labs**

*College and departmental health and safety rules dictate that students on taught courses may only work in laboratories during technical staff hours — i.e. between 08:30–17:00, Monday to Friday, while the College is open.*

Even outside these hours, no-one is permitted to work alone unless the work has been declared (in writing) to be non-hazardous, and authorised by his or her supervisor and the laboratory manager — otherwise, a second person must be present.

⚠️ **Caution:** For some laboratories, ‘lone working’ permission is never given.
Chapter

4

Study

Topics:

- Teaching and learning methods
- Late or absent teaching staff
- Humanities and languages evening classes
- Student representation
- The Staff Student Committee
- Student surveys
- Studying abroad
- Professional Skills
- Coping with stress

The study techniques which brought you success in your school qualifications may not work so well at University. The Imperial Success Guide site offers excellent general advice on study skills for higher education.

Higher education is designed to give you lifelong skills for learning autonomously, taking responsibility for your own learning and assessment. Steady and effective study from the beginning is essential if you are to build a sure foundation for ME2 and beyond.

**Warning:** In your previous studies (e.g. for A-levels) you may have done virtually all your work near the end of the year. In higher education, this technique is extremely unlikely to work.

Related Links

*The Imperial Success Guide: everything you need to support the transition from school to university*
Teaching and learning methods

Several main methods of teaching and learning are used in undergraduate programmes. The mix varies widely between modules and from year to year and is specified in detail in the module description.

Lectures

For most modules, the knowledge and skills you will need to learn will be introduced and explained at a series of whole-class lectures. All the outline handouts you require will generally be provided, but you will need to annotate and build around them in the way which best supports your personal learning style.

Higher education cannot be achieved by memorising lecture notes. Mastering the necessary knowledge and skills will demand understanding them, so that if necessary you could explain them to others. This involves both learning alongside others, and reading alternative presentations of the same material by others who have already mastered it.

Some of the lectures given in theatres equipped with PanOpto are recorded and — after a day or so — can be viewed directly via the course Blackboard page or the general PanOpto page.

Many students find lecture videos a valuable resource for review and revision. However, a recording cannot possibly replace the shared learning experience of the live lecture, and cannot be relied on for completeness. Occasionally, video capture partially or completely fails. Any lecture recordings are provided only for personal use by registered Imperial College students, and only for educational purposes.

⚠️ Warning: Any redistribution (e.g. via social media), sharing (even by email), editing or re-use of a lecture video will be treated as misconduct and handled as a disciplinary matter under the Code of Student Discipline.

Related Links

Login to PanOpto video site
Guidelines on audio and video lecture recordings
Code of Student Discipline (E2)

Tutorials

Engineering is about solving problems. Each examined lecture course will be supported by sheets of tutorial problems for you to work on in your own time. Solving these problems reinforces the work of the lectures and keeping up to date with them should be one of your top priorities.

⚠️ Important: Make legible records of your own solutions and keep them organised. They will help you revise before exams and will be essential to show a tutor where you had got to, and how, when you got stuck.

Because getting stuck is a natural part of the learning process, timetabled tutorials are provided at which academic staff or graduate teaching assistants (GTAs) can ‘debug’ your solution and get you back on the road. Discussing your solution method with a tutor is both an effective learning activity and a good model for team work in real engineering projects.

⚠️ Important: ME1 and ME2 tutorials are an integral part of each course and you are expected to attend.

Lab exercises

You’ve chosen to study engineering, and will want to see things working. The main aim of lab classes is to make engineering principles and models real, but they will also give you material to exercise report-writing skills and to analyse, understand and present experimental data.

The proportion of individual, hands-on work will differ between subjects. Some some, lab exercises will be primarily demonstrations; for others, e.g. mechatronics, you or your group will be doing all the practical work yourself.
Late or absent teaching staff

If no lecturer or tutor arrives for a timetabled class, check your timetable to find out who should have been there, and use the teaching staff lists to contact them directly and/or by email and phone.

If this action fails to deliver, contact the UG Office.

Humanities and languages evening classes

The Centre for Co-curricular Studies offers evening classes in a broad selection of subjects outside science and technology. Fees are normally due, but the Department will normally reimburse students registered on the Year Abroad programme for courses in the language of their chosen exchange country.

Related Links

Information on evening classes at the Centre for Languages, Culture and Communication

Student representation

Each undergraduate cohort annually elects two representatives. These “Year Reps” serve a general mediating role with academic staff when issues arise and, if necessary, at the periodic meetings of the Student-Staff Committee.

Two Departmental Representatives (Dep Reps) manage the Year Reps and provide a communication channel to the Student Union’s Academic Affairs Officer. The Union manages the online process by which reps are nominated and elected.

For teaching staff to maintain both quality of delivery and pace of innovation, they need engaged and constructive feedback from students. If issues arise on either side, they can be most speedily resolved by direct contact between the Year Rep and the responsible member of staff involved.

If the issue cannot be resolved at this level, or its resolution could benefit from wider discussion, it can be raised at the Staff Student Committee.

Related Links

Information on Union Reps and how to become one
Union Reps for Mechanical Engineering

The Staff Student Committee

This departmental committee, which is chaired by a student, normally meets three times per session. It reports to the Courses Committee on academic, administrative and social matters relevant to all ME students on taught courses.

Any aspect of taught courses can be discussed at an SSC meeting, and all reps are expected to ensure that all students have the opportunity to get their views expressed at these meetings. The agenda is fixed in advance, although issues can be raised under ‘any other business’.

Undergraduates are represented by a departmental rep and both reps from each of the four years of the course. Since MSc students on Advanced Mechanical Engineering course share many of the same taught courses, their representative sits on the same committee.

The meeting minutes are posted on Blackboard.

Staff Student Committee members

The Committee is normally chaired by one of the Departmental Representatives.
Student surveys

Your feedback is important to this department, the College and Imperial College Union. Three College-wide surveys provide regular opportunities to provide it.

The two College-level surveys are:

UG SOLE lecturer/module survey

This survey, which runs at the end of the autumn and spring terms, is your chance to tell us your opinion of the modules you have attended and the lecturers who taught them.

Alongside exam and coursework results, SOLE (and especially the free-text comment boxes) provide our main source of information for managing course development.

⚠️ Important: When entering free text, please be absolutely specific (with names!) about who or what you are commenting on.

Student Experience Survey (SES)

Run at the same time as the autumn term UG SOLE lecturer/module survey is the Union’s Student Experience Survey (SES). This survey will cover your induction, welfare, pastoral and support services experience.

- Motivations for taking the programme,
• Depth of learning
• Organisation
• Dissertation and
• Professional development.

You will receive during spring term an email providing a link to the survey.

⚠ Important: Imperial surveys are absolutely anonymous. The more students that take part the more representative and useful the results, so please take a few minutes to give your views.

National Student Survey (NSS)

While in the final year of your programme, you will be invited to take part in the National Students Survey (NSS). NSS asks all final-year undergraduates to rate a range of elements related to their student experience such as:

• Academic support
• Learning resources and
• Assessment and feedback.

This nationwide survey compiles year-on-year comparative data for higher education institutions, with its results being made publicly available.

Related Links

Visit Unistats website to see Imperial’s National Student Survey results
Read examples of student survey response at Union website
Find out more about Registry surveys and see previous results
Email Registry Survey Support team

Studying abroad

We have exchange arrangements with some of the best technological universities in France, Germany, the Netherlands, Switzerland, Australia and the USA. If you are on the Mechanical Engineering with a Year Abroad programme, and your academic record and (if necessary) foreign language skills are good enough, you can spend your fourth year abroad.

Many studies have shown that ‘travel broadens the mind’ and deepens academic abilities not only in your chosen subject but also in linguistic and inter-cultural skills, self-reliance and self-awareness. Many employers are well aware of the benefits and value such a period abroad highly, enhancing employability and job prospects.

The Exchange Coordinator gives an open introductory lecture outlining the scheme.

You must bear in mind that to reach the required language level for certain placements, you will need to start a language course in year 1. Generally, the way you study and the rate you study at will need to match your individual case. For example, if you have a good A or AS level language and your sponsoring company is arranging for you to work in the relevant country during a long vacation, formal language classes here during term may not be necessary at all. However, if you have only GCSE level French or German you would be well advised to take one of the intensive language classes offered by the Humanities Department during term, and to work/travel abroad in the summer vacation(s).

⚠ Caution: It is important to be aware from the outset that places on exchange schemes are very limited, competition is fierce and academic selection criteria are exacting. Many students who are registered on the programme cannot ultimately be offered a place.

Studying abroad in this way is no soft option but it is a very rewarding experience, as those students who have done it confirm.

Related Links

The year abroad on page 109
The year abroad on page 109
Professional Skills

In addition to its own core technical knowledge and skills, every profession shares a common set of ‘transferable’ skills ranging from communication and teamwork to professional ethics. These are taught in a thread which runs throughout the core programme and has links to many teaching and learning activities.

Technical writing skills

ME1 Experimental Reporting Skills teaches the writing of a standard-pattern technical report — along with the recognition and treatment of experimental errors and uncertainty — through a lab-based case study involving risk and safety issues.

Oral presentation skills

ME2 Technical Presentation Skills teaches the basics of a Powerpoint-type presentation through individual preparation and delivery of a 10-minute talk on a theme chosen from a closed list.

Teamwork skills

You will begin to exercise teamwork skills with a ‘warm-up’ exercise before the ME1 programme even begins and will further exercise them during ME1 and ME2 Design and Manufacture. The underlying theory of group dynamics and organisations is treated in ME2 Management and Business for Engineers; students then tackle the main Design Make and Test Project in ME3.

Engineering Ethics

After ME1 Experimental Reporting Skills has introduced the ethical dimension of engineering through that of Scientific Ethics. You will then be faced in the ME3 DMT module with a half-day business game, delivered by Shell International, presenting corporate social responsibility issues in the extraction of crude oil in a fictional foreign state.

Coping with stress

Stress — an adverse reaction to excessive pressure from work and your environment — affects many of us, staff included. Coping with it effectively is an essential life skill, and learning to do so will be a valuable part of your education. The College offers extensive help.

Support is on hand at a number of levels.

The workload at Imperial is high, and is likely to be a major factor in how you feel — especially, of course, as exams approach. If you are struggling, talk to your personal tutor first. Both the Academic Tutor and the Senior Tutor can help you to untangle the work and personal factors on you.

Remember: Don’t leave things too late! Seek help before things get on top of you: there’s nothing to be ashamed of in doing so.

Exams, of course, are stress concentration factor number one. The Health Centre and Student Councelling Service offer a wide range of resources to manage exam stress and anxiety, including even general guidance on revision and study techniques. It also runs Exam Stress Workshops from November onwards, allocating places on a first-come, first-served basis.
Chapter 5

Assessment and feedback

Topics:

• Coursework
• Plagiarism
• Feedback to students
• Grades and numerical marks for exams and coursework
• Moderation
• The Dean’s list
• Student prizes and awards

The qualifications you are studying for are widely envied, and widely respected by employers. We work hard to maintain the fairness, accuracy and rigour of the assessment system which underpins them and you must work hard to earn them — but there is no set ‘pass rate’ and every student is capable of getting a good degree.
Coursework

The purpose of coursework is to reinforce lecture material and to develop your skills in laboratory work, computing, design etc. Most coursework is assessed, and contributes towards your degree.

Coursework exercises include lab reports, project reports, computing exercises and progress tests which are completed and handed in during the year. Each piece of coursework will have a specified submission date, set in advance and published in the module description. This submission date is a hard deadline: work submitted after that date may be marked to provide feedback, but you will not be given any credit for it.

⚠️ Warning: Being awarded zero marks for a major coursework item due to late submission could lead, in the worst case, to a lower degree classification or even total failure.

For many assignments you will need to submit an item of individually authored work, which will be assessed and will count towards your degree. You will be required to declare sole authorship of every such item, and plagiarism is taken extremely seriously.

⚠️ Warning: Do not under any circumstances use any copied or pirated coursework, or allow your work to be copied by others.

The College treats such cheating on coursework exercises exactly the same way as cheating in examinations. If any student is suspected of cheating, of attempting to cheat or of assisting someone else to cheat, the facts will be reported to the College. If found to have done so, s/he may in consequence be disqualified from all future examinations of the Imperial College.

Length of coursework submissions

The Department has imposed limits on the submission of coursework. The limit will be clearly stated on each coursework and will take the form of a word limit or a page limit, chosen by the course leader.

Reasons for limiting the length of coursework submissions

Limits have been imposed on the length of coursework submissions to...

• encourage clarity and conciseness in writing.
• ensure fairness between all students completing the same piece of coursework.
• manage overall student workload.
• facilitate the provision of quality and consistency of feedback.

Information provided with the assignment

For each piece of coursework the following information will be issued with the assignment details:

Either:

A word count limit

or,

A page limit (using a minimum of 12 point sans serif font (e.g. Arial), 1.5 line spacing and 2.54cm for all margins).

⚠️ Attention: In all cases, what is included in the limit will be stated (everything except references/bibliography unless stated otherwise).

⚠️ Caution: Coursework assignments may have different limits for different sections (e.g. an abstract written on a separate page). This will be clearly stated in the coursework description.
Information to be provided by the student when submitting

On the title (first) page of any submitted coursework the page length or word count must be clearly stated (together with the limit that applies). All pages should be numbered. If requested a student must provide the coursework in an electronic format which enables the word count to be checked.

Penalties

_A marker will read and provide a mark for work submitted to, and not beyond, the limit set._

If a marker considers that the word limit has been breached, but cannot verify this from the submitted work, the UG office will be asked to contact the student to provide an electronic copy which can easily be checked.

**Attention:** Failure to provide an electronic copy if requested for checking of word count will result in the mark given being capped at the pass mark.

**Caution:** Misrepresentation of word count/page limit will result in the mark given being capped at the pass mark and possible investigation for cheating.

ME3 Project Report Limits

_Both ME3 projects are subject to submission length limits._

*Individual Literature Research Project Report:* 8000 word limit (not including references), which is approx. 20 pages, 4 ECTS (counts for 100% of marks), individual.

*DMT Final Report:* Page max 80; 40-60, ECTS 14 (counts for approx. 50% of marks), group (3-5).

ME4 Individual Project Report Limit

_The ME4 individual project is subject to a submission length limit._

*Individual Project Report:* Page max 50; 20-40 fine, ECTS 14 (counts for 60% of marks), individual.

Plagiarism

_Plagiarism is the presentation of another person’s thoughts, words or images and diagrams as though they were your own. It is extremely important to understand exactly what this means before you submit your first item of work for assessment, because the penalties for plagiarism are very severe._

When you graduate from this Department with an MEng degree you will be a few steps away from Chartered status in a profession. We are trusted to ensure that you have not only the knowledge and skills but also the ethical standards which you need to deserve that status. For this reason, and because the internet offers such free access to information, the College treats plagiarism and cheating offences very seriously indeed.

Within the first week of term you will hear a lecture on plagiarism by a representative of the College Library. Attendance at this lecture is compulsory.

The department uses the plagiarism detection site TurnItIn both to filter electronic submissions of coursework and to check electronic duplicates of printed submissions. If any significant level of plagiarism is detected in any submission, the best possible outcome will be a mark of zero.

Related Links

.Library information on plagiarism
_plagiarism.org information site, provided by Turnitin
_TurnItIn website
_Policy and procedures on plagiarism and cheating
.Library information on plagiarism
_plagiarism.org information site, provided by Turnitin
_TurnItIn website
_Policy and procedures on plagiarism and cheating_
Feedback to students

The principal objectives of setting coursework are to assess your progress and to help you improve it. Unless your work could hardly be better (or is too poor to deserve the effort), you can expect explicit and timely guidance from the marker on areas to work on — and you should aim to act on it.

The form of feedback will vary widely, depending on the nature of the submission. A common form is an itemised list of criteria with a tick-box grade for each, along with some written indication of the reason for credit being lost.

Every effort is made to return marked assessments as quickly as possible, and certainly before the feedback is needed to guide a subsequent submission.

Note: Unless otherwise specified, you should expect marked coursework to be returned within 14 days of the submission deadline: if this hasn't happened speak to your year rep, who can make enquiries on your behalf.

Grades and numerical marks for exams and coursework

Every department at Imperial assesses undergraduate examinations and coursework submissions on the same scale of correspondence between percentage mark, letter grade A to E and degree honours class.

All grades and numerical marks issued during the academic year are provisional: they are issued to provide feedback and to provide an indication of progress. Final marks are awarded only after work has been moderated. Ultimately these marks, appropriately weighted, will be used (perhaps after further discussion and moderation at a meeting of the internal and external examiners) to determine which degree class is awarded — so there is therefore also a correspondence between mark and degree class.

These correspondences are shown in the Table below.

<table>
<thead>
<tr>
<th>Grade letter</th>
<th>...corresponds to mark:</th>
<th>...and to degree class:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A*</td>
<td>% ≥85</td>
<td>First class honours</td>
</tr>
<tr>
<td>A</td>
<td>70 ≤ % &lt; 85</td>
<td>Upper second class honours</td>
</tr>
<tr>
<td>B</td>
<td>60 ≤ % &lt; 70</td>
<td>Lower second class honours</td>
</tr>
<tr>
<td>C</td>
<td>50 ≤ % &lt; 60</td>
<td>Third class honours</td>
</tr>
<tr>
<td>D</td>
<td>40 ≤ % &lt; 50</td>
<td>Not up to honours level</td>
</tr>
<tr>
<td>E</td>
<td>&lt;40</td>
<td></td>
</tr>
</tbody>
</table>

Moderation

ME3 DMT, ME3 Literature Research and ME4 Individual project reports contribute significantly to the final degree mark. All are independently double marked, and a special procedure is used to reconcile differences between the first and second markers.

Because the projects which are subject to second marking are so diverse, independent assessors sometimes award significantly different marks. This is especially true of the individual project final report, which also serves to assess how well the student has explained his/her work to someone who can be expected to be knowledgeable about the general field but not about the particular topic.

The moderation process is intended to ensure fair and accurate marking and to resolve discrepancies in project report marks between the supervisor and the independent marker.
1. If the discrepancy in marks is less than 10 percentage points, the two marks are averaged and moderation is unnecessary.

2. Where the discrepancy is equal to, or greater than 10 percentage points, the supervisor and the independent marker are invited to:
   - Discuss the discrepancy; and
   - Agree a single mark and notify the course leader of it by email. For the record, specific justifications must be recorded for the change.

3. If no single mark can be agreed by a prescribed date, the student’s report and copies of all marksheets are sent to a Moderator, who will recommend a mark to the Moderation Panel.

4. A Moderation Panel is formed, considers, and decides a final mark for:
   a. These disputed cases;
   b. Reports by students identified as being potentially on degree class borderlines; and
   c. Reports originally given unusually high or low marks.

   The panel also arbitrates on marks requested to compensate for ‘Special Difficulties’. Individual cases are carefully chosen to be considered by ‘disinterested parties’ excluding — for example — the student’s personal tutor.

5. After the panel meeting the course leader forwards the recommended project marks, and minutes of the panel meeting, to the Examination Officer.

The Dean’s list

Because Imperial graduates compete in an international market, Imperial has matched the USA practice of recognising the top 10% of A-graded students in each year on a ‘Dean’s list’ — and marking this achievement on the transcript of graduating students.

The conditions are:

1. Achieving an overall mark of 70% or greater during the previous 12 months, and
2. Being placed within the top 10% (rounded up) of students in their cohort — e.g., of their year and programme.

Student prizes and awards

Various bequests, donors and sponsors (including the Department itself) have funded annual prizes to students for special achievement. These are awarded at an informal ceremony in the Department, to which parents are invited, on Graduation Day.

ME1 student prizes and awards

Various bequests, donors and sponsors (including the Department itself) have funded annual prizes to students for special achievement. These are awarded at an informal ceremony in the Department, to which parents are invited, on Graduation Day.

Table 2: Annual awards offered

<table>
<thead>
<tr>
<th>Award</th>
<th>Citation and value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frank Turner Wilson First Year Prize</td>
<td>Three prizes, each up to the value of £500, for annual award to the most outstanding student in the first year of the undergraduate course in Mechanical Engineering. The awards to take into account academic achievement, practical abilities and contribution to departmental activities.</td>
<td>ME1</td>
</tr>
</tbody>
</table>
ME2 student prizes and awards

Various bequests, donors and sponsors (including the Department itself) have funded annual prizes to students for special achievement. These are awarded at an informal ceremony in the Department, to which parents are invited, on Graduation Day.

Table 3: Annual awards offered

<table>
<thead>
<tr>
<th>Award</th>
<th>Citation and value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>C F Rae Griffin Book Prize</td>
<td>For annual award to a second year undergraduate student in the Department of Mechanical Engineering for excellence in practical coursework. In making recommendations, Departments are asked to bear in mind that the objective of the prize is to recognise excellence in the practical coursework — i.e. a real flair for practical engineering.</td>
<td>ME2</td>
</tr>
<tr>
<td>Frank Turner Wilson Second Year Prize</td>
<td>Three prizes, each up to the value of £500, for annual award to the most outstanding student in the second year of the undergraduate course in Mechanical Engineering. The awards to take into account academic achievement, practical abilities and contribution to departmental activities.</td>
<td>ME2</td>
</tr>
<tr>
<td>Frederic Barnes Waldron Award of the Institution of Mechanical Engineers</td>
<td>For annual award to the best overall student in Mechanical Engineering who has completed at least two years of an accredited degree programme and who is an affiliate member of the Institution of Mechanical Engineering. Value £200.</td>
<td>ME2</td>
</tr>
<tr>
<td>National Power Prize in Mechanical Engineering</td>
<td>For annual award to the best overall student at the end of the second year. Value £100.</td>
<td>ME2</td>
</tr>
<tr>
<td>Neil Watson Memorial Prize</td>
<td>For annual award to up to four undergraduate students in the second year of any course in Mechanical Engineering for excellence in oral communication of technical information. Value £100 each.</td>
<td>ME2</td>
</tr>
<tr>
<td>Sir Bruce White Laboratory Prize in Mechanical Engineering</td>
<td>For annual award to the undergraduate student in Mechanical Engineering with the most meritorious performance on the laboratory course in the second year. Value £100.</td>
<td>ME2</td>
</tr>
<tr>
<td>Improvers Prize</td>
<td>A Departmental award to the undergraduate student in Mechanical Engineering who has shown greatest improvement in the second year. Value £50.</td>
<td>ME2</td>
</tr>
</tbody>
</table>

ME3 student prizes and awards

Various bequests, donors and sponsors (including the Department itself) have funded annual prizes to students for special achievement. These are awarded at an informal ceremony in the Department, to which parents are invited, on Graduation Day.
### Table 4: Annual awards offered

<table>
<thead>
<tr>
<th>Award</th>
<th>Citation and value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frank Turner Wilson Third Year Prize</td>
<td>Three prizes, each up to the value of £500, for annual award to the most outstanding student in the third year of the undergraduate course in Mechanical Engineering. The awards to take into account academic achievement, practical abilities and contribution to departmental activities.</td>
<td>ME3</td>
</tr>
<tr>
<td>Governors’ BEng Prize in Mechanical Engineering</td>
<td>For annual award to the student of greatest merit in the final undergraduate year of the BEng course. Value £100.</td>
<td>ME3</td>
</tr>
<tr>
<td>Renishaw Prize</td>
<td>For annual award to the undergraduate student on the four year course in Mechanical Engineering who produces the best project during the third year of the course. Value £100 each.</td>
<td>ME3: normally one prize awarded to each student in best DMT project group</td>
</tr>
<tr>
<td>Mechanical Engineering Student Centenary Prize</td>
<td>For annual award to the undergraduate student who is adjudged to have submitted the most meritorious work in the third or final year. Value £200.</td>
<td>ME3–4</td>
</tr>
</tbody>
</table>

### ME4 student prizes and awards

Various bequests, donors and sponsors (including the Department itself) have funded annual prizes to students for special achievement. These are awarded at an informal ceremony in the Department, to which parents are invited, on Graduation Day.

### Table 5: Annual awards offered

<table>
<thead>
<tr>
<th>Award</th>
<th>Citation and value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering Student Centenary Prize</td>
<td>For annual award to the undergraduate student who is adjudged to have submitted the most meritorious work in the third or final year. Value £200.</td>
<td>ME3–4</td>
</tr>
<tr>
<td>Bramwell Medal</td>
<td>For annual award to the student at the top of the Final year class list in Mechanical Engineering. Medal.</td>
<td>ME4</td>
</tr>
<tr>
<td>Governors’ MEng Prize in Mechanical Engineering</td>
<td>For annual award to the student of greatest merit in the final undergraduate year of the MEng course. Value £100.</td>
<td>ME4</td>
</tr>
<tr>
<td>Henry Ford II Scholar Award in Mechanical Engineering</td>
<td>For annual award to the student with the best academic record based on the final first degree examinations in Mechanical Engineering; £1000 to be awarded to the student at the end of his/her degree course, and the remaining £1500 to be made available to the department for allocation to the same student for an approved academic purpose.</td>
<td>ME4</td>
</tr>
<tr>
<td>Institution of Mechanical Engineers Prize</td>
<td>For annual award to the student in the final year of an accredited degree course who completes an outstanding research, development or design project in Mechanical Engineering. Value £100.</td>
<td>ME4</td>
</tr>
</tbody>
</table>
The qualifications you are studying for are widely envied, and widely respected by employers. We work hard to maintain the fairness, accuracy and rigour of the assessment system which underpins them and you must work hard to earn them — but there is no set ‘pass rate’ and every student is capable of getting a good degree.
Progression

Mechanical Engineering MEng programmes consist of four successive, one-year parts. You must pass the assessments for each of them in order to progress to the next.

The four parts of the programme, and the cohorts of students registered on them, are referred to as ME1 to ME4 (you will also still hear some staff use the older terms ‘1M’–‘4M’). Your progress will be assessed each year by a mixture of examinations and coursework. The ME1 result is **qualifying-only**, determining only whether you proceed or not. The ME2, ME3 and ME4 marks contribute 1/4, 3/8 and 3/8 of the total for the degree.

Full details are specified in the **Scheme for the Award of Honours**; this scheme changes slightly from year to year, but the version which applies to you is the one which was in force the year you initially registered.

When all assessments for the year have been marked and the marks collated, a series of meetings — collectively known as the Examiners’ Meeting — reviews the results and allocates an overall pass code to each student. For Parts 2-4 these results are passed to Registry, which records them for release to students in early July.

The large majority of students pass first time. Candidates who do not satisfy the examiners, either in the summer examinations or after Supplementary Qualifying Tests, will be asked to withdraw from the College permanently.

Related Links

- **Schemes for the award of Honours** on page 114
- **Supplementary qualifying tests (SQTs)** on page 64

Revision for exams

Most examined modules provide a number of past exam papers, with answers, on Blackboard. These provide a useful guide for paper and question style, but cannot be relied on to guide your revision. **Defining what you must be able to do in an exam is the job of the intended learning outcomes given in the module description.**

Although students are generally well practiced in exams and most already have their own strategies, the Imperial Success Guide site provides several useful tips on revision. Two are especially important:

1. Relying heavily on past papers is a bad idea: your goal must be **deep learning** to underpin future learning and to avoid being thrown by a question posed from a fresh angle.

2. Don’t just try to learn the material provided by heart: engage with it and re-shape it in a way which makes sense to you as an individual.

**Exam stress** is an intrinsic part of assessment, and learning to cope with it is an intrinsic part of the learning experience. Even if you never sit another exam after leaving Imperial, professional life will bring you many examination-like experiences. Excellent advice on coping with exam stress — and further advice on revision strategies — is provided on the College Health Centre website.

Related Links

- **The Imperial Success Guide: everything you need to support the transition from school to university**

Revising for combined subjects in ME1-2

In ME1 and ME2, related subjects in Thermofluids and in Solid Mechanics are grouped together. However, you cannot “write off” any examination against another in its group for which you expect a higher mark. You must study, and revise, to master **every** subject.
The knowledge and skills learned in ME1 and ME2 form the foundations of your education as an engineer. They span a range of subjects, but some are clustered in groups — Solid Mechanics and Thermofluids — which share fundamental concepts.

Our published Schemes for the Award of Honours specify that in order to progress from ME1 into ME2 and from ME2 into ME3, you must satisfy the examiners in all examinations. You can recover from narrow failure in one examination by further study over summer and a successful Supplementary Qualifying Test (SQT or re-sit) in September.

In both ME1 and ME2, some of these core subjects are aggregated. The idea of an aggregated examination pass is that if you achieve marginally below 40% in (for example) ME1 Stress Analysis you can still pass the ME1 Solid Mechanics examination overall and progress as of right if your Mechanics mark sufficiently exceeds 40%. This aggregation recognises that the individual subjects share many fundamental concepts — as you will remember from the first few weeks.

However, because the individual examinations assess core subjects, the Examining Board will not allow you to progress automatically if you demonstrate so little mastery of one (e.g. Stress Analysis or Mechanics) that they consider you to be at high risk of failing the following year. The minimum required degree of mastery in individual subject examinations is assessed by the Examining Board on a year by year basis.

⚠️ **Warning:** Don’t abandon any Solid Mechanics or Thermofluids subject in favour of a related subject which in which you excel! In ME1 and ME2, you must study to pass every exam.

**Related Links**

*Schemes for the award of Honours* on page 114

**Coping with stress**

*Stress — an adverse reaction to excessive pressure from work and your environment — affects many of us, staff included. Coping with it effectively is an essential life skill, and learning to do so will be a valuable part of your education. The College offers extensive help.*

Support is on hand at a number of levels.

The workload at Imperial is high, and is likely to be a major factor in how you feel — especially, of course, as exams approach. If you are struggling, talk to your personal tutor first. Both the Academic Tutor and the Senior Tutor can help you to untangle the work and personal factors on you.

⚠️ **Remember:** Don’t leave things too late! Seek help before things get on top of you: there’s nothing to be ashamed of in doing so.

Exams, of course, are stress concentration factor number one. The Health Centre and Student Counselling Service offer a wide range of resources to manage exam stress and anxiety, including even general guidance on revision and study techniques. It also runs Exam Stress Workshops from November onwards, allocating places on a first-come, first-served basis.

**Examinations**

*Most written examinations take place early in the summer term. There is no set ‘failure rate’ and therefore no reason why every candidate should not pass at the first attempt.*

**How papers are written**

Exam papers are written and checked, both internally and externally, by a process which begins several months before you sit them. Each paper is first independently solved (usually by the Associate Lecturer), then reviewed ‘cold’ by a small internal committee of academics in the same subject area. It is then sent out for review by one of the two External Examiners. These are highly-regarded academics from
outside Imperial, appointed by the University for a period of four years, who monitor the remainder of the 
assessment process — culminating in a visit for the final Examiners’ Meeting.

Sitting the exam

Most examinations take place in the double-glazed and air-conditioned drawing offices on levels 6–7.

Important: You must carry your College identity card, so that your CID number can be noted and 
your identity checked.

You will be able to take in pens, pencils, erasers and rulers but, for a Closed Book examination, nothing 
else. You will be provided, if necessary, with:

1. The Handbook of Data and Formulae edition issued to you: you cannot use your own copy, but you 
should learn your way around it
2. A basic scientific calculator — you will not be allowed to take your own, or any peripheral equipment. 
The Casio FX–83ES provided has all the usual scientific functions. If you need to familiarise yourself 
with this model, the UG Office will issue one on overnight loan (don’t leave this until the last-minute 
rush).

College examination conditions and rules — e.g. the absolute rule against speaking to neighbours — 
are stated in the Instructions to candidates for examinations and are similar to those for any other public 
exams.

Important: The instructions on the front page of the answer book — fill in a list of questions 
attempted, start each question on a new page etc. — are there for your protection. Read and obey 
them!

Choice of questions

Because core courses lay the foundations for an engineering education, they do not offer a choice of 
questions. Elective modules usually do. If you answer more questions than you were asked to, only those 
most highly marked within the rules will count towards the total.

Related Links

Registry instructions to exam candidates

Open-book exams

Some examinations, especially at M level, are ‘open-book’. To encourage appropriate preparation, the 
quantity of material which candidates can take into the exam room is limited.

The rubric for each examination papers is reproduced in the corresponding Module Descriptor and for 
some modules it contains the phrase This is an OPEN BOOK Examination. For these exams you can take 
to the examination room, in addition to those items permitted for a Closed Book exam, the following:

• One A4 sized ring binder, no more than 75 mm thick and containing written and/or printed material only, 
and
• A maximum of two textbooks.

Mitigating circumstances for assessment

Circumstances beyond your control may prevent you from submitting coursework on time, or may seriously 
affect your performance in an exam. If you want us to take these circumstances into account, you must let 
us know the details as soon as possible.

Download and complete the form in full and return it to the UG Office. Please give as many details as 
possible and provide evidence where possible: College policy requires that any details you provide remain 
confidential as far as possible.

Important: For minor items of coursework, submit only Appendix 2 of the form: for these, no 
medical certification is required.
The College Health Centre can certify illness only for absence from College lasting more than one week, or absence from an Examination.

Submit the form as soon as you can.

⚠️ Warning: To be considered, the Mitigating Circumstances form must be received within 5 working days of the relevant examination or coursework submission date.

Related Links

Mitigating Circumstances form (docx)
Exams and religious obligations (pdf)

Examination feedback

As soon as you submit an exam script for marking, it becomes the property of the College and you renounce any right to access it: in fact, allowing you such access would contravene the Data Protection Act. Arrangements can be made (on payment of a fee) to access any markers’ comments, but more efficient ways have been devised to provide appropriate feedback.

Most students are well practised at written examinations, and get the results they expect. Sometimes this is not the case and — even more rarely — the surprise is an unwelcome one.

⚠️ Important: There is no automatic right of appeal against the marks awarded at examination. Students may only appeal against exam results on the grounds of administrative or clerical error and papers will not be remarked.

The fear most commonly expressed by students is that a question, a page or an entire answer book has been overlooked. Because the nature of written scripts makes this possibility a real one, it has been virtually eliminated by straightforward, systematic checking procedures.

Another common concern, where a student accepts that s/he has arrived at the wrong answer, is the attribution of ‘method marks’. Awarding marks for intermediate results is expected: a marking scheme which does so makes marking a much easier task. Each paper is marked by two independent examiners, and the first is expected to alert the second that the student is proceeding correctly after an earlier error, by means of a comment on the script such as “Follows”.

Students have the right (on payment of a fee) under the Data Protection Act to sight of any such written comments or annotations. Request must be made to the College Secretariat, with payment of a fee, and annotations will then be transcribed to a separate document for access under carefully supervised conditions.

Since this method offers no real benefit, each department has pursued an alternative feedback method which suits its subject. Our Examination Feedback document has been required for each examined course for many years and is now published. It provides a statistical breakdown of the response rate, average marks and standard deviations for each question and comments, for future examiners, on question effectiveness and student performance.

Grades and numerical marks for exams and coursework

Every department at Imperial assesses undergraduate examinations and coursework submissions on the same scale of correspondence between percentage mark, letter grade A to E and degree honours class.

All grades and numerical marks issued during the academic year are provisional: they are issued to provide feedback and to provide an indication of progress. Final marks are awarded only after work has been moderated. Ultimately these marks, appropriately weighted, will be used (perhaps after further discussion and moderation at a meeting of the internal and external examiners) to determine which degree class is awarded — so there is therefore also a correspondence between mark and degree class.

These correspondences are shown the Table below.
Examinations and progression

<table>
<thead>
<tr>
<th>Grade letter</th>
<th>...corresponds to mark:</th>
<th>...and to degree class:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A*</td>
<td>% ≥85</td>
<td>First class honours</td>
</tr>
<tr>
<td>A</td>
<td>70 ≤ % &lt; 85</td>
<td>Upper second class honours</td>
</tr>
<tr>
<td>B</td>
<td>60 ≤ % &lt; 70</td>
<td>Lower second class honours</td>
</tr>
<tr>
<td>C</td>
<td>50 ≤ % &lt; 60</td>
<td>Third class honours</td>
</tr>
<tr>
<td>D</td>
<td>40 ≤ % &lt; 50</td>
<td>Not up to honours level</td>
</tr>
<tr>
<td>E</td>
<td>&lt;40</td>
<td></td>
</tr>
</tbody>
</table>

Table 6: Key dates for the publication of examination results

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQT/resit decisions emailed</td>
<td>Friday, 1 July, 2016</td>
<td>—</td>
</tr>
<tr>
<td>SQT/resit exam week begins</td>
<td>Tuesday, 30 August, 2016</td>
<td>—</td>
</tr>
</tbody>
</table>

If you are a sponsored student and need your exam results sent to your sponsor, please submit your sponsorship details by the end of Term Week 35 by visiting this site by clicking respond to this survey.

1. If you will be required to re-take the year or to sit one or more papers in September, you will be informed by email. If you have **not** been so notified by the end of the working day you can assume that you have passed.
   The timetable for re-sits and SQTs will be made available during July.

2. Overall result grades will be posted on Blackboard (in the UG Course Information section) and, by CID number, on the notice board outside the UG office.

3. Those who have passed the year will **not** receive a letter of confirmation, but detailed course marks will be released via Student e-Service by the end of July.

Supplementary qualifying tests (SQTs)

If you pass coursework but marginally fail a qualifying exam, you may be offered an SQT in that subject. If successful you proceed directly into the next year of the course. However the ‘pass’ requirements for an SQT are higher than for the main exam, and the marks carried forward may be capped.

Your exam result may be classed as **deferred**, meaning that your summer exam results alone did not convince the examiners that you were ready to progress to the next part of the programme. The most common reason is a marginal fail in one subject. In this case you will be offered the chance to sit a Supplementary Qualifying Test — in effect, a second examination — in September.

**Note:** SQTs must be taken at Imperial College London: the College cannot make arrangements for them to be taken abroad.

You must use this opportunity to study the subject intensively over summer.

**Attention:** Because some students take the September paper as their main examination the course syllabus — and all teaching materials made available to support it, including past papers — remain frozen until it has run.

Getting your results

After the Final Examiners’ Meeting, results for the session are made available — first as grades and later, via Registry, as authorised percentages.

Table 6: Key dates for the publication of examination results
Marks gained at SQTs are not added to your total for the year unless your examination aggregate was below 40% — in which case only sufficient marks are added to bring your examination aggregate to precisely 40%.

In ME3, SQTs are offered to MEng students only in core subjects, and in the final year of your programme they are not offered at all.

Re-sitting the year

If you fail to progress from any year of the programme and have to repeat it, you will be required to withdraw either (depending on the conditions) until summer term begins, or until the next set of year-end exams.

Although all of your coursework marks are carried forward from the year you failed, re-sitting end-of-year exams is a major challenge. Since you can only do this once, you must succeed — and many do. It is departmental policy to support you in any way we can as long as our efforts do not disadvantage students who are ‘in attendance’.

Important: As soon as you have received definitive examination results and made outline plans for the year ahead, you must discuss study/revision plans with the Senior Tutor, the Academic Tutor and your Personal Tutor.

During the following session, you will have access to:

1. Current material on Blackboard, including newly posted material
2. The Senior Tutor, Academic Tutor and Personal Tutor for advice
3. The UG Office for course administration queries.

With the explicit agreement of the Senior Tutor and/or Academic Tutor, you may be permitted:

1. Attendance at a reasonable number of lectures — this will depend on the total number of re-sitting students, their demand and the size of the timetabled lecture theatre
2. Reasonable access to computer rooms — this will depend on the total number of re-sitting students, their demand and resource availability.

You will not normally be allowed access to:

1. Coursework elements, e.g. laboratory classes or workshop courses
2. Coursework based module classes, e.g. Computing
3. Regularly timetabled tutorials.

The Dean’s list

Because Imperial graduates compete in an international market, Imperial has matched the USA practice of recognising the top 10% of A-graded students in each year on a ‘Dean’s list’ — and marking this achievement on the transcript of graduating students.

The conditions are:

1. Achieving an overall mark of 70% or greater during the previous 12 months, and
2. Being placed within the top 10% (rounded up) of students in their cohort — e.g., of their year and programme.
Chapter 7

ME1 course information

Topics:

- The 1st Year Organiser
- Structure of the ME1-2 programme
- Key dates and attendance in ME1
- Managing your time and workload
- Progress tests
- Clinic tutorials
- Books
- Foreign language classes
- Imperial Horizons
- ME1 coursework marks distribution
- Mapping of ME1 modules onto ECTS elements
- ME1 student prizes and awards
- The Dean’s list

The first two years of your programme lay the foundations for your training as a professional engineer.
Structure of the ME1-2 programme

The programme consists of a number of self-contained modules on different subjects, most of which run all year and are examined during summer term.

The structure of the first-year course is shown in Table 7: ME1-2 modules on page 67. Most modules run through the entire academic year and will be examined in May. Each will consist of a mixture of lectures and tutorials, a progress test and perhaps laboratory, design and/or project work.

**Table 7: ME1-2 modules**

<table>
<thead>
<tr>
<th>ME1 module</th>
<th>ME2 module</th>
<th>Subject group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Reporting Skills</td>
<td>Technical Presentation Skills</td>
<td>Design and Projects</td>
</tr>
<tr>
<td>Management and Business for Engineers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and Manufacture</td>
<td>Design and Manufacture</td>
<td>Design and Projects</td>
</tr>
<tr>
<td>Mechatronics</td>
<td>Mechatronics</td>
<td>Control</td>
</tr>
<tr>
<td>Dynamics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanics</td>
<td>Stress Analysis</td>
<td>Solid Mechanics</td>
</tr>
<tr>
<td>Stress Analysis</td>
<td>Stress Analysis</td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>Materials</td>
<td></td>
</tr>
<tr>
<td>Thermodynamics</td>
<td>Thermodynamics</td>
<td>Thermofluids</td>
</tr>
<tr>
<td>Heat Transfer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluid Mechanics</td>
<td>Fluid Mechanics</td>
<td></td>
</tr>
<tr>
<td>Computing</td>
<td>Computing</td>
<td>Maths and Computing</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Mathematics</td>
<td></td>
</tr>
</tbody>
</table>
A detailed module descriptor for each of these modules can be found both on the web and on Blackboard — where course materials are also available.

Key dates and attendance in ME1

The College has both a duty of care towards its students, and regulations to ensure that they follow the prescribed programme of studies. For these and other reasons there are a number of points during the year at which your absence will be reported to the Senior Tutor.

ME1

Attendance is monitored at:

- All study group tutorials
- Weekly personal tutorials
- Lab sessions
- Workshop assignments.

All coursework submissions are registered.

Table 8: Key dates this session: ME

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn term begins</td>
<td>Monday, 5 October, 2015</td>
<td></td>
</tr>
<tr>
<td>Autumn term ends</td>
<td>Friday, 18 December, 2015</td>
<td></td>
</tr>
<tr>
<td>Spring term begins</td>
<td>Saturday, 9 January, 2016</td>
<td></td>
</tr>
<tr>
<td>Spring term ends</td>
<td>Wednesday, 23 March, 2016</td>
<td></td>
</tr>
<tr>
<td>Summer term begins</td>
<td>Saturday, 23 April, 2016</td>
<td></td>
</tr>
<tr>
<td>ME1-2 exams begin</td>
<td>Monday, 16 May, 2016</td>
<td></td>
</tr>
<tr>
<td>ME1-2 exams end</td>
<td>Friday, 27 May, 2016</td>
<td></td>
</tr>
<tr>
<td>Workshop course 1</td>
<td>Monday, 6 June, 2016</td>
<td></td>
</tr>
<tr>
<td>Workshop course 2</td>
<td>Thursday, 9 June, 2016</td>
<td></td>
</tr>
<tr>
<td>Workshop course 3</td>
<td>Tuesday, 14 June, 2016</td>
<td></td>
</tr>
<tr>
<td>Workshop course 4</td>
<td>Friday, 17 June, 2016</td>
<td></td>
</tr>
<tr>
<td>Workshop course 5</td>
<td>Wednesday, 22 June, 2016</td>
<td></td>
</tr>
<tr>
<td>Summer term ends</td>
<td>Friday, 24 June, 2016</td>
<td></td>
</tr>
</tbody>
</table>

Attention: For all coursework submission deadlines, key dates and late-breaking news associated with specific modules, please check the calendar on the corresponding Blackboard page.

Caution: You are required to attend College until the end of session because the External Examiners may wish to interview you during the last week. You should therefore avoid any commitment — other than those forming part of the course — which could prevent you attending College during term-time.

Related Links

Term dates for next two years
Managing your time and workload

One reason why engineering graduates are highly sought-after outside the profession is that an engineering education provides excellent training for self-organisation, time management and team working. Like any form of intensive training, developing these skills will stretch you — especially during the first two years.

The Imperial Success Guide site provides excellent general advice on dividing your time between work and leisure, and finding an overall work/life balance. Within the course workload you will often find yourself having to time-share and multi-task, perhaps balancing time and effort between coursework submissions while keeping up with lecture courses.

This is how professional life is, and learning these skills through practice will give you a competitive advantage.

Tip: Reflecting on and recounting the workload management challenges you met and overcame is one of the subjects which employment interviewers will find much more interesting than (for example) the marks you gained in Maths.

1. The description for each module (posted at the head of the Blackboard page) shows an ECTS rating. Multiply this by 25 to get a realistic estimate, in hours, of the total time you should spend on the module.

2. An academic year is equivalent to 60 ECTS. About 1500 hours of work should be enough to progress from one year of the programme to the next. This works out to about 50h per term week, but some term time hours cannot be used effectively and you should expect to work during winter and spring vacations.

3. To make every hour count for examined subjects, use your learning opportunities. Try hard to follow lectures even if you don't keep up to date with problem sheets. But attend tutorials even if you are way behind: your tutors will understand. They won't take it personally if you are stuck on Sheet 1 — they are there to unstick you.

4. To maintain the reputation and accreditation of your degree, we already apportioned your 60 ECTS appropriately between subjects and activities. We took into account that coursework is assessed on aggregate, as are some pairs of examined subjects.

Tip: You can rely on the way we have designed the balance of workload: ration your own time accordingly!

If you consistently work less than the recommended time you will probably fall behind and the work will get on top of you.

If you find that you have to spend more than the amount suggested just to keep up with the work you may be attempting to do too much or you may be studying inefficiently; you should discuss this with your personal tutor.

Progress tests

Examined modules in ME1–2 feature a progress test which counts towards your total coursework mark. These tests are designed to motivate you and maintain the pace, and to provide an early warning system for your Personal Tutor and the Senior Tutor.

Although they are not held under formal examination conditions, these short (typically 50 minute) tests are very important.

ME1 progress tests are run during the last week of autumn term — an integrated Master’s degree programme has a lot to achieve in four years, and you will need to pick up speed quickly. Satisfactory performance is important and the test results are taken seriously. We will use them to assess whether you are using lectures, private study and tutorials effectively and even of whether you have chosen the right programme.
Warning: If you comprehensively fail progress tests you will be deemed as having made unsatisfactory academic progress, will be ineligible for the end of year exams and will be required to withdraw from the College.

ME2 progress tests take place at the beginning of spring term. The results will provide you with valuable support for self-assessment and ‘learning to learn’ but they are also reviewed carefully by the Senior Tutor.

Clinic tutorials

Each examined ME1-2 module normally ends with revision lectures supported by clinic tutorials — open tutorials staffed by subject-specialist tutors.

Clinic tutorials are aimed towards supporting topics introduced towards the end of the course, and issues arising from past exam papers. At least the last three papers will be provided on the module Blackboard site.

Caution: Don’t allow your revision to rely on past papers: they are provided as a guide for what style and level to expect, not what questions to expect. Focus on the module learning outcomes and problem sheets and aim at understanding the material rather than memorising it.

Books

Each module specifies a list of books which you are recommended — and in a few cases required — to purchase.

The course description for each module gives a list of recommended books. Few of these are identified as essential for purchase. You should buy these few: the library holds additional copies but they are usually booked out, the loan period is short and you may need them for an urgent submission. Some of these textbooks will be suitable for more than one year and useful to keep as long term reference books. More detailed advice will be given during the first few lectures of each course.

Tip: In 2013-14 the Faculty of Engineering will be piloting a scheme for eBook access, probably to a single ME1 textbook. More details will be given as they are finalised.

Copies of recommended books may be purchased from the Blackwell’s bookshop which will be in the Concourse of the City and Guilds building during the first month of term. You will get details of this during the first week. There is also a Blackwell’s branch on the main walkway at the South Ken campus where you will be able to purchase the books you require.

Foreign language classes

The College runs intensive foreign language classes. If you are on a Year Abroad programme, remember that for certain foreign placements you should begin the relevant language course in your first year in order to reach required level by fourth year.

Classes are given at the rate of 3 hours of classes per week, and will also require private study. This is a big commitment, not recommended for students on other Mechanical Engineering courses. Assessment of language classes can contribute to the degree mark in ME3, but not in any other year.

If you want to study a foreign language at a less demanding rate, consider taking one of the many foreign language evening classes on offer. These involve a class of about 2 hours one evening each week during term. There is a charge, but the Department will refund this for students who eventually do study abroad — provided that they get a report of satisfactory attendance. Naturally, this only applies to languages that would enable students to study abroad in one of the countries at which places are offered.

Note: As part of the Imperial Horizons programme, every ME1 student will have the opportunity of taking a beginner-level course in one of eight different languages.
Further information about language courses and how to register for them will be available at the beginning of term.

**Imperial Horizons**

_The Imperial Horizons programme offers UG1-2 students the opportunity to develop knowledge and skills beyond their core degree subject. There are courses on subjects including languages at various levels, humanities, business and global issues. The aims are to broaden undergraduate education, inspire creativity and enhance professional impact._

In 2015-16, Imperial Horizons will be offered to all first and second years in autumn and spring Terms.

Key selling points are:

- Students develop a unique career edge. The courses are a selling point for employers, developing valuable skills in communication, team-working and problem-solving, and promoting enhanced business and organisational awareness.
- Improved student experience. The courses are designed to have maximum positive impact on student experience.
- Free and taught during scheduled teaching slots. All Departments have organised timetables to avoid the scheduled Horizons slots (16.00-18.00 on Tuesday for UG1 and Monday for UG2). There are no additional charges.

Courses run for one or two terms. Students who enrol on a one-term course are encouraged to use the other term for a second course.

**Table 9: Dates for incoming 1st years in October 2015.**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperial Horizons enrolment opens</td>
<td>Monday, 7 September, 2015</td>
<td>—</td>
</tr>
<tr>
<td>Imperial Horizons enrolment closes</td>
<td>Monday, 12 October, 2015</td>
<td>17:00</td>
</tr>
<tr>
<td>Allocations confirmed</td>
<td>Friday, 23 October, 2015</td>
<td>—</td>
</tr>
</tbody>
</table>

Register your course preferences on the Imperial Horizons website during Welcome Week, before enrollment closes.

Informal information sessions where you can meet some of the teaching and administrative team to find out more about the programme or a particular course will take place Monday, Tuesday, and Thursday during Welcome Week from 12-2pm, in the Centre for Languages, Culture and Communication (access via Level 3 Sherfield Building).

To find our more, visit the website: [www.imperial.ac.uk/horizons](http://www.imperial.ac.uk/horizons).

**ME1 coursework marks distribution**

_In ME1, all marks for coursework are aggregated into a single, large pass/fail element so that a student who fails the year needs only to resit examinations. The allocation and distribution of coursework marks within each module is stated on the course description._

**Table 10: Distribution of coursework marks in ME1**

<table>
<thead>
<tr>
<th>Module code</th>
<th>Module</th>
<th>Activity</th>
<th>Marks</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1-HCPT</td>
<td>Computing</td>
<td>Matlab exercise 1</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Matlab exercise 2</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Module code</td>
<td>Module</td>
<td>Activity</td>
<td>Marks</td>
<td>Total</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------</td>
<td>---------------------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>ME1-HDMF</td>
<td>Design and Manufacture</td>
<td>Group project report</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Visual diary</td>
<td>10</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>CAD modelling</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>ME1-HERS</td>
<td>Experimental Reporting Skills</td>
<td>Report 1 draft</td>
<td>05</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Report 1 final</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Log book</td>
<td>05</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Abstract writing task</td>
<td>04</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writing assessment</td>
<td>04</td>
<td></td>
</tr>
<tr>
<td>ME1-HMTH</td>
<td>Mathematics</td>
<td>Progress test</td>
<td>04</td>
<td>04</td>
</tr>
<tr>
<td>ME1-HFMX</td>
<td>Fluid Mechanics</td>
<td>Progress test</td>
<td>04</td>
<td>09</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lab report</td>
<td>05</td>
<td></td>
</tr>
<tr>
<td>ME1-HTHD</td>
<td>Thermodynamics</td>
<td>Progress test</td>
<td>04</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lab report</td>
<td>07</td>
<td></td>
</tr>
<tr>
<td>ME1-HMCX</td>
<td>Mechanics</td>
<td>Progress test</td>
<td>04</td>
<td>04</td>
</tr>
<tr>
<td>ME1-HSAN</td>
<td>Stress Analysis</td>
<td>Progress test</td>
<td>04</td>
<td>04</td>
</tr>
<tr>
<td>ME1-HMATL</td>
<td>Materials</td>
<td>Progress test</td>
<td>04</td>
<td>08</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lab report</td>
<td>08</td>
<td></td>
</tr>
<tr>
<td>ME1-HMTX</td>
<td>Mechatronics</td>
<td>Progress test</td>
<td>04</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In-lab assessments 1-4</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>ME1 coursework</td>
<td>TOTAL</td>
<td>170</td>
<td></td>
</tr>
</tbody>
</table>

**Mapping of ME1 modules onto ECTS elements**

An ECTS element, — the smallest unit which a student can fail and re-take — is equivalent to a Registry unit of assessment. Since exchange students usually wish to transfer credit in modules rather than in Registry units, there is a mapping between ME modules and the elements to which they contribute.
The following tables show, for each ME1 module, the total ECTS value both as an item in itself (if passed, for example, both on examined and coursework assessments) and as a contributor to Registry units of assessment (elements). If an element consists of just one module, there is no distinction and the element takes the code of that module; otherwise, the element code is distinguished by having no level descriptor ‘H’ or ‘M’ following the hyphen.

**Table 11: ME1 modules**

<table>
<thead>
<tr>
<th>Module</th>
<th>Module ECTS</th>
<th>Distribution to ECTS element ME1-DMF</th>
<th>MTX</th>
<th>SM</th>
<th>MATL</th>
<th>TF</th>
<th>HMTTH</th>
<th>CW</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME1-hERS</td>
<td>2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>ME1-hDMF</td>
<td>10</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>ME1-hMTX</td>
<td>5.5</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.5</td>
</tr>
<tr>
<td>ME1-hMCX</td>
<td>5.5</td>
<td>—</td>
<td>—</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>0.5</td>
</tr>
<tr>
<td>ME1-hSAN</td>
<td>5.5</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>0.5</td>
</tr>
<tr>
<td>ME1-hMATL</td>
<td>5.5</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>5</td>
<td>—</td>
<td>0.5</td>
</tr>
<tr>
<td>ME1-hTHD</td>
<td>5.5</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>5</td>
<td>0.5</td>
</tr>
<tr>
<td>ME1-hFMX</td>
<td>5.5</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>5</td>
<td>0.5</td>
</tr>
<tr>
<td>ME1-hCPT</td>
<td>3</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>ME1-hMTH</td>
<td>12</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>12</td>
<td>—</td>
</tr>
<tr>
<td>ME1-hMTHA</td>
<td>0</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>5</td>
<td>10</td>
<td>12</td>
<td>13</td>
</tr>
</tbody>
</table>

**ME1 student prizes and awards**

Various bequests, donors and sponsors (including the Department itself) have funded annual prizes to students for special achievement. These are awarded at an informal ceremony in the Department, to which parents are invited, on Graduation Day.

**Table 12: Annual awards offered**

<table>
<thead>
<tr>
<th>Award</th>
<th>Citation and value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frank Turner Wilson First Year Prize</td>
<td>Three prizes, each up to the value of £500, for annual award to the most outstanding student in the first year of the undergraduate course in Mechanical Engineering. The awards to take into account academic achievement, practical abilities and contribution to departmental activities.</td>
<td>ME1</td>
</tr>
</tbody>
</table>

**The Dean’s list**

Because Imperial graduates compete in an international market, Imperial has matched the USA practice of recognising the top 10% of A-graded students in each year on a ‘Dean’s list’ — and marking this achievement on the transcript of graduating students.

The conditions are:
1. Achieving an overall mark of 70% or greater during the previous 12 months, and
2. Being placed within the top 10% (rounded up) of students in their cohort — e.g., of their year and programme.
Chapter 8

ME2 course information

Topics:

- The 2nd Year Organiser
- Structure of the ME1-2 programme
- Key dates and attendance in ME2
- Managing your time and workload
- Progress tests
- Clinic tutorials
- Books
- Foreign language classes
- The year in industry
- Imperial Horizons
- ME2 coursework marks distribution
- Mapping of ME2 modules onto ECTS elements
- ME2 student prizes and awards
- The Dean’s list

The first two years of your programme lay the foundations for your training as a professional engineer.
Structure of the ME1-2 programme

The programme consists of a number of self-contained modules on different subjects, most of which run all year and are examined during summer term.

The structure of the first-year course is shown in Table 13: ME1-2 modules on page 76. Most modules run through the entire academic year and will be examined in May. Each will consist of a mixture of lectures and tutorials, a progress test and perhaps laboratory, design and/or project work.

Table 13: ME1-2 modules

<table>
<thead>
<tr>
<th>ME1 module</th>
<th>ME2 module</th>
<th>Subject group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Reporting Skills</td>
<td>Technical Presentation Skills</td>
<td>Design and Projects</td>
</tr>
<tr>
<td>Design and Manufacture</td>
<td>Management and Business for Engineers</td>
<td></td>
</tr>
<tr>
<td>Mechatronics</td>
<td>Mechatronics</td>
<td>Control</td>
</tr>
<tr>
<td>Dynamics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanics</td>
<td>Stress Analysis</td>
<td>Solid Mechanics</td>
</tr>
<tr>
<td>Materials</td>
<td>Materials</td>
<td></td>
</tr>
<tr>
<td>Thermodynamics</td>
<td>Thermodynamics</td>
<td>Thermofluids</td>
</tr>
<tr>
<td>Heat Transfer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluid Mechanics</td>
<td>Fluid Mechanics</td>
<td></td>
</tr>
<tr>
<td>Computing</td>
<td>Computing</td>
<td>Maths and Computing</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Mathematics</td>
<td></td>
</tr>
</tbody>
</table>
A detailed module descriptor for each of these modules can be found both on the web and on Blackboard — where course materials are also available.

Key dates and attendance in ME2

The College has both a duty of care towards its students, and regulations to ensure that they follow the prescribed programme of studies. For these and other reasons there are a number of points during the year at which your absence will be reported to the Senior Tutor.

ME2

Attendance is monitored at:

- All study group tutorials
- Autumn DMF Design, Make and Test project
- Fortnightly personal tutorials
- Lab sessions
- Workshop assignments.

All coursework submissions are registered.

Table 14: Key dates this session: ME2

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn term begins</td>
<td>Monday, 5 October, 2015</td>
<td>—</td>
</tr>
<tr>
<td>Autumn term ends</td>
<td>Friday, 18 December, 2015</td>
<td>—</td>
</tr>
<tr>
<td>Spring term begins</td>
<td>Saturday, 9 January, 2016</td>
<td>—</td>
</tr>
<tr>
<td>Spring term ends</td>
<td>Wednesday, 23 March, 2016</td>
<td>—</td>
</tr>
<tr>
<td>Summer term begins</td>
<td>Saturday, 23 April, 2016</td>
<td>—</td>
</tr>
<tr>
<td>ME1-2 exams begin</td>
<td>Monday, 16 May, 2016</td>
<td>—</td>
</tr>
<tr>
<td>ME1-2 exams end</td>
<td>Friday, 27 May, 2016</td>
<td>—</td>
</tr>
<tr>
<td>Summer term ends</td>
<td>Friday, 24 June, 2016</td>
<td>—</td>
</tr>
</tbody>
</table>

Attention: For coursework submission deadlines, key dates and late-breaking news associated with specific modules, please check the calendar on the corresponding Blackboard page.

Caution: You are required to attend College until the end of session because the External Examiners may wish to interview you during the last week. You should therefore avoid any commitment — other than those forming part of the course — which could prevent you attending College during term-time.

Related Links

Term dates for next two years

Managing your time and workload

One reason why engineering graduates are highly sought-after outside the profession is that an engineering education provides excellent training for self-organisation, time management and team working. Like any form of intensive training, developing these skills will stretch you — especially during the first two years.
The *Imperial Success Guide* site provides excellent general advice on dividing your time between work and leisure, and finding an overall work/life balance. Within the course workload you will often find yourself having to time-share and multi-task, perhaps balancing time and effort between coursework submissions while keeping up with lecture courses.

This is how professional life is, and learning these skills through practice will give you a competitive advantage.

**Tip:** Reflecting on and recounting the workload management challenges you met and overcame is one of the subjects which employment interviewers will find much more interesting than (for example) the marks you gained in Maths.

1. The description for each module (posted at the head of the Blackboard page) shows an ECTS rating. Multiply this by 25 to get a realistic estimate, in hours, of the total time you should spend on the module.

2. An academic year is equivalent to 60 ECTS. About 1500 hours of work should be enough to progress from one year of the programme to the next. This works out to about 50h per term week, but some term time hours cannot be used effectively and you should expect to work during winter and spring vacations.

3. To make every hour count for examined subjects, use your learning opportunities. Try hard to follow lectures even if you don’t keep up to date with problem sheets. But attend tutorials even if you are way behind: your tutors will understand. They won’t take it personally if you are stuck on Sheet 1 — they are there to unstick you.

4. To maintain the reputation and accreditation of your degree, we already apportioned your 60 ECTS appropriately between subjects and activities. We took into account that coursework is assessed on aggregate, as are some pairs of examined subjects.

**Tip:** You can rely on the way we have designed the balance of workload: ration your own time accordingly!

If you consistently work less than the recommended time you will probably fall behind and the work will get on top of you.

If you find that you have to spend more than the amount suggested just to keep up with the work you may be attempting to do too much or you may be studying inefficiently; you should discuss this with your personal tutor.

### Progress tests

Examined modules in ME1–2 feature a progress test which counts towards your total coursework mark. These tests are designed to motivate you and maintain the pace, and to provide an early warning system for your Personal Tutor and the Senior Tutor.

Although they are not held under formal examination conditions, these short (typically 50 minute) tests are very important.

**ME1** progress tests are run during the last week of autumn term — an integrated Master’s degree programme has a lot to achieve in four years, and you will need to pick up speed quickly. Satisfactory performance is important and the test results are taken seriously. We will use them to assess whether you are using lectures, private study and tutorials effectively and even of whether you have chosen the right programme.

**Warning:** If you comprehensively fail progress tests you will be deemed as having made unsatisfactory academic progress, will be ineligible for the end of year exams and will be required to withdraw from the College.

**ME2** progress tests take place at the beginning of spring term. The results will provide you with valuable support for self-assessment and ‘learning to learn’ but they are also reviewed carefully by the Senior Tutor.
Clinic tutorials

Each examined ME1-2 module normally ends with revision lectures supported by clinic tutorials — open tutorials staffed by subject-specialist tutors.

Clinic tutorials are aimed towards supporting topics introduced towards the end of the course, and issues arising from past exam papers. At least the last three papers will be provided on the module Blackboard site.

Caution: Don’t allow your revision to rely on past papers: they are provided as a guide for what style and level to expect, not what questions to expect. Focus on the module learning outcomes and problem sheets and aim at understanding the material rather than memorising it.

Books

Each module specifies a list of books which you are recommended — and in a few cases required — to purchase.

The course description for each module gives a list of recommended books. Few of these are identified as essential for purchase. You should buy these few: the library holds additional copies but they are usually booked out, the loan period is short and you may need them for an urgent submission. Some of these textbooks will be suitable for more than one year and useful to keep as long term reference books. More detailed advice will be given during the first few lectures of each course.

Tip: In 2013-14 the Faculty of Engineering will be piloting a scheme for eBook access, probably to a single ME1 textbook. More details will be given as they are finalised.

Copies of recommended books may be purchased from the Blackwell’s bookshop which will be in the Concourse of the City and Guilds building during the first month of term. You will get details of this during the first week. There is also a Blackwell’s branch on the main walkway at the South Ken campus where you will be able to purchase the books you require.

Foreign language classes

The College runs intensive foreign language classes. If you are on a Year Abroad programme, remember that for certain foreign placements you should begin the relevant language course in your first year in order to reach required level by fourth year.

Classes are given at the rate of 3 hours of classes per week, and will also require private study. This is a big commitment, not recommended for students on other Mechanical Engineering courses. Assessment of language classes can contribute to the degree mark in ME3, but not in any other year.

If you want to study a foreign language at a less demanding rate, consider taking one of the many foreign language evening classes on offer. These involve a class of about 2 hours one evening each week during term. There is a charge, but the Department will refund this for students who eventually do study abroad — provided that they get a report of satisfactory attendance. Naturally, this only applies to languages that would enable students to study abroad in one of the countries at which places are offered.

Note: As part of the Imperial Horizons programme, every ME1 student will have the opportunity of taking a beginner-level course in one of eight different languages.

Further information about language courses and how to register for them will be available at the beginning of term.
The year in industry

*Students who chose the Year in Industry programme will normally take the industrial year between ME2 and ME3, when its ability to enrich the academic course and the ME3 group project will probably be greatest.*

All the information you need for this year is provided in the separate *Guide to Industrial Training*.

Imperial Horizons

*The Imperial Horizons programme offers UG1-2 students the opportunity to develop knowledge and skills beyond their core degree subject. There are courses on subjects including languages at various levels, humanities, business and global issues. The aims are to broaden undergraduate education, inspire creativity and enhance professional impact.*

In 2015-16, Imperial Horizons will be offered to all first and second years in autumn and spring Terms.

Key selling points are:

- Students develop a unique career edge. The courses are a selling point for employers, developing valuable skills in communication, team-working and problem-solving, and promoting enhanced business and organisational awareness.
- Improved student experience. The courses are designed to have maximum positive impact on student experience.
- Free and taught during scheduled teaching slots. All Departments have organised timetables to avoid the scheduled Horizons slots (16.00-18.00 on Tuesday for UG1 and Monday for UG2). There are no additional charges.

Courses run for one or two terms. Students who enrol on a one-term course are encouraged to use the other term for a second course.

**Table 15: Dates for incoming 1st years in October 2015.**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperial Horizons enrolment opens</td>
<td>Monday, 7 September, 2015</td>
<td>—</td>
</tr>
<tr>
<td>Imperial Horizons enrolment closes</td>
<td>Monday, 12 October, 2015</td>
<td>17:00</td>
</tr>
<tr>
<td>Allocations confirmed</td>
<td>Friday, 23 October, 2015</td>
<td>—</td>
</tr>
</tbody>
</table>

Register your course preferences on the Imperial Horizons website during Welcome Week, before enrollment closes.

Informal information sessions where you can meet some of the teaching and administrative team to find out more about the programme or a particular course will take place Monday, Tuesday, and Thursday during Welcome Week from 12-2pm, in the Centre for Languages, Culture and Communication (access via Level 3 Sherfield Building)

To find our more, visit the website: [www.imperial.ac.uk/horizons](http://www.imperial.ac.uk/horizons).

**Related Links**

- Find out more about Imperial Horizons
- Horizon course options available for ME2
**ME2 coursework marks distribution**

In **ME2**, all marks for coursework are aggregated into a single, large pass/fail element so that a student who fails the year needs only to resit examinations. The allocation and distribution of coursework marks within each module is stated on the course description.

**Table 16: Distribution of coursework marks in ME2**

<table>
<thead>
<tr>
<th>Module code</th>
<th>Module</th>
<th>Activity</th>
<th>Marks</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME2-HCPT</td>
<td>Computing</td>
<td>Tutorial worksheets 1-8</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Progress test</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>End of course test</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>ME2-HDMF</td>
<td>Design and Manufacture</td>
<td>Prototype</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group project report</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Poster presentation</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>ME2-HTPS</td>
<td>Technical Presentation Skills</td>
<td>Presentation</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>ME2-HMTH</td>
<td>Mathematics</td>
<td>Progress test</td>
<td>06</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td>06</td>
<td></td>
</tr>
<tr>
<td>ME2-HFMX</td>
<td>Fluid Mechanics</td>
<td>Progress test</td>
<td>06</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lab report</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ME2-HTHD</td>
<td>Thermodynamics</td>
<td>Progress test</td>
<td>06</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lab report</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ME2-HHTR</td>
<td>Heat transfer</td>
<td>Progress test</td>
<td>06</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Lab report</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ME2-HDYN</td>
<td>Dynamics</td>
<td>Progress test</td>
<td>06</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lab report</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ME2-HSAN</td>
<td>Stress Analysis</td>
<td>Progress test</td>
<td>06</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lab report</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ME2-HMATL</td>
<td>Materials</td>
<td>Progress test</td>
<td>06</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lab report</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>
### Module code | Module | Activity | Marks | Total
---|---|---|---|---
| | | TOTAL | 30 |
| ME2-HMTX | Mechatronics | Progress test | 08 |
| | | In-lab assessments 1-4 | 16 |
| | | Lab report | 20 |
| | | TOTAL | 44 |
| ME2 coursework | TOTAL | 390 |

### Mapping of ME2 modules onto ECTS elements

An ECTS element, — the smallest unit which a student can fail and re-take — is equivalent to a Registry unit of assessment. Since exchange students usually wish to transfer credit in modules rather than in Registry units, there is a mapping between ME modules and the elements to which they contribute.

The following tables show, for each ME2 module, the total ECTS value both as an item in itself (if passed, for example, both on examined and coursework assessments) and as a contributor to Registry units of assessment (elements). If an element consists of just one module, there is no distinction and the element takes the code of that module; otherwise, the element code is distinguished by having no level descriptor ‘H’ or ‘M’ following the hyphen.

**Table 17: ME2 modules**

<table>
<thead>
<tr>
<th>Module</th>
<th>Module ECTS</th>
<th>Distribution to ECTS element ME2-</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DMM</td>
</tr>
<tr>
<td>ME2-hTPS</td>
<td>1</td>
<td>—</td>
</tr>
<tr>
<td>ME2-hMBE</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>ME2-hDMF</td>
<td>10.5</td>
<td>5</td>
</tr>
<tr>
<td>ME2-hMTX</td>
<td>5.5</td>
<td>—</td>
</tr>
<tr>
<td>ME2-hDYN</td>
<td>4.5</td>
<td>—</td>
</tr>
<tr>
<td>ME2-hSAN</td>
<td>5.5</td>
<td>—</td>
</tr>
<tr>
<td>ME2-hMATL</td>
<td>5</td>
<td>—</td>
</tr>
<tr>
<td>ME2-hTHD</td>
<td>5</td>
<td>—</td>
</tr>
<tr>
<td>ME2-hHTR</td>
<td>4.5</td>
<td>—</td>
</tr>
<tr>
<td>ME2-hFMX</td>
<td>5.5</td>
<td>—</td>
</tr>
<tr>
<td>ME2-hCPT</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>ME2-hMTH</td>
<td>9</td>
<td>—</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>7</td>
</tr>
</tbody>
</table>

### ME2 student prizes and awards

Various bequests, donors and sponsors (including the Department itself) have funded annual prizes to students for special achievement. These are awarded at an informal ceremony in the Department, to which parents are invited, on Graduation Day.
Table 18: Annual awards offered

<table>
<thead>
<tr>
<th>Award</th>
<th>Citation and value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>C F Rae Griffin Book Prize</td>
<td>For annual award to a second year undergraduate student in the Department of Mechanical Engineering for excellence in practical coursework. In making recommendations, Departments are asked to bear in mind that the objective of the prize is to recognise excellence in the practical coursework — i.e. a real flair for practical engineering.</td>
<td>ME2</td>
</tr>
<tr>
<td>Frank Turner Wilson Second Year Prize</td>
<td>Three prizes, each up to the value of £500, for annual award to the most outstanding student in the second year of the undergraduate course in Mechanical Engineering. The awards to take into account academic achievement, practical abilities and contribution to departmental activities.</td>
<td>ME2</td>
</tr>
<tr>
<td>Frederic Barnes Waldron Award of the Institution of Mechanical Engineers</td>
<td>For annual award to the best overall student in Mechanical Engineering who has completed at least two years of an accredited degree programme and who is an affiliate member of the Institution of Mechanical Engineering. Value £200.</td>
<td>ME2</td>
</tr>
<tr>
<td>National Power Prize in Mechanical Engineering</td>
<td>For annual award to the best overall student at the end of the second year. Value £100.</td>
<td>ME2</td>
</tr>
<tr>
<td>Neil Watson Memorial Prize</td>
<td>For annual award to up to four undergraduate students in the second year of any course in Mechanical Engineering for excellence in oral communication of technical information. Value £100 each.</td>
<td>ME2</td>
</tr>
<tr>
<td>Sir Bruce White Laboratory Prize in Mechanical Engineering</td>
<td>For annual award to the undergraduate student in Mechanical Engineering with the most meritorious performance on the laboratory course in the second year. Value £100.</td>
<td>ME2</td>
</tr>
<tr>
<td>Improvers Prize</td>
<td>A Departmental award to the undergraduate student in Mechanical Engineering who has shown greatest improvement in the second year. Value £50.</td>
<td>ME2</td>
</tr>
</tbody>
</table>

The Dean’s list

*Because Imperial graduates compete in an international market, Imperial has matched the USA practice of recognising the top 10% of A-graded students in each year on a ‘Dean’s list’ — and marking this achievement on the transcript of graduating students.*

The conditions are:

1. Achieving an overall mark of 70% or greater during the previous 12 months, and
2. Being placed within the top 10% (rounded up) of students in their cohort — e.g., of their year and programme.
Chapter 9

ME3 course information

Topics:
- The 3rd Year Organiser
- Structure of the ME3 programme
- Key dates and attendance in ME3
- Choosing ME3 electives
- ME3 Design, make and test project
- Intellectual property
- Undergraduate Teaching Assistants
- Mechanical Engineering with Nuclear Engineering
- Transfer from MEng to BEng
- Transfer from BEng to MEng
- Graduation
- ME3 student prizes and awards
- The Dean’s list

As you begin your third year, you’ve mastered most of the knowledge and skills which every mechanical engineer needs. This year focuses on gathering these together to analyse machine and energy systems, and on developing the group working skills you need to create such systems yourself. You will also begin to study in greater depth specialised subjects which particularly interest you.
You should check the ME3 Blackboard site and notice board (on level 7, by the lifts) frequently during term time. Notices and emails are usually the only practicable means of communication in ME3.

**Structure of the ME3 programme**

The core elements of ME3 are one lecture-based module on each of the two main subject areas, a group project and a literature research project. The remainder consists of electives which should be selected with the following year in mind.

The two core lecture modules — each running in autumn and spring terms, consisting of lectures and tutorials and assessed by a written examination — are:

- **Machine System Dynamics**, which completes core material in the Control and Solid Mechanics subject areas, and
- **Thermodynamics and Energy**, which completes core material in the Thermofluids subject area.

Two further core modules are assessed by coursework only:

- The **Literature Research Project**, which is undertaken in autumn term and submitted in Week 8, and
- The **Design, Make and Test Project**, which runs throughout the session.

You must also take five elective modules, choosing them according to fixed rules.

**Related Links**

- [ME1 module descriptors](#)
- [Blackboard course materials](#)

**Key dates and attendance in ME3**

The College has both a duty of care towards its students, and regulations to ensure that that they follow the prescribed programme of studies. For these and other reasons there are several points during the year at which your absence will be reported to the Senior Tutor.

Attendance is monitored at:

- Minuted DMT Project meetings
- Weekly personal tutorials
- The Ethics course
All coursework submissions are registered.

### Table 19: Key dates this session: ME3

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn term begins</td>
<td>Monday, 5 October, 2015</td>
<td>—</td>
</tr>
<tr>
<td>Autumn term ends</td>
<td>Friday, 18 December, 2015</td>
<td>—</td>
</tr>
<tr>
<td>Spring term begins</td>
<td>Saturday, 9 January, 2016</td>
<td>—</td>
</tr>
<tr>
<td>Spring term ends</td>
<td>Wednesday, 23 March, 2016</td>
<td>—</td>
</tr>
<tr>
<td>Summer term begins</td>
<td>Saturday, 23 April, 2016</td>
<td>—</td>
</tr>
<tr>
<td>ME3-4 exams begin</td>
<td>Monday, 25 April, 2016</td>
<td>—</td>
</tr>
<tr>
<td>ME3-4 exams end</td>
<td>Friday, 6 May, 2016</td>
<td>—</td>
</tr>
<tr>
<td>DMT report due</td>
<td>Thursday, 2 June, 2016</td>
<td>12:00</td>
</tr>
<tr>
<td>Project seminar week begins</td>
<td>Monday, 6 June, 2016</td>
<td>—</td>
</tr>
<tr>
<td>Summer term ends</td>
<td>Friday, 24 June, 2016</td>
<td>—</td>
</tr>
<tr>
<td>ME3-4 elective selection closes</td>
<td>Friday, 20 November, 2015</td>
<td>17:00</td>
</tr>
</tbody>
</table>

⚠️ **Attention:** For coursework submission deadlines, key dates and late-breaking news associated with specific modules, please check the calendar on the corresponding Blackboard page.

⚠️ **Caution:** You are required to attend College until the end of session because the External Examiners may wish to interview you during the last week. You should therefore avoid any commitment — other than those forming part of the course — which could prevent you attending College during term-time.

### Related Links

- [Term dates for next two years](#)
- [Choosing ME3 electives](#)
- [Types of ME3-4 electives](#)

### Choosing ME3 electives

*The ME3 programme includes two core modules and several required coursework elements. The remainder consists of more specialised optional courses (electives) which, within certain constraints, can be chosen at will.*

### Types of ME3-4 electives

*Electives are classified by level and by subject, so that the selection rules can ensure a balanced curriculum.*

### Table 20: Elective level codes

<table>
<thead>
<tr>
<th>Level code</th>
<th>Description of level</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Equivalent to final-year Bachelor’s degree (Level 6)</td>
</tr>
<tr>
<td>M</td>
<td>Equivalent to Master’s degree (Level 7)</td>
</tr>
</tbody>
</table>

### Table 21: Elective subject codes

<table>
<thead>
<tr>
<th>Subject code</th>
<th>Levels</th>
<th>Description of syllabus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical</td>
<td>H, M</td>
<td>Directly related to mainstream engineering science</td>
</tr>
<tr>
<td>Subject code</td>
<td>Levels</td>
<td>Description of syllabus</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Design and Management</td>
<td>H, M</td>
<td>Concerning the application of engineering principles in society and in industry</td>
</tr>
<tr>
<td>Horizons</td>
<td>H only</td>
<td>Languages, cross-disciplinary subjects and broader cultural disciplines</td>
</tr>
<tr>
<td>IDX</td>
<td>M only</td>
<td>Related to the disciplines of other Faculty of Engineering departments, and provided by them under the Inter-Departmental Exchange scheme.</td>
</tr>
</tbody>
</table>

Note: As well as IDX modules, a number of other ME3-4 electives are administered by or alongside other departments. Differences of practice and style may include the need to download and print your own notes: to cover this possibility, printing credits for all ME3-4 students have been increased.

Rules for selecting ME3 electives

Outside their essential core, the third and fourth years give you a great deal of choice in the subjects you study. It is very important, though, to plan carefully so that you remain eligible for the degree you are aiming at by observing the rules.

General conditions

1. No credit will be given for any elective unless you have registered for it.
2. You cannot register for any M-level elective until you have progressed to ME4.
3. No more than one Horizons elective in total can count towards your degree.
4. No more than three Design and Management electives in total can count towards your degree.

Requirements for progressing from ME3 or graduating with a BEng degree

As well as the two core ME3 modules and coursework, you must complete five H-level electives. Some ME4 modules have pre-requisite ME3 modules, so you might want to plan ahead.

Warning: We cannot absolutely guarantee, more than a few months in advance, to run any specific M-level module.

If you plan to graduate from ME4 with an MEng in Mechanical Engineering with Nuclear Engineering, your ME3 electives must include both

- Introduction to Nuclear Energy and
- Nuclear Chemical Engineering.

Electives differ widely in assessment mode and timing. Using the module descriptors, try to select a distribution which suits you.

You can, of course, attend one or two H-level electives for which you are not registered. It may later become possible for you to register on one of these before assessments begin. If you are thinking of doing so discuss, with your Personal Tutor, the potential effects on your workload and on the balance of subjects you are studying.

If you are able to take on an additional course, then at the end of the year we will select your best results according to the General Conditions.

Warning: You cannot carry forward to ME4 marks from additional modules taken in ME3 but not counted towards the ME3 Examination total.

Rules for selecting ME4 electives

To graduate with an MEng in Mechanical Engineering you must, in addition to your ME4 project, complete one of the Advanced Applications courses and at least two other M-level electives.
General conditions

1. No credit will be given for any elective unless you have registered for it.
2. No more than one Horizons elective in total can count towards your degree.
3. No more than two IDX electives in total can count towards your degree.
4. No more than three Design and Management electives in total can count towards your degree.

To graduate with an MEng in Mechanical Engineering with Nuclear Engineering, your chosen electives must include three M-level ones:

- Nuclear Materials
- Nuclear Thermal Hydraulics and
- Nuclear Reactor Physics.

Electives available to ME3 this session

The choice of electives does occasionally change from one year to the next.

H-level Technical electives

BEng final-year level electives on technical subjects offered to Mechanical Engineering undergraduate students this session.

<table>
<thead>
<tr>
<th>Code</th>
<th>Module</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME3-HCCM</td>
<td>Computational Continuum Mechanics</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HECM</td>
<td>Embedded C for Microcontrollers</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HFMX</td>
<td>Fluid Mechanics</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HFEAA</td>
<td>Finite Element Analysis and Applications</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HFFM</td>
<td>Fundamentals of Fracture Mechanics</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HNUCN</td>
<td>Introduction to Nuclear Energy</td>
<td>6</td>
</tr>
<tr>
<td>CHE-430</td>
<td>Nuclear Chemical Engineering¹</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HMTH</td>
<td>Mathematics</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HSTAT</td>
<td>Statistics</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HSAN</td>
<td>Stress Analysis</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HSPAP</td>
<td>Structure, Properties and Applications of Polymers</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HMTM</td>
<td>Manufacturing Technology and Management²</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HTRB</td>
<td>Tribology</td>
<td>6</td>
</tr>
</tbody>
</table>

Related Links

ME3-HCCM module description
ME3-HECM module description
ME3-HFMX module description
ME3-HFEAA module description
ME3-HFFM module description
ME3-HNUCN module description
ME3-HMTH module description
ME3-HSTAT module description
ME3-HSPAP module description

¹ Available to students on the Mechanical Engineering with Nuclear Engineering programme only.
² Formerly Integrated Design and Manufacture
**ME3-HMTM module description**

**ME3-HTRB module description**

**H-level Design and Management electives**

*BEng final-year level electives on design and management topics offered to Mechanical Engineering undergraduate students this year.*

<table>
<thead>
<tr>
<th>Code</th>
<th>Module</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME3-HDAC</td>
<td>Design, Art and Creativity</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HDNVC</td>
<td>Design-led Innovation and New Venture Creation</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HTBM</td>
<td>Technology, Business and the Market</td>
<td>6</td>
</tr>
<tr>
<td>ME3-HSDP</td>
<td>System Design and Optimisation</td>
<td>6</td>
</tr>
<tr>
<td>BS0815</td>
<td>Business Economics</td>
<td>6</td>
</tr>
<tr>
<td>BS0808</td>
<td>Finance and Financial Management</td>
<td>6</td>
</tr>
</tbody>
</table>

*Note:* BS0815 and BS0808 are provided by the Business School under its BPES programme.

**Related Links**

- ME3-HDAC module description
- ME3-HDNVC module description
- ME3-HTBM module description
- ME3-HSDP module description
- Further information on Imperial College Business School BPES

**H-level Horizons electives**

*The Imperial Horizons programme has been extended to 3rd and 4th year students, providing a broad range of elective courses on humanities, languages and other general topics.*

The courses offered are listed at the Imperial Horizons website. All are delivered at the same time: Thursday, 16:00-18:00. Any of those currently available can be chosen, within our own general conditions and those of the College. Only one can count towards your degree, and if it is a language course it must be taken at Level 2 or higher.

**Tip:** Any Horizons module which you take and pass, but which cannot count towards your degree, will be recorded on your transcript and will count for 6 additional ECTS.

**Related Links**

- Horizon course options available for ME3 and ME4

**Registering for ME3 electives**

*The elective courses offered change from year to year and because space and timetable slots are limited, allocating places can be difficult. Although most students succeed in getting the electives they hoped for, the selection process can be difficult and must be started early.*

1. If you wish to take a Horizons course, register for it as soon as they are announced — early in the previous summer term. Places are still available on some modules until considerably later, so do check the Imperial Horizons website.

2. After all ME summer examinations are over, registration will open for ME electives only (except Advanced Applications electives). Register your preliminary choices at any time before the deadline, using DSS: this is not a first-come, first-served process.

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME3-4 elective selection closes</td>
<td>Friday, 20 November, 2015</td>
<td>17:00</td>
</tr>
</tbody>
</table>
**Warning:** If you choose more than five electives, your preferences will not be taken into account at all! You are not making a final commitment, but we need to know your preferences for our planning.

**Note:** Staff and timetable changes beyond our control may still affect the electives offered: places on your preferred courses cannot be guaranteed or confirmed.

**Important:** Some modules have limited capacity and there will be a registration process for them. You will be informed of this by e-mail and/or in the first lecture.

3. New ME4 students should investigate the Advanced Applications electives on offer, and make a preliminary choice after a special presentation during the first week of autumn term.

4. During the autumn term you may attend other electives for which you are not already registered, and you may be able to register for them via the UG Office.
   - If you were not successful with all your previous choices, you will now be able to select other electives where places are available, in order to satisfy the selection rules.
   - If you were successful with all your previous choices but wish to change them or to add to them, discuss your plans with your personal tutor first.

5. In the middle of ME4 spring term you will be asked to complete an Exam Registration form, indicating the courses you have selected and attended throughout the year.

**Warning:** Only marks for electives listed on the Exam Registration Form can be counted towards the total Examination mark. It is your responsibility to select enough modules to follow the prescribed course, and complete any necessary coursework.

**Registering for elective modules using DSS**

*The Departmental Student Services System (DSS) can be used to register and modify your selection of elective modules online.*

DSS remains under development, and in some respects it shows. One feature of special importance has yet to be implemented:

**Warning:** DSS is unaware of the rules and constraints which limit the electives you can select, and cannot implement them. It is your responsibility to register for enough elective modules of the right kind to progress or graduate at the end of the year!

The current (online) Student Handbook and the module descriptions accessible through it should provide you with enough information to choose between the elective courses on offer to your cohort.

1. Login to Departmental Student Services.
2. In the My Courses window which opens, ensure that the correct Academic Year is selected in the top pane. The second pane of this window should list any Core Courses, and the Selected Course Options pane below it will list your chosen electives. A fourth pane provides basic Instructions.
3. The courses available to you are listed in the fifth and final pane (some may already be full, and greyed out). Click the box next to each course you wish to take.
4. Click on Submit to transfer your choices to the Selected Course Options pane.
5. To deselect a module which you have chosen, click the box next to it in the Selected Course Options pane.
6. When your choices have been registered, click on Back.

Your choice of electives has now been registered, but at any time up to the date set you can modify it by following the same procedure.

**Important:**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective selection closes</td>
<td>Friday, 20 November, 2015</td>
<td>17:00</td>
</tr>
</tbody>
</table>
ME3 Design, make and test project

Your DMT project is the largest single assignment in ME3, carrying the most marks. You will work in a team of up to five to design, create and test an engineering device or system.

Each DMT project is supervised by two members of staff: a Supervisor and an Associate Supervisor, who will also be the ‘customers’ for your product. DMT projects generally involve practical work, e.g. within the Supervisor’s research group, the IDEAs Lab or the Formula Student pit garage.

An important objective of the DMT project is that through it you learn how to manage an engineering project. You must therefore incorporate aspects of Engineering Quality Management in your project reports, and these will carry a proportion of the total available marks. If well thought out, they will also be a crucial factor in determining your success.

Full details of the DMT module are given in separate documentation and an introductory lecture.

Intellectual property

Project work may generate — or may use — ideas or products which are ‘patentable’. On registering as a student at Imperial, you agreed to the College’s Intellectual Property policy: this limits how far you can protect intellectual property, but also limits your responsibility for maintaining that of others.

If your project is supported — with or without funding — by an external collaborator, your work on it may require information which the collaborator does not wish to divulge publicly. If so, your supervisor will arrange for a standard College contractual agreement to be set up and will make you fully aware at the outset of any potential limitations on your work: for example, a DMT project poster may require your project sponsor’s prior approval of its content, and this could take several weeks.

The agreement may just relate to confidentiality (a non-disclosure agreement, NDA) but it may be significantly broader.

⚠️ Warning: Never sign any such agreement, or any similar agreement that could potentially make you personally liable.

A College representative will sign for you. As part of your initial registration at College, you agreed to be bound by the terms of student IP Policy; the College therefore signs agreements on your behalf. You may be asked to acknowledge the terms of an agreement, but liability still rests with the College.

Undergraduate Teaching Assistants

As in other faculty departments, some undergraduates who are doing well in later years are invited to tutor students in earlier years during scheduled tutorials.
The use of Undergraduate Teaching Assistants in the Faculty of Engineering was piloted in Computing and adopted by several other departments, mainly for teaching mathematics. All departments who tried the scheme reported that it was enthusiastically welcomed.

- Students were generally less inhibited in asking questions from tutors closer to their peer group
- Undergraduate tutors gained not only financially (being paid at the standard GTA rate) but also in experience of teaching and in enhanced mastery of the subject material.

The department implemented a pilot scheme for ME1 Mathematics, employing UTAs to support the academic or GTA tutors already appointed, in 2012-13. Candidates were identified from ME3-4 cohorts and vetted by asking them to discuss with, and apply through, their personal tutor. The personal tutor applied on the candidate’s behalf to the Director of Courses, providing a brief reference.

### Claiming payment for undergraduate teaching work

*Undergraduate Teaching Assistants are paid by the College at a standard rate, and must go through a standard procedure to formalise their employment and record teaching hours. Claims must then be made monthly.*

Undergraduate Teaching Assistants (UTAs) are paid as casual workers, and must complete a few formalities before being eligible.

**Important:** You must claim payment monthly: you cannot carry over hours into the following month.

Before applying for payment, you must already have a National Insurance Number.

1. Before beginning work, download and complete a Casual Worker joining form (Pay 8a).
2. Visit the UG Administrator or PG Administrator with the Pay 8a form and original documentary evidence (e.g. a passport) of your eligibility to work in the UK:
   - A copy of this evidence will be made and forwarded to the College Payroll office.
   - Complete and sign a Letter of Understanding recording your details.
3. At the end of each subsequent month in which you have worked:
   - Complete section A of a Pay 8b form.
   - Download and complete (electronically, so that the payment amount is calculated) a Work Record Form.
   - Ask the Course Leader to confirm the work you have done by signing the Work Record form.
4. Take the completed Pay 8b and Work Record forms to the UG Office.

Payment will be made directly into your bank account.

**Related Links**

- [Union guidance for international students on getting a National Insurance number](#)
- [Download Pay 8a form](#)
- [Download Pay 8b form](#)
- [Download Work Record form form](#)

## Mechanical Engineering with Nuclear Engineering

*With most of the core mechanical engineering completed, you are in a strong position to specialise in Nuclear Engineering. This gives you the opportunity to graduate in a field of resurgent international importance, without sacrificing any of the breadth or flexibility of your main degree subject.*

The need to break the developed world’s dependence on fossil fuels has led to rapid expansion in the sustainable energy and nuclear industries.

The Mechanical Engineering, Chemical Engineering and Materials departments have responded to the need for graduates specialised in nuclear engineering by launching degree programme variants.
Like the other two, the Mechanical Engineering with Nuclear Engineering MEng programme differs from the parent degree only in requiring five specific elective modules to be taken in ME3 and ME4:

1. ME3 Introduction to Nuclear Engineering (ME)
2. ME3 Nuclear Chemical Engineering (CE)
3. ME4 Nuclear Thermal Hydraulics (CE)
4. ME4 Nuclear Reactor Physics (ME)
5. ME4 Nuclear Materials (MM).

You can transfer your registration to the Nuclear specialisation at any time until the first term of ME3. Modules (1) and (5) are taught by Mechanical Engineering, the others by Chemical Engineering (CE) and Materials (MM).

**Important:** The Nuclear Chemical Engineering module must be taken in ME3, and will not be available to you as an elective for credit until you have transferred degree registration.

To transfer, please write to the Senior Tutor. If you were previously registered for Mechanical Engineering with a Year in Industry, you can register for and graduate with a degree in Mechanical Engineering with Nuclear Engineering and a Year in Industry.

**Related Links**

*Brochure on nuclear programmes (pdf)*

**Transfer from MEng to BEng**

*Students who wish to join Innovation Design Engineering or another Master’s programme after their third year — or whose second year exam total suggests that they might not manage an MEng if they continue — can transfer registration and leave with an unaccredited BEng degree.*

The BEng programme offers a first-cycle exit for students who do not need to — or might fail to — complete an Integrated Masters programme.

The ‘BEng exit’ is intended primarily for students who have been accepted on the Innovation Design Engineering (IDE) double Masters (MA + MSc) programme, which we run jointly with the Royal College of Art. Students heading for IDE do not need either to complete the research-type individual project or to pass the advanced engineering science modules which make up most of ME4.

A small number of students who do not achieve 50% on examination aggregate in ME2 and are at risk of failing to graduate at MEng level need to transfer to BEng registration. Most will recover and pass the M-level core courses, but those who do not will still have satisfied the criteria for graduation after three years.

While the BEng is a valid degree it does not, in itself, provide an accredited base for CEng registration. Graduates who wish to change direction have a solid degree and a guaranteed set of adaptable skills. Those who do not can apply immediately to IMechE for IEng (Incorporated Engineer) status — which may or may not require an additional period of monitored, work-based learning.

**Why is our BEng programme unaccredited?**

Accreditation of the BEng programme would require a full individual project in ME3. Students who graduate at this point do not need it anyway, because either:

- They already have a place on a Masters course elsewhere (e.g. IDE itself), or
- They need more extra study to reach M level than a single additional year would provide.

The evidence of their individual attainment is, as always, provided by the degree class and transcript.

**Why isn’t it possible to enrol on the BEng programme directly?**

This is the country’s leading Mechanical Engineering department, attracting a high and increasing number of the very best candidates.
To maintain the quality of the programme we have to restrict our intake, but to provide the engineers which the profession needs we must maximise our output at potential Chartered Engineer level. We therefore do not accept entry from students who plan to leave at BEng level and — to ensure that candidates do not limit their choices elsewhere — we will no longer offer enrolment on the programme via UCAS.

**At what point may students transfer to the BEng programme?**

At the end of their second year, students have completed the most of the core engineering science modules and almost all of their learning in design. At this point potential IDE students will apply for entry and may transfer to BEng registration.

Year 3 includes two compulsory courses on core engineering science subjects at Masters (M) level — but BEng students need only pass these at 40% on aggregate, and can plan their learning accordingly.

**Related Links**

*Innovation Design Engineering MA/MSc course website*

**Transfer from BEng to MEng**

If your ME2 exam total was not high enough to keep you on the MEng programme but you still wish to graduate with an MEng degree, it may be possible to transfer back when you have successfully completed your third year.

Part II of our course is tough, and the results count for 25% of the final MEng degree marks (40% of those for BEng). To get back on track for MEng graduation, a student will need to do well in Part III. Fortunately, many do.

A student who achieves an aggregate total of at least 40% on the two core ME3 modules AND at least 55% on Part III examination total AND satisfies all other criteria (e.g. coursework) for progression to Part IV of the MEng degree may be invited to transfer back. This remains at the discretion of the Examiners.

**Important:** If you do not transfer back to MEng, please don’t assume that you can’t achieve a lower second class degree. Having just failed to make 50% in Part II but just failed to make 55% in Part III, it is certainly possible; such cases would be few, but ‘near misses’ would be considered carefully at the Examiners’ meeting.

**Graduation**

With your final-year taught modules examined and your project work written up and presented, the degree programme is over. Academic and administrative staff now integrate all of the module marks and any other relevant information to decide, at a final meeting, the degree class to award.

**The Examiners’ Meeting**

In reality a series of three meetings interspersed with fact-finding activities and reviews, this procedure leads to a final mark for graduating students and to a decision on progression for all others.

The process begins with the collection of all marks registered during the year for every student except, in some cases, those who have yet to complete their year abroad. Checks are made at this stage to ensure that each student has a mark for each module for which s/he was registered.

Verified marks are next input to a master database which contains the marks brought forward from previous years for each registered student. Finally a program which implements the progression rules for each student’s year of entry is run to update the database and arrive at a mark for the current year.

The First Examiners’ Meeting, attended by a core group of senior academics and administrators, takes an overview of the year’s results. Special cases are discussed and exam or coursework marks for modules which may require moderation are identified.
At the **Second Examiners' Meeting**, the same group considers preliminary outcomes for individual students, considering them anonymously. In particular, College regulations require every candidate who is within 2.5% of a degree class boundary (e.g. who has a mark between 67.5% and 70%) to be considered for promotion. At this stage mitigating circumstances are considered and a decision is made on:

1. Whether to carry the information forward to the following year
2. Whether to recommend to the final meeting that a graduating student is awarded an appropriate compensation in marks.

The two *External Examiners* — senior academics from other UK universities — now arrive. They spend a day reviewing all marked examination scripts and coursework marked during the year, concentrating on individual project reports and (for BEng students) DMT project results for students who might be considered for degree class promotion.

⚠️ **Warning:** The External Examiners may decide, for this reason or any other, that they wish to interview a student in person.

The **Final Examiners’ Meeting** is attended by all academic staff (who assess students and are therefore ‘Examiners’), the External examiners and a representative from Registry to advise on procedures and regulations. This is the occasion on which degrees and degree classes (*honours*) are formally agreed.

جاً **Note:** At no stage is the proportion of results in each degree class used to implement a ‘quota’, or taken into account in any way at all. In theory every student could get a first!

### The graduation ceremony

*On what the College calls Commemoration Day in late October after your final year, you will arrive at the graduation ceremony as an undergraduate, participate as a graduand and emerge as a graduate.*

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commemoration Day</td>
<td>Monday, 19 October, 2015</td>
<td>—</td>
</tr>
</tbody>
</table>

Invitations are issued during August. Attendance is not required — your degree will be awarded anyway! — but few graduands manage to resist the allure of the occasion and the pressure of family and peers.

### ME3 student prizes and awards

Various bequests, donors and sponsors *(including the Department itself)* have funded annual prizes to students for special achievement. These are awarded at an informal ceremony in the Department, to which parents are invited, on Graduation Day.

**Table 22: Annual awards offered**

<table>
<thead>
<tr>
<th>Award</th>
<th>Citation and value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frank Turner Wilson Third Year Prize</td>
<td>Three prizes, each up to the value of £500, for annual award to the most outstanding student in the third year of the undergraduate course in Mechanical Engineering. The awards to take into account academic achievement, practical abilities and contribution to departmental activities.</td>
<td>ME3</td>
</tr>
<tr>
<td>Governors’ BEng Prize in Mechanical Engineering</td>
<td>For annual award to the student of greatest merit in the final undergraduate year of the BEng course. Value £100.</td>
<td>ME3</td>
</tr>
<tr>
<td>Renishaw Prize</td>
<td>For annual award to the undergraduate student on the four year course in Mechanical Engineering who</td>
<td>ME3: normally one prize awarded to each student</td>
</tr>
<tr>
<td>Award</td>
<td>Citation and value</td>
<td>Notes</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Mechanical Engineering Student Centenary Prize</td>
<td>produces the best project during the third year of the course. Value £100 each.</td>
<td>in best DMT project group</td>
</tr>
<tr>
<td></td>
<td>For annual award to the undergraduate student who is adjudged to have submitted the most meritorious work in the third or final year. Value £200.</td>
<td>ME3–4</td>
</tr>
</tbody>
</table>

### The Dean’s list

_Because Imperial graduates compete in an international market, Imperial has matched the USA practice of recognising the top 10% of A-graded students in each year on a ‘Dean’s list’ — and marking this achievement on the transcript of graduating students._

The conditions are:

1. Achieving an overall mark of 70% or greater during the previous 12 months, and
2. Being placed within the top 10% (rounded up) of students in their cohort — e.g., of their year and programme.
Chapter 10

ME4 course information

Topics:

• The 4th Year Organiser
• Structure of the ME4 programme
• Key dates and attendance in ME4
• Choosing ME4 electives
• Electives available to ME4 this session
• The ME4 individual project
• Intellectual property
• Finding employment
• Further study
• Graduation
• ME4 student prizes and awards
• The Dean’s list

Entering ME4, the final year of the MEng programme, you have the educational base you need to be employed as an engineer. For most students, this year will be dominated by the search for employers — and by the individual project which will demonstrate your abilities to them.
The 4th Year Organiser

Dr Ambrose Taylor
Room 515
Email a.c.taylor@imperial.ac.uk

Structure of the ME4 programme

There are two core elements in ME4: the Individual Project, and the Advanced Application Course; for each, you must choose the instance of your choice. The remainder of the programme consists of electives.

The largest single element in ME4 is the Individual Project, which counts for 42% of the marks. The other core element is a double-length Advanced Applications course: all of these are constructed on the same template, but they specialise in different industrial sectors.

Related Links

- ME4 module descriptors
- Blackboard course materials

Key dates and attendance in ME4

The College has both a duty of care towards its students, and regulations to ensure that they follow the prescribed programme of studies. For these and other reasons there are a number of points during the year at which your absence will be reported to the Senior Tutor.

Attendance is monitored at:

- Project supervision meetings
- Occasional personal tutorials.

All coursework submissions are registered.

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn term begins</td>
<td>Monday, 5 October, 2015</td>
<td>—</td>
</tr>
<tr>
<td>Individual project list opens</td>
<td>Monday, 5 October, 2015</td>
<td>—</td>
</tr>
<tr>
<td>Individual project selection closes</td>
<td>Friday, 16 October, 2015</td>
<td>12:00</td>
</tr>
<tr>
<td>Commemoration Day</td>
<td>Monday, 19 October, 2015</td>
<td>—</td>
</tr>
<tr>
<td>Individual project definitions due</td>
<td>Friday, 6 November, 2015</td>
<td>17:00</td>
</tr>
<tr>
<td>ME3-4 elective selection closes</td>
<td>Friday, 20 November, 2015</td>
<td>17:00</td>
</tr>
<tr>
<td>Individual project plan report due</td>
<td>Friday, 13 November, 2015</td>
<td>12:00</td>
</tr>
</tbody>
</table>
### Event

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn term ends</td>
<td>Friday, 18 December, 2015</td>
<td>—</td>
</tr>
<tr>
<td>Spring term begins</td>
<td>Saturday, 9 January, 2016</td>
<td>—</td>
</tr>
<tr>
<td>Individual project progress report due</td>
<td>Friday, 5 February, 2016</td>
<td>12:00</td>
</tr>
<tr>
<td>Spring term ends</td>
<td>Wednesday, 23 March, 2016</td>
<td>—</td>
</tr>
<tr>
<td>Summer term begins</td>
<td>Saturday, 23 April, 2016</td>
<td>—</td>
</tr>
<tr>
<td>ME3-4 exams begin</td>
<td>Monday, 25 April, 2016</td>
<td>—</td>
</tr>
<tr>
<td>ME3-4 exams end</td>
<td>Friday, 6 May, 2016</td>
<td>—</td>
</tr>
<tr>
<td>Individual project report deadline</td>
<td>Friday, 3 June, 2016</td>
<td>12:00</td>
</tr>
<tr>
<td>Project seminar week begins</td>
<td>Monday, 6 June, 2016</td>
<td>—</td>
</tr>
<tr>
<td>Summer term ends</td>
<td>Friday, 24 June, 2016</td>
<td>—</td>
</tr>
</tbody>
</table>

**Attention:** For all coursework submission deadlines, key dates and late-breaking news associated with specific modules, please check the calendar on the corresponding Blackboard page.

**Caution:** You are required to attend College until the end of session because the External Examiners may wish to interview you during the last week. You should therefore avoid any commitment — other than those forming part of the course — which could prevent you attending College during term-time.

### Related Links

- [Term dates for next two years](#)
- [Choosing ME4 electives](#)
- [Registering for ME4 electives](#)

### Choosing ME4 electives

The selection rules for ME4 electives are designed to provide a broad spread of knowledge and skills, while providing the necessary minimum proportion of M-level curriculum for an accredited MEng degree.

### Registering for ME4 electives

The elective courses offered change from year to year and because space and timetable slots are limited, allocating places can be difficult. Although most students succeed in getting the electives they hoped for, the selection process can be difficult and must be started early.

1. Register for Horizons courses early in the previous summer term. Places may still remain on certain modules: please check the Imperial Horizons website if you need to.
2. After summer examinations are over, registration will open for **ME electives only**. Register your preliminary choices at any time before the deadline, using DSS: this is **not** a first-come, first-served process.

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME3-4 elective selection closes</td>
<td>Friday, 20 November, 2015</td>
<td>17:00</td>
</tr>
</tbody>
</table>

**Warning:** If you choose more than five electives, your preferences will not be taken into account at all! You are not making a final commitment, but we must know your preferences for our planning.

**Note:** Staff and timetable changes beyond our control may still affect the electives offered: places on your preferred courses cannot be guaranteed or confirmed.

**Important:** Some modules have limited capacity and there **will** be a registration process for them. You will be informed of this by e-mail and/or in the first lecture.
3. During the autumn term you may attend other electives for which you are not already registered and may be able to register for them via the UG Office.
   - If you were not successful with all your previous choices, you will now be able to select other electives where places are available, in order to satisfy the selection rules.
   - If you were successful with all your previous choices but wish to change them or to add to them, discuss your plans with your personal tutor first.

4. Your Advanced Applications module can be chosen after introductory presentations when the session begins.

5. In the middle of ME4 spring term you will be asked to complete an Exam Registration form, indicating the courses you have selected and attended throughout the year.

   **Warning:** Only marks for electives listed on the Exam Registration Form can be counted towards the total Examination mark. It is your responsibility to select enough modules to follow the prescribed course, and complete any necessary coursework.

### Rules for selecting ME4 electives

*To graduate with an MEng in Mechanical Engineering you must, in addition to your ME4 project, complete one of the Advanced Applications courses and at least two other M-level electives.*

#### General conditions

1. No credit will be given for any elective unless you have registered for it.
2. No more than **one** Horizons elective in total can count towards your degree.
3. No more than **two** IDX electives in total can count towards your degree.
4. No more than **three** Design and Management electives in total can count towards your degree.

To graduate with an MEng in Mechanical Engineering with Nuclear Engineering, your chosen electives must include **three** M-level ones:

- Nuclear Materials
- Nuclear Thermal Hydraulics **and**
- Nuclear Reactor Physics.

### Electives available to ME4 this session

*This list will be updated from year to year.*

#### Related Links

- **H-level Technical electives** on page 88
- **H-level Design and Management electives** on page 89
- **H-level Humanities and Language electives**
- **Registering for elective modules using DSS** on page 90

### M-level Advanced Applications electives

*Double-length courses on industry-specific topics offered to Mechanical Engineering students this year.*

<table>
<thead>
<tr>
<th>Code</th>
<th>Module</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME4-MAET</td>
<td>Aircraft Engine Technology</td>
<td>12</td>
</tr>
<tr>
<td>ME4-MMPT</td>
<td>Metal Processing Technology</td>
<td>12</td>
</tr>
<tr>
<td>ME4-MMTT</td>
<td>Mechanical Transmission Technology</td>
<td>12</td>
</tr>
<tr>
<td>ME4-MVPT</td>
<td>Vehicle Propulsion Technology</td>
<td>12</td>
</tr>
</tbody>
</table>

#### Related Links
M-level Technical electives

Master’s level electives on technical subjects offered to Mechanical Engineering students this year.

<table>
<thead>
<tr>
<th>Code</th>
<th>Module</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME4-MASA</td>
<td>Advanced Stress Analysis</td>
<td>7</td>
</tr>
<tr>
<td>ME4-MCNTL</td>
<td>Advanced Control</td>
<td>7</td>
</tr>
<tr>
<td>ME4-MAVE</td>
<td>Advanced Vibration Engineering</td>
<td>7</td>
</tr>
<tr>
<td>ME4-MCMB</td>
<td>Combustion</td>
<td>7</td>
</tr>
<tr>
<td>ME4-MCFD</td>
<td>Computational Fluid Dynamics</td>
<td>7</td>
</tr>
<tr>
<td>ME4-MFEAA</td>
<td>Finite Element Analysis and Applications</td>
<td>7</td>
</tr>
<tr>
<td>ME4-MNDP</td>
<td>Interfacing and Data Processing</td>
<td>7</td>
</tr>
<tr>
<td>ME4-MNURP</td>
<td>Nuclear Reactor Physics</td>
<td>7</td>
</tr>
</tbody>
</table>

Related Links

ME4-MASA module description
ME4-MCNTL module description
ME4-MAVE module description
ME4-MCMB module description
ME4-MCFD module description
ME4-MFEAA module description
ME4-MNDP module description
ME4-MNURP module description

M-level IDX electives

The modules offered by other Faculty of Engineering departments to ME4 students this year. They are all classed as M-level when taken on this cross-disciplinary basis, and will generally require some preparatory study.

<table>
<thead>
<tr>
<th>Code</th>
<th>Module</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE3-414</td>
<td>Applications of Fluid Dynamics</td>
<td>7</td>
</tr>
<tr>
<td>BE4-HHCARD</td>
<td>Computer Assistive and Rehabilitative Devices</td>
<td>7</td>
</tr>
<tr>
<td>CHE-429</td>
<td>Nuclear Thermal Hydraulics</td>
<td>7</td>
</tr>
<tr>
<td>CHE-431</td>
<td>Transport Processes for Biological Systems</td>
<td>7</td>
</tr>
<tr>
<td>CO4-22</td>
<td>Computational Finance</td>
<td>7</td>
</tr>
<tr>
<td>EE4-47</td>
<td>Modelling and Control of Multi-Body Mechanical Systems</td>
<td>7</td>
</tr>
<tr>
<td>EE4-50</td>
<td>Sustainable Electrical Systems</td>
<td>7</td>
</tr>
<tr>
<td>MSE-312</td>
<td>Nanomaterials</td>
<td>7</td>
</tr>
<tr>
<td>MSE-315</td>
<td>Biomaterials</td>
<td>7</td>
</tr>
<tr>
<td>MSE-414</td>
<td>Nuclear Materials</td>
<td>7</td>
</tr>
</tbody>
</table>
Other courses offered by Faculty departments and listed on the IDX website have not been accepted for Mechanical Engineering students — but this situation can change. Previously unavailable courses are sometimes offered, and occasionally one is withdrawn.

Any student interested in taking, for credit, a course offered to IDX but not yet listed here, can apply to the Director of Undergraduate Studies before the previous session ends. With departmental approval, it may be possible for one or two students to do so on a trial basis.

Related Links

IDX courses

The ME4 individual project

An individual project, requiring the student to report identifiable original work or analysis, is an essential component of any Integrated Master’s (MEng) degree programme. The ME4 Individual Project module is in effect a scaled-down Master’s project, forming the largest component of every MEng student’s final year.

Mechanical Engineering projects can be experimental, computational, analytical, design-centred — or any combination of these. An accredited MEng project should have a strong engineering content, using knowledge and skills acquired in previous years of the programme and should, ideally, refer to and integrate topics from other areas of engineering. It may also involve non-technological, e.g. economic, safety and sustainability aspects.

Each individual project is supervised by an academic member of staff and most are conducted within a research group. An associate supervisor is nominated to take over in an emergency. A fundamental requirement, however, is that the student takes full responsibility for the work.

Individual Project Presentation

The final stage of the MEng Degree is the Individual Project Seminar. Attendance for the whole of the assigned presentation session is mandatory for all students.

The final stage of the MEng Degree is the Individual Project Seminar. Each student will have a 25 minute slot during which they will deliver a presentation allowing time for questions from the audience. This is a significant element of the undergraduate degree and should be treated as a professional activity. Students must ensure that they are prepared in advance and are encouraged to ask questions of the other students.

Important: You are required to attend the whole of your session (i.e. the whole morning session or the whole afternoon session). Penalties will be applied to students who do not attend the whole session.

Intellectual property

Project work may generate — or may use — ideas or products which are ‘patentable’. On registering as a student at Imperial, you agreed to the College’s Intellectual Property policy: this limits how far you can protect intellectual property, but also limits your responsibility for maintaining that of others.

If your project is supported — with or without funding — by an external collaborator, your work on it may require information which the collaborator does not wish to divulge publicly. If so, your supervisor will arrange for a standard College contractual agreement to be set up and will make you fully aware at the outset of any potential limitations on your work: for example, a DMT project poster may require your project sponsor’s prior approval of its content, and this could take several weeks.

The agreement may just relate to confidentiality (a non-disclosure agreement, NDA) but it may be significantly broader.
**Warning:** Never sign any such agreement, or any similar agreement that could potentially make you personally liable.

A College representative will sign for you. As part of your initial registration at College, you agreed to be bound by the terms of student IP Policy; the College therefore signs agreements on your behalf. You may be asked to **acknowledge** the terms of an agreement, but liability still rests with the College.

### Finding employment

*For many students, ME4 is dominated by the search for employment. To supplement the advice given by the Careers Centre, members of our departmental Industrial Academic Board have offered advice specifically oriented towards the engineering and related industries.*

The Industrial Academic Board (IAB), which meets twice a year, brings together representatives of the department with representatives from a few of the companies which employ our graduates. Its aim is to ensure that graduates are well prepared for the needs of industry, while keeping employers abreast of developments in our teaching programmes.

**Related Links**

- College Careers Service website.
- College Careers Service website.

### Technical interviews

*Some basic do’s and don’ts for success in technical interviews for employment in engineering.*

#### Preparation: before you attend

- Make sure you understand the role you are applying for: plan for questions on technical and people aspects; challenges that the employer is facing; health, safety, environment and legislation.
- Ask yourself what you have to offer: what are your skills/competencies? How is your background relevant to the role?
- Ask before the interview (usually your contact would be from the HR dept, but not always) if there is a particular structure to it, or aspects that will be covered; this may help to focus your mind.
- Review background information on the financial status of the company applied to (all company accounts are public domain).
- Read up on the relevant industry: what are the challenges? Does your prospective employer have any key suppliers and customers? What are their strengths?
- Ensure you are up to date with at least public-domain knowledge of the particular company interviewing you. It should be obvious by your questioning that you have visited their website and are up to date with latest public announcements. Perhaps pick up on something of interest from the website and ask them a question on it.
- Make sure you understand project costing and show an awareness of the need to keep projects within budgets. At least be able to describe how you would arrive at a project cost — what would you include and exclude.
- Check any work permit or visa requirements which depend upon nationality, and understand what (if any) help an employer might give. This information is usually freely available on company recruitment websites or in application packs.
- Prepare some questions to ask on, for example, terms and conditions, mobility, progression, training provided, whether the company support development to CEng and, if so, how…
- Think about what development needs you have (everyone has them — at every stage of their careers).
- Recognise the need to demonstrate reasonable technical depth and breadth at the interview: don’t forget the fundamentals.
- Remember: the interview is two-way, and they are actually being interviewed by you as well. Listen to what they are saying critically and think about whether you would be comfortable working for them.
At the interview

- Arrive on time: 10 minutes early is a good guide. If you expect to be held up call your contact as soon as possible.
- Dress appropriately.
- Turn off your mobile, or set it to silent.
- Be positive and enthusiastic: you need to convey that you actually want the job.
- Remember body language and posture; sit upright and look alert. Make good eye contact with the interviewers. Try to avoid using poor language, slang or pause-words (“like” etc. ...) during your discussion.
- Be prepared to talk about a University project — both its technical aspects and the softer aspects such as team working. This approach can be used to put the candidate at ease and to get them talking about something they feel comfortable with. What was the project about? What hurdles did you overcome? Did it work? What were the findings/benefits? Be prepared to communicate this for, say, 5 minutes.
- Formulate a clear idea about how you would like your career to develop — hopefully it will match the company’s. Consider technical and managerial routes for career progression but also career enrichment opportunities. Be realistic about your ambitions: we can’t all be — or wouldn’t want to be — the CEO.
- Don’t worry about being nervous. Having some nerves is probably good and is perfectly natural — the interviewers will understand.
- Ask for clarification if you don’t understand a question.
- Ask intelligent questions about the job, company, training or industry.
- Be yourself. They want to employ you, not somebody else. If you don’t get the role applied for they may consider that you are better suited to other roles (which may not be widely advertised).
- Discussions about salary and benefits usually occur at the end. Only initiate a discussion if the interviewer omits to do so.
- DON’T regurgitate details from the company website during the interview.
- DON’T expect to derive complex equations.
- DON’T worry if you can’t answer a question: it’s best to be honest and respond that you don’t know, or are not sure. But do follow up with a question or two: this shows interest and will improve your understanding, if nothing else.
- DON’T be negative about past internships or industrial experiences; recognise positive points and what you have gained from the experience.
- DON’T rely on your CV to do the selling for you. No matter how good your grades, scores and qualifications are, you will need to sell yourself to the interviewers.

Assessment centres

*Information about assessment centres and tips on doing well at them.*

Assessment centres may be preceded by a telephone interview. If so, don’t just phone — see elsewhere for advice, and prepare.

**Preparation: before you attend**

Find as much as you can about the assessment centre in advance. The company should provide some briefing information; if they don’t or you feel that you need further information, then just contact them and ask. Each company’s format will differ and the following is provided for general guidance.

- Make sure you understand the challenges faced by the employer and those relevant in their industry. There should be plenty of information readily available on the internet — don’t just repeat details from the company website.
- Prepare to talk about some of the softer skills that are needed in an employee — if possible, with some examples based on your experiences (working in a team, working with difficult people, how to meet deadlines etc.).
• Prepare to discuss Health and Safety: What is your approach? What matters to the employer? Do you have any examples?

Assessment centres are usually facilitated by the company HR department, with staff from the company attending to act as observers. At the end of the assessment centre the company observers meet to provide an assessment of the candidates and to make recommendations. The observers will have been trained prior to the event and will be working to a well defined set of assessment criteria.

The event itself will typically involve some or all of the following elements:

- Interview;
- Team event;
- Numerical and verbal reasoning tests, psychometrics etc.;
- Presentation.

**Interview**
Scope/guidance should be provided before joining the assessment centre: see elsewhere for advice.

**Team event**
One scenario could be that teams of four are formed and the ‘team event’ spans the day. This is an attempt to replicate a working day where the flow of work will be interrupted. Expect a brief to be provided: for example it may include some data to be assessed along with other disparate pieces of information, with a deadline to discuss at a meeting at some point later in the day. Expect to be provided with some late-breaking news that may have some impact on your conclusions. Some time is usually provided for your team to have discussions during the day, you may then have to discuss your finding in a meeting, whilst being observed. The purpose of the observers is to try to obtain an understanding of your behaviour and interaction within a group.

- Raise points and contribute, even if it is to add strength to a point raised by another member of the team.
- Allow others to speak.
- If someone is reticent to speak then try to bring them into the conversation by asking for their views.
- Be prepared to summarise the group’s understanding at some stage, and seek agreement.
- If somebody else summarises for the group then be prepared to ask questions to test the findings
- DON’T be afraid to say anything.
- DON’T feel you have to be the loudest or most talkative to be noticed.

**Numerical and verbal reasoning tests, psychometrics**
Don’t worry about the numerical and verbal reasoning tests. Students often do much better at these than staff in post.

**Presentation**
This provides you with an opportunity to display your ability to interpret information in a short period of time, and to present some concise conclusions. You will be provided with time to review data and prepare a 10 min presentation, usually using PowerPoint. Note; some companies will require a longer presentation, up to 20 minutes and to senior managers followed by technical and non-technical questions.

- Work to your brief (read it **carefully**).
- Introduce yourself, your topic, time allocation etc. — and stick to your time.
- Specify whether you would prefer to be questioned during the presentation, or after it.
- Present concise, clear slides.
- Ensure that the presentation starts with a clear statement of what you are providing in your presentation, i.e. a short summary of the question or issue under discussion.
- State a clear conclusion.
• Be prepared to be challenged on your conclusions — so think about the alternative view.
• Aim on providing a professional presentation even though time may well be very limited.
• DON’T Look at slides or the computer too much during the presentation: talk to the audience and make good eye contact.
• DON’T Be defensive when you answer .
• DON’T Be too soft-spoken: a more forceful voice projects confidence
• DON’T Answer questions with a simple “yes” or “no”. Explain whenever possible. Reviewers check not only how much you understand or know but also how you respond to a question.
• DON’T let your mobile phone sound during the presentation — switch it off or set it to silent.

There is normally a wash-up session at the end, to which candidates are not invited. Observers try to identify facts about each candidate during the day, usually facilitated by HR. It’s not foolproof but does provide a means of assessing candidates on the day.

Further study

Many students find that the sense of individual achievement and discovery generated by a successful ME4 Individual Project gets them hooked on research. Since you are already here and your track record is known it will certainly be easier to find a project which suits you — even if it is offered in a different department.

Probably the best place to start looking for a PhD project will be with your ME4 (or perhaps ME3) project supervisor. Your personal tutor, and PhD students with which you will have made contact through their work as GTAs, are other good sources of inside information: ask around. Projects are posted publicly on Blackboard, the Departmental web pages and on a several open web sites.

Imperial runs a Postgraduate Open Day each December. Each department has an information stand with staff who can advise you on available research opportunities and Masters programmes. Designed primarily for visitors from outside the College who plan to study here, this event can also be a useful source of information if you are thinking of studying in another department or even another university.

Related Links

PhD studentships offered on Department website
Imperial College Postgraduate Open Day
FindAPhD website
Find PhD opportunities on the jobs.ac.uk website
Email Postgraduate Secretary (Claire Dempster, Rm. 549)
PhD studentships offered on Department website
Imperial College Postgraduate Open Day
FindAPhD website
Find PhD opportunities on the jobs.ac.uk website
Email Postgraduate Secretary (Claire Dempster, Rm. 549)

Graduation

With your final-year taught modules examined and your project work written up and presented, the degree programme is over. Academic and administrative staff now integrate all of the module marks and any other relevant information to decide, at a final meeting, the degree class to award.

The Examiners’ Meeting

In reality a series of three meetings interspersed with fact-finding activities and reviews, this procedure leads to a final mark for graduating students and to a decision on progression for all others.
The process begins with the collection of all marks registered during the year for every student except, in some cases, those who have yet to complete their year abroad. Checks are made at this stage to ensure that each student has a mark for each module for which s/he was registered.

Verified marks are next input to a master database which contains the marks brought forward from previous years for each registered student. Finally a program which implements the progression rules for each student’s year of entry is run to update the database and arrive at a mark for the current year.

The First Examiners’ Meeting, attended by a core group of senior academics and administrators, takes an overview of the year’s results. Special cases are discussed and exam or coursework marks for modules which may require moderation are identified.

At the Second Examiners’ Meeting, the same group considers preliminary outcomes for individual students, considering them anonymously. In particular, College regulations require every candidate who is within 2.5% of a degree class boundary (e.g. who has a mark between 67.5% and 70%) to be considered for promotion. At this stage mitigating circumstances are considered and a decision is made on:

1. Whether to carry the information forward to the following year
2. Whether to recommend to the final meeting that a graduating student is awarded an appropriate compensation in marks.

The two External Examiners — senior academics from other UK universities — now arrive. They spend a day reviewing all marked examination scripts and coursework marked during the year, concentrating on individual project reports and (for BEng students) DMT project results for students who might be considered for degree class promotion.

**Warning:** The External Examiners may decide, for this reason or any other, that they wish to interview a student in person.

The Final Examiners’ Meeting is attended by all academic staff (who assess students and are therefore ‘Examiners’), the External examiners and a representative from Registry to advise on procedures and regulations. This is the occasion on which degrees and degree classes (honours) are formally agreed.

**Note:** At no stage is the proportion of results in each degree class used to implement a ‘quota’, or taken into account in any way at all. In theory every student could get a first!

### The graduation ceremony

*On what the College calls Commemoration Day in late October after your final year, you will arrive at the graduation ceremony as an undergraduate, participate as a graduand and emerge as a graduate.*

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commemoration Day</td>
<td>Monday, 19 October, 2015</td>
<td>—</td>
</tr>
</tbody>
</table>

Invitations are issued during August. Attendance is not required — your degree will be awarded anyway! — but few graduands manage to resist the allure of the occasion and the pressure of family and peers.

### ME4 student prizes and awards

Various bequests, donors and sponsors (including the Department itself) have funded annual prizes to students for special achievement. These are awarded at an informal ceremony in the Department, to which parents are invited, on Graduation Day.

**Table 23: Annual awards offered**

<table>
<thead>
<tr>
<th>Award</th>
<th>Citation and value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering Student Centenary Prize</td>
<td>For annual award to the undergraduate student who is adjudged to have submitted the most meritorious work in the third or final year. Value £200.</td>
<td>ME3–4</td>
</tr>
<tr>
<td>Award</td>
<td>Citation and value</td>
<td>Notes</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Bramwell Medal</td>
<td>For annual award to the student at the top of the Final year class list in Mechanical Engineering. Medal.</td>
<td>ME4</td>
</tr>
<tr>
<td>Governors’ MEng Prize in Mechanical Engineering</td>
<td>For annual award to the student of greatest merit in the final undergraduate year of the MEng course. Value £100.</td>
<td>ME4</td>
</tr>
<tr>
<td>Henry Ford II Scholar Award in Mechanical Engineering</td>
<td>For annual award to the student with the best academic record based on the final first degree examinations in Mechanical Engineering; £1000 to be awarded to the student at the end of his/her degree course, and the remaining £1500 to be made available to the department for allocation to the same student for an approved academic purpose.</td>
<td>ME4</td>
</tr>
<tr>
<td>Institution of Mechanical Engineers Prize</td>
<td>For annual award to the student in the final year of an accredited degree course who completes an outstanding research, development or design project in Mechanical Engineering. Value £100.</td>
<td>ME4</td>
</tr>
</tbody>
</table>

**The Dean's list**

*Because Imperial graduates compete in an international market, Imperial has matched the USA practice of recognising the top 10% of A-graded students in each year on a 'Dean's list' — and marking this achievement on the transcript of graduating students.*

The conditions are:

1. Achieving an overall mark of 70% or greater during the previous 12 months, and
2. Being placed within the top 10% (rounded up) of students in their cohort — e.g., of their year and programme.
Chapter 11

The year abroad

Topics:
- Student Exchange Coordinator
- Exchange partners
- Academic and other pre-requisites
- The Year Abroad application process
- The study plan
- Completing a Year Abroad

The Department runs exchange agreements with a several international universities. These arrangements allow selected students to replace ME4 with a year of study abroad, at institutions carefully chosen to offer equivalent degrees; they also bring us overseas students from programmes with different styles of teaching.

The year abroad programme provides a fantastic opportunity to experience engineering education in another country and a different cultural setting. It is a unique opportunity to travel and get to learn in a different environment. Demonstrating versatility and adaptability as well as communication and language skills can be a key advantage when you seek employment.

Another benefit is that while abroad you can save money. Living costs at most exchange partner universities are less than in London and the college waives a proportion (under review) of its fees for exchange students. No tuition fees need be paid at the host institution: you remain registered as an Imperial College Student.

You can also apply for grants, e.g. Erasmus mobility grants, to cover travel and other costs.

Related Links

Placements Abroad Handbook (pdf)
Student Exchange Coordinator

The Student Exchange Coordinator is responsible for all students participating in the university exchange programme.

The Role of the Student Exchange Coordinator is:

- To select the students that will take part in the exchange programme.
- To advise incoming and outgoing students, before and during the exchange, on academic issues such as permissible course choice and credit and course requirements.
- To approve learning agreements submitted by students on exchange.
- To review exams marks and transcripts of incoming and outgoing exchange students.

Dr Stelios Rigopoulos
Room 620
s.rigopoulos@s.rigopoulos@imperial.ac.uk

Exchange partners

The Mechanical Engineering with a Year Abroad programme offers exchanges both with European universities (via Erasmus) and, on the basis of agreements at institutional level, with non-European universities. It is not possible to arrange ad hoc transfers to any other university.

European universities

These exchanges are managed as part of the Erasmus Exchange Programme:

1. Rheinisch-Westfälische Technische Hochschule, Aachen (‘RWTH Aachen’, Germany)
2. Ecole Centrale Lyon (France)
3. Ecole Centrale Paris (France)
4. Technische Universiteit Delft (‘TU Delft’, Netherlands)
5. Eidgenössische Technische Hochschule Zürich (‘ETH Zurich’, Switzerland).

Non-European universities

These exchanges take place within institutional exchange agreements made at University level:

1. University of Melbourne (Australia)
2. University of Sydney (Australia)
3. University of California (US)
4. National University of Singapore (‘NUS’).
Related Links

Aachen University website
EC Lyon website
EC Paris website
TU Delft website
ETH Zurich website
UC Melbourne website
University of California website
National University of Singapore website

Academic and other pre-requisites

Students are expected to be of a good academic standing before taking a year abroad — but it's not just academic qualities which are important. Both exchange partners need to be sure that you will be right for the programme and that it will be right for you.

The requirements that this department imposes are:

- To be registered on the Mechanical Engineering with a Year Abroad (H304) programme (if you were not on H304 initially, you can still — even in ME3 — change your registration by application to the Senior Tutor)
- To have a minimum overall grade total of 65% on completing ME3
- For partner universities teaching in other languages — i.e. Aachen, Zurich, Lyon and Paris — to demonstrate Humanities level 4 or equivalent language skills
- To show evidence of being a good ambassador for Imperial College London and its exchange programme
- To demonstrate motivation and organisational skills
- To complete, independently, all the necessary formalities:
  - Registering
  - Presenting an acceptable study plan
  - Completing the application form etc..

⚠️ Caution: Satisfying these requirements does not guarantee acceptance by the partner university — which retains the right to refuse any application, and occasionally does so.

Related Links

Information on co-curricular language courses

The Year Abroad application process

Although many students register for the Year Abroad course on arrival, not all will go. Some will change their minds: some will not be academically strong to face the challenge. Finally, the need to balance incoming and outgoing student numbers makes a careful selection process essential.

Figure 1: The application process for exchange programmes on page 112 shows an approximate timeline for the entire process. The procedure for an individual student depends on whether the exchange will be within Europe (facilitated by Erasmus) or farther afield.
Applying for an exchange outside Europe

The exchange schemes for institutions farthest from the UK are also the most popular and competitive. Once the Department has selected its candidates, special administrative procedures related to immigration/visa issues etc. require the involvement of the International Office, and slow the process down.

Demand for exchanges to universities outside Europe is very high: there are often 10 candidates for each place at the University of California and 3-4 for each at the University of Melbourne. A careful selection process is therefore essential, but the nomination must be forwarded to the Registry’s International Office by late November so that they can run the student through the administrative application process by late January/early February.

1. Attend the ME3 information session (also open to interested students from ME1–2) in week 2 or 3. This meeting presents general information about exchanges explains the selection process.

2. Write a motivation letter to the exchange coordinator, summarising your motivation for being selected. The deadline for receipt is usually one week after the information session.
   a) Explain why you want to go
   b) Suggest why you would be a good representative of Imperial
   c) Where do you want to go, and why?
   d) How does it fit in with your career plans?
   e) Why do you deserve it?

3. Soon after the deadline for submission of these letters, three candidates selected on the basis of them will be invited for interview.

4. Interviews take place about three weeks after submission. The panel will consist of at least three staff members including the exchange coordinator, at least one other academic and either a further academic or a member of the UG Office administrative staff.

5. As soon as possible afterwards, you will be told whether you have been selected for nomination.

Following nomination, the successful candidate(s) are further guided through the application process by the International Office. The exchange coordinator remains in touch to ensure that the student produces an acceptable study plan and completes a Learning Agreement.

Applying for an exchange within Europe

These exchanges are handled within the more straightforward Erasmus framework. There is usually no shortage of available places and all outgoing students can attend their university of choice; if not, a procedure similar to that for exchanges outside Europe must be followed.
1. After the initial ME3 information session, indicate your interest to the exchange coordinator.

2. Following the second, European exchange information session in January/February, review the information on available courses (and applicable restrictions) at your chosen institution.

3. Complete the application forms, devise a study plan and send them to the exchange coordinator so that a Learning Agreement can be completed and signed.

4. Submit the application (deadlines are usually around April/May for start in September/October) and await confirmation and acceptance by the partner institution. The host institution always reserves the right to reject any application — they are not obliged to accept any of our candidates.

5. Following acceptance, your instructions as an incoming exchange student will issued by the host institution.

Related Links

Erasmus website

The study plan

An essential component of any inter-university exchange is a Study Plan. This is agreed by both universities so that credit can be transferred back to the host (degree-awarding) university — i.e. Imperial.

The general requirements for a student studying abroad, who seeks to transfer credit back to count towards his/her Mechanical Engineering H304 degree back at Imperial College are:

1. The candidate completes a work load worthy of 60 ECTS credit points
2. 80% of the subjects taken for credit have engineering content and the majority of those are at Masters level
3. Within that 80%, the student must complete a final year project worth at least 14 ECTS
4. There may be particular restrictions associated with each partner university.

Note: The department may, depending on the specific circumstances arising at a particular exchange partner institution, accept variations to these conditions. It can only participate in credit-transferring exchanges, i.e. a student cannot go abroad without transferring credits back.

Related Links

The Imperial Success Guide: everything you need to support the transition from school to university

Completing a Year Abroad

It is obviously very important that Imperial receives an official transcript of results from the partner university as soon as possible after completion of the year abroad.

Warning: It is your responsibility to ensure that the transcript is sent to the exchange coordinator.

If it arrives any later than early September, we cannot guarantee a place at the graduation ceremony — for which places for exchange students are, normally, reserved.
Chapter 12

Schemes for the award of Honours

Topics:
- Progression and graduation
- MEng in Mechanical Engineering, 2015-16
- MEng in Mechanical Engineering with Nuclear Engineering, 2015-16
- BEng in Mechanical Engineering, 2015-16

These schemes define the conditions under which students may progress through each programme and accumulate marks for the classification of their degree.

From time to time, these schemes change. Nevertheless, each student carries with them the scheme which was in force when they began the programme: only students who began after any change will be affected by it.
Progression and graduation

The Sub-committee of Examiners in Mechanical Engineering decides annually whether each student should progress to the next year of the programme or, after the final year, to graduation. Although the examiners will exercise discretion in individual cases, their decision is based primarily on coursework and examination marks.

The decisions available to the Examiners for each student are:

**Pass**
In order to progress normally, a student must satisfy the requirements for each Part of the programme, as shown in the following tables.

**Deferred**
A student who achieves the pass mark in coursework but who marginally fails to achieve a pass mark in any individual Part I or II examination will normally, at the discretion of the Examiners, be offered one or more Supplementary Qualifying Tests (SQTs) in September if s/he:
1. Achieved the stated pass mark on Examination Total, but failed to achieve the pass mark in up to two individual examinations; OR
2. Failed to achieve the stated pass mark on Examination Total and failed to achieve the pass mark in up to two individual examinations, and could achieve the stated pass mark on Examination Total by achieving, in each SQT, a mark at least 10% higher than the stated pass mark for each failed examination.

**SQT and pass**
At the discretion of the Examiners a student may progress, following a Deferred decision, if the mark for each SQT taken under condition 2 is at least 10% higher than the pass mark for the corresponding examination which the student had failed. If the examination aggregate mark would thereby increase from below to above 40%, it is capped at 40%.

**Resit**
A student who had achieved the pass mark for coursework but does not pass the examinations for any Part of the BEng or MEng may re-enter the failed examination on one further occasion.

**Fail**
A student who fails to achieve the pass mark for coursework, or who is no longer eligible to re-sit a failed examination, is required to withdraw.

**MEng in Mechanical Engineering, 2015-16**

This is regarded as the basic scheme, on which all others are variants.

One mark contributes equally towards the degree in every year except the first, and the final degree class is determined by simple addition of marks awarded in Parts II to IV. Thus the four year totals, when expressed as percentages, contribute successively zero, 25%, 37.5% and 37.5% towards the total degree mark.

**Part I**

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>140</td>
<td>40%</td>
<td>12</td>
</tr>
<tr>
<td>Thermofluids</td>
<td>140</td>
<td>40%</td>
<td>10</td>
</tr>
<tr>
<td>Solid Mechanics</td>
<td>140</td>
<td>40%</td>
<td>10</td>
</tr>
<tr>
<td>Materials</td>
<td>70</td>
<td>40%</td>
<td>5</td>
</tr>
</tbody>
</table>
### Schemes for the award of Honours

#### Examination

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechatronics</td>
<td>70</td>
<td>40%</td>
<td>5</td>
</tr>
<tr>
<td>Design and Manufacture</td>
<td>70</td>
<td>40%</td>
<td>5</td>
</tr>
<tr>
<td><strong>EXAMINATION TOTAL</strong></td>
<td><strong>630</strong></td>
<td><strong>40%</strong></td>
<td><strong>47</strong></td>
</tr>
<tr>
<td><strong>PART I TOTAL MAXIMUM MARKS</strong></td>
<td><strong>800</strong></td>
<td></td>
<td><strong>60</strong></td>
</tr>
</tbody>
</table>

**Note:** A student who achieves the pass marks shown will qualify for progression to Part II. The marks will be noted on the final degree transcript and used to determine the Dean’s List, but will not be counted towards the final degree classification.

**Note:** If a candidate passes Thermofluids or Solid Mechanics on aggregate having failed either of the two constituent papers the Examining Board may, against criteria determined on a year by year basis, record a Deferred Decision and require a Supplementary Qualifying Test.

#### Part II

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>220</td>
<td>40%</td>
<td>9</td>
</tr>
<tr>
<td>Thermofluids</td>
<td>330</td>
<td>40%</td>
<td>14</td>
</tr>
<tr>
<td>Solid Mechanics</td>
<td>330</td>
<td>40%</td>
<td>14</td>
</tr>
<tr>
<td>Mechatronics</td>
<td>110</td>
<td>40%</td>
<td>5</td>
</tr>
<tr>
<td>Design, Manufacture and Management</td>
<td>220</td>
<td>40%</td>
<td>7</td>
</tr>
<tr>
<td><strong>EXAMINATION TOTAL</strong></td>
<td><strong>1210</strong></td>
<td><strong>40%</strong></td>
<td><strong>49</strong></td>
</tr>
<tr>
<td>COURSEWORK: Comprising Mathematics 6, Thermofluids 48, Solid Mechanics 62, Mechatronics 44, Computing 100, Design and Manufacture 100 Technical Presentation Skills 30.</td>
<td>390</td>
<td>40%</td>
<td>11</td>
</tr>
<tr>
<td><strong>PART II TOTAL MAXIMUM MARKS</strong></td>
<td><strong>1600</strong></td>
<td></td>
<td><strong>60</strong></td>
</tr>
</tbody>
</table>

**Note:** A student who fails to achieve 50% on Part II Examination Total will be required to transfer to BEng degree registration.

#### Part III

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine System Dynamics</td>
<td>200</td>
<td>)40%</td>
<td>12</td>
</tr>
<tr>
<td>Thermodynamics and Energy</td>
<td>200</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Five other courses chosen within specified constraints</td>
<td>each 200</td>
<td>—</td>
<td>30</td>
</tr>
<tr>
<td><strong>EXAMINATION TOTAL (see note)</strong></td>
<td><strong>1400</strong></td>
<td><strong>40%</strong></td>
<td><strong>42</strong></td>
</tr>
<tr>
<td>COURSEWORK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering Ethics</td>
<td>30</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>
### Schemes for the award of Honours

#### Examination Results

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature Research Project</td>
<td>170</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Design, Make and Test Project</td>
<td>800</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td><strong>COURSEWORK TOTAL</strong></td>
<td>1000</td>
<td>40%</td>
<td>18</td>
</tr>
<tr>
<td><strong>PART III TOTAL MAXIMUM MARKS</strong></td>
<td>2400</td>
<td></td>
<td>60</td>
</tr>
</tbody>
</table>

**Note:** An MEng student who achieves a Part III examination total of less than 50% while satisfying all other criteria for progression to Part IV will be invited to graduate with the award of a BEng Degree.

#### Part IV

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Advanced Applications module</td>
<td>400</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Five modules chosen within specified constraints</td>
<td>each 200</td>
<td></td>
<td>≥32</td>
</tr>
<tr>
<td><strong>EXAMINATION TOTAL</strong></td>
<td>1400</td>
<td>40%</td>
<td>44</td>
</tr>
<tr>
<td><strong>COURSEWORK</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual Project</td>
<td>1000</td>
<td>40%</td>
<td>16</td>
</tr>
<tr>
<td><strong>PART IV TOTAL MAXIMUM MARKS</strong></td>
<td>2400</td>
<td></td>
<td>≥60</td>
</tr>
</tbody>
</table>

**Note:** In order for an MEng degree to satisfy the academic requirements for Corporate Membership of the Institution of Mechanical Engineers, marks for at least four Part IV courses (including the Advanced Applications course) must equal or exceed 40%.

### MEng in Mechanical Engineering with Nuclear Engineering, 2015-16

*This programme differs from the basic MEng only in requiring students to take the five nuclear-themed modules in ME3-4.*

One mark contributes equally towards the degree in every year except the first, and the final degree class is determined by simple addition of marks awarded in Parts II to IV. Thus the four year totals, when expressed as percentages, contribute successively zero, 25%, 37.5% and 37.5% towards the total degree mark.

#### Part I

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>140</td>
<td>40%</td>
<td>12</td>
</tr>
<tr>
<td>Thermofluids</td>
<td>140</td>
<td>40%</td>
<td>10</td>
</tr>
<tr>
<td>Solid Mechanics</td>
<td>140</td>
<td>40%</td>
<td>10</td>
</tr>
<tr>
<td>Materials</td>
<td>70</td>
<td>40%</td>
<td>5</td>
</tr>
<tr>
<td>Mechatronics</td>
<td>70</td>
<td>40%</td>
<td>5</td>
</tr>
<tr>
<td>Design and Manufacture</td>
<td>70</td>
<td>40%</td>
<td>5</td>
</tr>
<tr>
<td><strong>EXAMINATION TOTAL</strong></td>
<td>630</td>
<td>40%</td>
<td>47</td>
</tr>
<tr>
<td>Examination</td>
<td>Max. mark</td>
<td>Pass mark</td>
<td>ECTS</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------</td>
<td>-----------</td>
<td>------</td>
</tr>
<tr>
<td>PART I TOTAL MAXIMUM MARKS</td>
<td>800</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** A student who achieves the pass marks shown will qualify for progression to Part II. The marks will be noted on the final degree transcript and used to determine the Dean’s List, but will not be counted towards the final degree classification.

**Note:** If a candidate passes Thermofluids or Solid Mechanics on aggregate having failed either of the two constituent papers the Examining Board may, against criteria determined on a year by year basis, record a Deferred Decision and require a Supplementary Qualifying Test.

---

**Part II**

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>220</td>
<td>40%</td>
<td>9</td>
</tr>
<tr>
<td>Thermofluids</td>
<td>330</td>
<td>40%</td>
<td>14</td>
</tr>
<tr>
<td>Solid Mechanics</td>
<td>330</td>
<td>40%</td>
<td>14</td>
</tr>
<tr>
<td>Mechatronics</td>
<td>110</td>
<td>40%</td>
<td>5</td>
</tr>
<tr>
<td>Design, Manufacture and Management</td>
<td>220</td>
<td>40%</td>
<td>7</td>
</tr>
<tr>
<td>EXAMINATION TOTAL</td>
<td>1210</td>
<td>40%</td>
<td>49</td>
</tr>
<tr>
<td>COURSEWORK: Comprising Mathematics 6, Thermofluids 48, Solid Mechanics 62, Mechatronics 44, Computing 100, Design and Manufacture 100 Technical Presentation Skills 30.</td>
<td>390</td>
<td>40%</td>
<td>11</td>
</tr>
<tr>
<td>PART II TOTAL MAXIMUM MARKS</td>
<td>1600</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** A student who fails to achieve 50% on Part II Examination Total will be required to transfer to BEng degree registration.

---

**Part III**

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine System Dynamics</td>
<td>200</td>
<td>40%</td>
<td>12</td>
</tr>
<tr>
<td>Thermodynamics and Energy</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction to Nuclear Energy, Nuclear Chemical Engineering and three other modules chosen within specified constraints</td>
<td>each 200</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>EXAMINATION TOTAL (see note)</td>
<td>1400</td>
<td>40%</td>
<td>42</td>
</tr>
<tr>
<td>COURSEWORK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering Ethics</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literature Research Project</td>
<td>170</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Design, Make and Test Project</td>
<td>800</td>
<td>40%</td>
<td></td>
</tr>
</tbody>
</table>
### Schemes for the award of Honours

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSEWORK TOTAL</td>
<td>1000</td>
<td>40%</td>
<td>18</td>
</tr>
<tr>
<td>PART III TOTAL MAXIMUM MARKS</td>
<td>2400</td>
<td>—</td>
<td>60</td>
</tr>
</tbody>
</table>

**Note:** An MEng student who achieves a Part III examination total of less than 50% while satisfying all other criteria for progression to Part IV will be invited to graduate with the award of a BEng Degree.

### Part IV

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Advanced Applications module</td>
<td>400</td>
<td>—</td>
<td>12</td>
</tr>
<tr>
<td>Five modules chosen within specified constraints</td>
<td>each 200</td>
<td>—</td>
<td>≥32</td>
</tr>
<tr>
<td>EXAMINATION TOTAL</td>
<td>1400</td>
<td>40%</td>
<td>44</td>
</tr>
</tbody>
</table>

| COURSEWORK                                         |           |           |      |
| Individual Project                                 | 1000      | 40%       | 16   |

| PART IV TOTAL MAXIMUM MARKS                        | 2400      | ≥60       |      |

**Note:** The examination total for Parts III and IV must include marks for Introduction to Nuclear Energy, Nuclear Chemical Engineering, Nuclear Thermal Hydraulics, Nuclear Reactor Physics and Nuclear Materials modules. If it does not but the candidate satisfies all other criteria, the student may graduate with an MEng Degree in Mechanical Engineering.

**Note:** In order for an MEng degree to satisfy the academic requirements for Corporate Membership of the Institution of Mechanical Engineers, marks for at least four Part IV courses (including the Advanced Applications course) must equal or exceed 40%.

### BEng in Mechanical Engineering, 2015-16

*Marking scheme for exit with BEng.*

One mark contributes equally towards the degree in every year except the first, and the final degree class is determined by simple addition of marks awarded in Parts II and III. Thus the three year totals, when expressed as percentages, contribute successively zero, 40% and 60% towards the total degree mark.

### Part I

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>140</td>
<td>40%</td>
<td>12</td>
</tr>
<tr>
<td>Thermofluids</td>
<td>140</td>
<td>40%</td>
<td>10</td>
</tr>
<tr>
<td>Solid Mechanics</td>
<td>140</td>
<td>40%</td>
<td>10</td>
</tr>
<tr>
<td>Materials</td>
<td>70</td>
<td>40%</td>
<td>5</td>
</tr>
<tr>
<td>Mechatronics</td>
<td>70</td>
<td>40%</td>
<td>5</td>
</tr>
<tr>
<td>Design and Manufacture</td>
<td>70</td>
<td>40%</td>
<td>5</td>
</tr>
<tr>
<td>EXAMINATION TOTAL</td>
<td>630</td>
<td>40%</td>
<td>47</td>
</tr>
</tbody>
</table>

| COURSEWORK: Comprising Mathematics 4, Thermofluids 20, Solid Mechanics 8, Mechatronics 18, Materials 12, | 170       | 40%       | 13   |
## Exams for the award of Honours

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
</table>

**PART I TOTAL MAXIMUM MARKS**

<table>
<thead>
<tr>
<th></th>
<th>800</th>
<th>60</th>
</tr>
</thead>
</table>

- **Note:** A student who achieves the pass marks shown will qualify for progression to Part II. The marks will be noted on the final degree transcript and used to determine the Dean's List, but will not be counted towards the final degree classification.
- **Note:** If a candidate passes Thermofluids or Solid Mechanics on aggregate having failed either of the two constituent papers the Examining Board may, against criteria determined on a year by year basis, record a Deferred Decision and require a Supplementary Qualifying Test.

### Part II

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>220</td>
<td>40%</td>
<td>9</td>
</tr>
<tr>
<td>Thermofluids</td>
<td>330</td>
<td>40%</td>
<td>14</td>
</tr>
<tr>
<td>Solid Mechanics</td>
<td>330</td>
<td>40%</td>
<td>14</td>
</tr>
<tr>
<td>Mechatronics</td>
<td>110</td>
<td>40%</td>
<td>5</td>
</tr>
<tr>
<td>Design, Manufacture and Management</td>
<td>220</td>
<td>40%</td>
<td>7</td>
</tr>
</tbody>
</table>

**EXAMINATION TOTAL**

<table>
<thead>
<tr>
<th></th>
<th>1210</th>
<th>40%</th>
<th>49</th>
</tr>
</thead>
</table>


**PART II TOTAL MAXIMUM MARKS**

<table>
<thead>
<tr>
<th></th>
<th>1600</th>
<th>60</th>
</tr>
</thead>
</table>

- **Note:** A student who fails to achieve 50% on Part II Examination Total will be required to transfer to BEng degree registration.

### Part III

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>Pass mark</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine System Dynamics</td>
<td>200</td>
<td>—</td>
<td>6</td>
</tr>
<tr>
<td>Thermodynamics and Energy</td>
<td>200</td>
<td>—</td>
<td>6</td>
</tr>
<tr>
<td>Five other courses chosen within specified constraints each</td>
<td>200</td>
<td>—</td>
<td>30</td>
</tr>
<tr>
<td><strong>EXAMINATION TOTAL (see note)</strong></td>
<td>1400</td>
<td>40%</td>
<td>42</td>
</tr>
</tbody>
</table>

**COURSEWORK**

<table>
<thead>
<tr>
<th>Examination</th>
<th>Max. mark</th>
<th>%</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Ethics</td>
<td>30</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Literature Research Project</td>
<td>170</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design, Make and Test Project</td>
<td>800</td>
<td>40%</td>
<td>18</td>
</tr>
</tbody>
</table>

**COURSEWORK TOTAL**

<table>
<thead>
<tr>
<th></th>
<th>1000</th>
<th>18</th>
</tr>
</thead>
</table>

**PART III TOTAL MAXIMUM MARKS**

<table>
<thead>
<tr>
<th></th>
<th>2400</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination</td>
<td>Max. mark</td>
<td>Pass mark</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Machine System Dynamics and Thermodynamics and Energy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part III Examination Total AND satisfies all other criteria for progression to Part IV of the MEng degree in Mechanical Engineering may, at the discretion of the Examiners, be invited to transfer registration.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** A student who achieves an aggregate total of at least 40% on Machine System Dynamics and Thermodynamics and Energy AND at least 55% on Part III Examination Total AND satisfies all other criteria for progression to Part IV of the MEng degree in Mechanical Engineering may, at the discretion of the Examiners, be invited to transfer registration.
Chapter 13

Professional development

Topics:

- What is a Chartered Engineer?
- Industrial placements
- What is a Monitored Professional Development Scheme?
- Professional Skills
- Credit transfer using ECTS
- Finding employment
- Further study
- UROP placements

Many of our graduates never work as professional mechanical engineers, but virtually all easily find employment because the programme is widely regarded as rigorous and exacting. Each student can do much to still further enhance their degree by beginning professional development at an early stage — especially via industrial experience.
What is a Chartered Engineer?

The title Chartered Engineer (CEng) is protected by UK civil law and is internationally one of the most widely recognised of engineering qualifications. In the UK, it is awarded by the Engineering Council.

The benchmark for CEng is UK-SPEC: the UK Standard for Professional Engineering Competence. UK-SPEC, published by the Engineering Council, tries to specify the essential attributes of a professional engineer. It was developed, and is regularly updated, by panels representing UK professional engineering institutions, employers and educators.

To become a Chartered Engineer, you will need:

1. The Educational Base: an MEng or equivalent degree from a recognised (accredited) degree programme like ours; and
2. An extended period of Initial Professional Development (IPD): work-based training and/or experience under the guidance of a Mentor.

A professional institution like the Institution of Mechanical Engineers (IMechE) acts as an agent for the Engineering Council: it both accredits degree programmes and, through a network of suitably qualified mentors, monitors the subsequent IPD process.

Related Links

Engineering Council website
UK-SPEC with download
Engineering Council information on CEng registration
Institution of Mechanical Engineers website
How to apply for to be an Affiliate Member of IMechE

Industrial placements

Industrial placements can contribute greatly to your training as an engineer. Even if you are not registered on the Year in Industry programme, one or more relevant vacation placements can greatly enhance your education and employability as a mechanical engineer.

Placements are a useful way to try out different engineering disciplines to see which one is for you. They also add extra colour to your CV — which will be useful when you are trying to stand out from the crowd when you graduate.

Applying for a placement has no guarantee of success and it is therefore sensible to apply for more than one opportunity.

The Department recognises industrial placements, provided they are at least 10 weeks in length, through the IMechE Monitored Professional Development Scheme, so the time you spend on industrial placement can be counted towards your Chartered Engineer status when you graduate. For example taking a placement during the summer holidays will accrue 1/4 of a year experience towards CEng.

The Department also supports year-long student internships where you really get to know a company/industry in intimate detail. If you perform well on a placement it is also common for the company to make conditional offers of either future placements or graduate positions. Very occasionally the company will also sponsor your remaining study years with a bursary in conjunction with a graduate offer.

Related Links

The year in industry on page 80
What is a Monitored Professional Development Scheme?

An MPDS provides a framework for recent engineering graduates to systematically record the Initial Professional Development (IPD) needed for registration as a Chartered Engineer. Because we operate an MPDS ourselves, you can record extracurricular experience during vacations or a year in industry while still an undergraduate.

Essentially, a Monitored Professional Development Scheme provides:

1. A network of mentors who are suitably qualified to provide guidance and assessment; and
2. A management system for recording and documenting the IPD process.

As well as being accredited by IMechE to award degrees which provide the Educational Base for CEng registration, this department is also accredited to provide an MPDS. If you find vacation work in an organisation which already has an MPDS scheme, you should use it; if not, you should use ours. If you are with a company that requires use of the online system (i.e. company managed MPDS), you may need to pay registration fees; otherwise, the scheme is free.

Related Links

IMechE MPDS website

MPDS Training Objectives

IMechE MPDS Training Objectives, which are adopted without modification for student placements under the XPD scheme

Personal development

1. Self Management — the ability to control and direct own training, career and efforts

<table>
<thead>
<tr>
<th>Level</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Confident, able to negotiate own requirements and accept responsibility</td>
</tr>
<tr>
<td>3</td>
<td>Works towards personal goals using available resources, with minimum guidance</td>
</tr>
<tr>
<td>2</td>
<td>Accepts responsibility but requires prompting to work towards goals</td>
</tr>
<tr>
<td>1</td>
<td>Has difficulty identifying personal goals and appropriate resources</td>
</tr>
</tbody>
</table>

2. Communication skills — the ability to give a complete and concise account of a situation, either orally or written

<table>
<thead>
<tr>
<th>Level</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Always clear and accurate, high standard of presentation; can communicate with people at all levels</td>
</tr>
<tr>
<td>3</td>
<td>Reasonable presentation and generally accurate in content; rarely has difficulty making a point</td>
</tr>
<tr>
<td>2</td>
<td>Usually easy to understand; has difficulty presenting to people at all levels</td>
</tr>
<tr>
<td>1</td>
<td>Tendency to be inaccurate and has difficulty conveying information in any form</td>
</tr>
</tbody>
</table>

3. Comprehension — the ability to understand and interpret instructions

<table>
<thead>
<tr>
<th>Level</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Understands well at first attempt, readily grasps new ideas and concepts</td>
</tr>
<tr>
<td>3</td>
<td>Does not normally require additional information or explanation to complete a task</td>
</tr>
<tr>
<td>2</td>
<td>Sometimes requires additional information or explanation</td>
</tr>
</tbody>
</table>
4. **Personal/social skills** — the ability to work with others and gain respect

<table>
<thead>
<tr>
<th>Level</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Works well in a group or team and establishes good relationships with people at all levels</td>
</tr>
<tr>
<td>3</td>
<td>Works in a group or team, good relationships at own level</td>
</tr>
<tr>
<td>2</td>
<td>Attempts to mix and make a contribution</td>
</tr>
<tr>
<td>1</td>
<td>Prefers to work alone and has difficulty establishing good relationships</td>
</tr>
</tbody>
</table>

**Technical development**

1. **Engineering practice** — the ability to apply sound engineering practices

<table>
<thead>
<tr>
<th>Level</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Fully able to select materials, processes and components to customer specification</td>
</tr>
<tr>
<td>3</td>
<td>Able to advise on suitable materials, processes and components</td>
</tr>
<tr>
<td>2</td>
<td>Able to select and specify from organisation’s own capabilities of manufacture</td>
</tr>
<tr>
<td>1</td>
<td>Has difficulty selecting suitable materials, processes and components</td>
</tr>
</tbody>
</table>

2. **Engineering principles** — the ability to apply sound engineering principles and technical judgement

<table>
<thead>
<tr>
<th>Level</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Fully able to apply engineering principles to design, development and research activities</td>
</tr>
<tr>
<td>3</td>
<td>Able to apply established procedures</td>
</tr>
<tr>
<td>2</td>
<td>Needs some guidance on the application of engineering principles</td>
</tr>
<tr>
<td>1</td>
<td>Needs frequent guidance on the application of suitable engineering principles</td>
</tr>
</tbody>
</table>

3. **Problem solving** — the ability to originate new and improved uses of people and resources

<table>
<thead>
<tr>
<th>Level</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Excellent problem solver; can propose innovative solutions</td>
</tr>
<tr>
<td>3</td>
<td>Good understanding and useful innovator</td>
</tr>
<tr>
<td>2</td>
<td>Puts forward some ideas but has difficulty with decisions</td>
</tr>
<tr>
<td>1</td>
<td>Usually able to follow set procedures but shows little capability at proposing new solutions</td>
</tr>
</tbody>
</table>

4. **Technical achievement** — the ability to translate knowledge and skills into achieving results

<table>
<thead>
<tr>
<th>Level</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Quickly develops skills and achieves excellent results without prompting</td>
</tr>
<tr>
<td>3</td>
<td>Achieves well with little supervision</td>
</tr>
<tr>
<td>2</td>
<td>Average ability in achieving results but hesitant with little initiative</td>
</tr>
<tr>
<td>1</td>
<td>Usually needs supervision and assistance to achieve tasks</td>
</tr>
</tbody>
</table>

**Business development**

1. **Commercial and financial implications** — the ability to see engineering in a business environment
Professional development

<table>
<thead>
<tr>
<th>Level</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Fully aware of the commercial and financial implications of the task in hand</td>
</tr>
<tr>
<td>3</td>
<td>Generally aware of implications but sometimes needs clarification on particular points</td>
</tr>
<tr>
<td>2</td>
<td>Only aware of the business environment when seconded to a commercial department</td>
</tr>
<tr>
<td>1</td>
<td>Limited awareness of any commercial / financial ramifications</td>
</tr>
</tbody>
</table>

2. Organisation skills — the ability to structure circumstances to a given objective

<table>
<thead>
<tr>
<th>Level</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Fully aware of the importance of planning and scheduling dependent on changing circumstances and tasks</td>
</tr>
<tr>
<td>3</td>
<td>Usually organises well but sometimes needs guidance on some areas of planning</td>
</tr>
<tr>
<td>2</td>
<td>Average ability but needs reminders on critical factors</td>
</tr>
<tr>
<td>1</td>
<td>Muddled approach and unable to set priorities</td>
</tr>
</tbody>
</table>

Registering for MPDS

To register for MPDS you must complete an IMechE form provided either by the provider of your industrial placement, or by the Department.

Before completing the MPDS Registration Form, you will need:

- Affiliate membership of the IMechE — this is free for UG students
- A mentor who is registered as a CEng or IEng. By default, your mentor will be your personal tutor, but if your personal tutor is not a CEng then the Industrial Liaison Co-ordinator will stand in.

1. Download the form from Blackboard.
2. You are applying as an ‘Undergraduate student — on an accredited university scheme’.
3. Forward the registration form to the UG Office.

Related Links

- What is a Monitored Professional Development Scheme? on page 124
- How to register for IMechE MPDS Tools

Recording Monitored Professional Development

Having registered on MPDS, you must submit a report for each quarter during which you wish to record professional development.

If your industrial placement provider has a company managed MPDS and requires you to register on its online system, you should work towards the UK-SPEC competence framework.

For our departmental MPDS you should work towards Training Objectives; you will progress to the UK-SPEC competence framework after graduation.

1. At the beginning of the quarter define your objectives, making some reference to the training objectives or competence framework
2. At the conclusion of each placement, complete a paper Quarterly Report and a paper Assessment Report on the standard templates
3. Add each MPDS report to a private portfolio for use after you graduate.

If you are on a company managed MPDS, you do not need to get anything signed off at Imperial.

If you are on our own MPDS, you should get your quarterly reports signed off by your line manager at your work placement AND your MPDS mentor.
**Important:** On graduation, make sure that your MPDS mentor has signed all of your quarterly and assessment reports, and send a copy of each to IMechE. You will need show the originals to your new mentor when you take up employment.

After graduation you can continue with MPDS but you will need to re-register on the MPDS as a graduate, pay registration fees and start using the online system. Do this within two months of starting work, or some of the time spent with that company may not be counted.

It is possible to continue MPDS at an organisation that does not have an accredited scheme, provided you initially completed at least 9 months of MPDS on an accredited scheme.

**Related Links**
- [MPDS Training Objectives](#) on page 124
- [IMechE My MPDS Tools](#)

## Professional Skills

*In addition to its own core technical knowledge and skills, every profession shares a common set of ‘transferable’ skills ranging from communication and teamwork to professional ethics. These are taught in a thread which runs throughout the core programme and has links to many teaching and learning activities.*

### Technical writing skills

ME1 **Experimental Reporting Skills** teaches the writing of a standard-pattern technical report — along with the recognition and treatment of experimental errors and uncertainty — through a lab-based case study involving risk and safety issues.

### Oral presentation skills

ME2 **Technical Presentation Skills** teaches the basics of a Powerpoint-type presentation through individual preparation and delivery of a 10-minute talk on a theme chosen from a closed list.

### Teamwork skills

You will begin to exercise teamwork skills with a ‘warm-up’ exercise before the ME1 programme even begins and will further exercise them during ME1 and ME2 **Design and Manufacture**. The underlying theory of group dynamics and organisations is treated in ME2 **Management and Business for Engineers**; students then tackle the main **Design Make and Test Project** in ME3.

### Engineering Ethics

After ME1 **Experimental Reporting Skills** has introduced the ethical dimension of engineering through that of Scientific Ethics. You will then be faced in the ME3 DMT module with a half-day business game, delivered by Shell International, presenting corporate social responsibility issues in the extraction of crude oil in a fictional foreign state.

## Credit transfer using ECTS

*ECTS units are ‘currency’ in which UK students can transfer credit to another HE institution within the European Higher Education Area (HEA) of 46 other countries.*

By signing the 1999 Bologna agreement, the European HEA countries agreed to harmonise their very different higher education systems and to recognise each other’s degrees. A student should, for example, be able to

1. Carry credits from modules of a degree programme in one country to a suitable degree programme in another; and/or
2. Take a BEng, an MSc and a PhD in two or three different countries.

To make (1) possible, HEA countries use the ECTS (European Credit Transfer System). One ECTS unit is equivalent to about 25 hours of assessed study.

To make (2) possible, HEA countries must award comparable degrees in the following order:
1. A first-cycle (Bachelor’s or ‘Higher’, H) degree, requiring at least 180 ECTS;
2. A second-cycle (Master’s, M) degree, requiring at least 90 ECTS;
3. A third-cycle Doctoral degree.

Related Links
*Download ECTS Users’ Guide (pdf)*

The integrated masters ‘credit gap’

*The UK Integrated Master’s (MEng) degree is regarded in some countries as being 30 ECTS short of a Masters degree.*

A 30-week UK academic year can count as no more than 60 ECTS credits, whereas a full-year MSc degree is equivalent to 90 ECTS.

The MEng or MSci Integrated Master’s (or Undergraduate Master’s) degree is a UK invention. Without pausing to be awarded a Bachelor’s degree an MEng student continues directly into the fourth 30-week year and, on completing it successfully, is awarded a Master’s degree.

Integrated Master’s degrees are recognised by UK universities and professional institutions, e.g. IMechE, as the norm. They are widely respected and — without the disruptions of changing course after 3 years — they are highly efficient. The concept of specifying modules and programmes by learning outcomes as we do, rather than by hours of study as ECTS does, is also internationally accepted.

However: 4 times 60 is 30 ECTS less than 180 plus 90. Some European HEA countries and universities therefore do not accept MEng (or MSci) degrees as ‘real’ 2nd cycle degrees. They may, for example, require completion of an additional one-year Master’s degree before accepting an MEng graduate for a PhD programme.

What is the Extracurricular Professional Development (XPD) scheme?

*The Extracurricular Professional Development scheme, which is voluntary and which you can join at any stage in the programme, offers a solution to the 30-ECTS Integrated Master’s credit gap — and other substantial benefits. Under the XPD scheme you can simultaneously accrue both Initial Professional Development time and additional ECTS credits.*

Engineering is such a broad and socially-engaged career that activities which students choose to do outside College time, e.g. learning a language or studying a subject unrelated to engineering, can contribute directly to professional development. The College will therefore recognise some such activities by allocating them ECTS and noting them on the degree transcript. In this way a student can accrue the additional 30 ECTS for a Bologna-compatible MEng degree. The activities are in effect assessed, but do not contribute towards the degree classification.

**Tip:** Because this Department already has an MPDS scheme (on which this scheme is based), the IMechE has agreed that the time spent on activities for which the College will award ECTS will also be counted towards Initial Professional Development: the limit of 30 ECTS will be recognised as equivalent to at least six months.

Registering for the XPD scheme

*For the time being at least, you must complete two separate forms, containing the same information, to count the same activity both for ECTS — which Registry will annotate on the degree certificate — and for Initial Professional Development which IMechE will record to count towards CEng status.*

The XPD scheme is voluntary, and you may join it or leave it at any stage. Before deciding to register, you may want to discuss with your tutor whether it is right for your circumstances. For example:

- Students intending to study for a higher degree in Europe are likely to find the additional ECTS particularly important.
- Some international students, on the other hand, do not wish to obtain Chartered Engineer status.
Tip: No visa issues arise from international students accepting summer placements while registered at Imperial.

Having decided to register:

1. Complete the College Personal Development Planning course, iPlan. PDP should get you into the habit of thinking about your career development long before you actually begin a career. The habits and practices it encourages will seem strange at first but they are found, in one form or another, throughout present-day working life. They will become even more important in the future.

2. Register with the IMechE Career Development (MPDS) scheme.

3. Plan your strategy. The scheme relies on your initiative, and in the first year or so of your course you will have plenty to think about. Nevertheless, you can both plan your own development and recognise appropriate opportunities when they arise.

You can now proceed to select, plan and arrange the activities which will progress your Personal Development Plan and earn you ECTS credits.

Related Links

What is a Monitored Professional Development Scheme? on page 124

Activities eligible for ECTS credit

Only specific extracurricular activities for annotation on the degree transcript. In order for an activity to be assessed as worthy of ECTS credits, it must have clearly defined objectives and criteria for assessment — which the student must satisfy.

The activities currently eligible for XPD are:

College extracurricular courses

These must be:

- Complete, assessed College courses offered by the Centre for Co-Curricular Studies, and
- Undertaken at lunchtime.

ECTS: 6 credits per course

For completed and assessed extracurricular courses taken in evenings, the credit awarded is:

ECTS: 2 credits per course.

Industrial internships and placements

These must be:

- Directly related to engineering or its industrial or business context;
- Sufficiently demanding in nature to exercise a range of interpersonal and intellectual skills;
- Between 6 and 12 full-time (37h) weeks, or their equivalent part-time, in duration; and
- External to the College.

ECTS: 1.5 credits per full working week.

UROP or other research placements

These must be:

- Sufficiently demanding in nature to exercise a range of analytical and intellectual skills;
- Between 6 and 12 full-time weeks in duration; and
- Undertaken during vacations at the end of the second and third years of study.

ECTS: 1.5 credits per full working week, 15 maximum on a single project.

Important: The College initially considered student-led activities, e.g. E.quinox, ineligible for ECTS accrual; this decision is currently under review.

Related Links

Centre for Languages, Culture and Communication website
Completing an XPD Activity Plan

Arranging any extracurricular activity is, by definition, your own choice and responsibility. However, to ensure that it is eligible for ECTS, learning outcomes must be defined and assessed. Under the XPD scheme these are provided by Training Objectives, as in an MPDS report.

Before you undertake the activity, you must ensure that:

1. It will progress your Personal Development Plan
2. It is eligible under the XPD scheme.

Important: For UROP or industrial placements you must choose a project with the potential for progress towards learning outcomes in which you have not already achieved a pass.

For modules taught within the College and taken by students under the XPD scheme as an extracurricular activities, learning outcomes are defined in the usual academic terms and assessed by the usual methods.

For industrial placements, IMechE has already identified an equivalent set of attributes and skills as training objectives and these are assessed using the MPDS Assessment Report — Student Placement document. These attributes and skills are referenced to UK-SPEC but relatively low expectations are set because you are unlikely to see much progression against UK-SPEC in your first year of development.

Since the XPD scheme covers only this first year, it uses the MPDS Training Objectives. Each is assessed on a 1-4 scale. As a rule, IMechE regards it as “unlikely that individuals in year 1 of development would be scoring at level 3”. Thus, in effect, 2 is a pass and 1 a fail with 3 corresponding to A* grade.

For each extracurricular placement you must identify fresh Training Objectives, in advance, as intended learning outcomes.

1. Download and complete an XPD Activity Plan form. Almost all of the information you write here will also be needed for IMechE documentation.
2. Submit the plan to your Personal Tutor for signature, and arrange a time to discuss and/or collect it.
3. Download the IMechE MPDS Assessment Report — Student Placement and review the Training Objectives.
4. Identify your designated placement supervisor (who will become your Delegate Mentor) and agree a brief definition for the planned task.
5. Select at least the specified number of Training Objectives, avoiding those on which you achieved a Level 2 assessment during any previous placement.
   a) For a 6-8 week placement, choose three training objectives.
   b) For an 9-12 week placement, choose four training objectives.
6. Enter the chosen Training Objectives on your XPD Activity Plan.
7. Submit a COPY of the Plan form, with Sections 1-3 completed, to the Undergraduate Office.

Related Links

Download XPD Activity Plan form
Imperial UROP website
MPDS Training Objectives on page 124
IMechE MPDS Assessment Report form

UROPs: completing Registry Form B

To register a UROP placement under XPD, you should complete Form B and append it to the Activity Plan in order to set up the bursary.

The advantage of Form B is that it includes information for the UROP office to set up bursary payments.
Note: The ‘Departmental Teaching Committee’ referred to on Form B is our Courses Committee.

1. For Current Degree Programme enter ‘MEng’.
2. If the placement is full-time, *Expected number of ECTS credits* will be 1.5 times the number of weeks.
3. For Expected Learning Outcomes, enter ‘See XPD Activity Plan’.
4. Leave Section C blank.
5. Add the descriptive Appendix (250 words will usually suffice).
6. Return Form B with the XPD Activity Plan to the UG Office.

The UG Office will now process this form through Registry to set up your UROP placement and (if relevant) your Bursary.

Related Links

- Download UROP Form B (docx)
- Download UROP Form B (pdf)

Reporting your XPD activities

*You should complete a short report on each activity, in a standard form compatible with your development plan.*

The reporting required for an XPD activity depends on its nature and the ECTS you have accumulated.

1. Complete any assignments necessary for assessment of the activity. For an extracurricular College course the Course Leader will manage this. For a research (e.g. UROP) or industrial placement you must write a report (using the style defined, with examples, by the IMechE MPDS scheme) to demonstrate to your supervisor that the learning outcomes you cited at the outset have been achieved, and this should be signed by your industrial supervisor (i.e. Line Manager or section leader) and by your Personal Tutor.

2. If you have passed the assessment you must complete a quarterly report for the IMechE, with a copy to the UG Office (who will copy it to your Personal Tutor). If you have completed a research or industrial placement, simply re-use your assessment report. This report must be countersigned by the MPDS Scheme Administrator.

If you have also passed the threshold of 30 ECTS, you have completed the XPD scheme and satisfied College requirements for a Bologna-compatible degree. The details will be forwarded to Registry for transfer to your academic record.

Finding employment

*For many students, ME4 is dominated by the search for employment. To supplement the advice given by the Careers Centre, members of our departmental Industrial Academic Board have offered advice specifically oriented towards the engineering and related industries.*

The Industrial Academic Board (IAB), which meets twice a year, brings together representatives of the department with representatives from a few of the companies which employ our graduates. Its aim is to ensure that graduates are well prepared for the needs of industry, while keeping employers abreast of developments in our teaching programmes.

Technical interviews

*Some basic do’s and don’ts for success in technical interviews for employment in engineering.*

Preparation: before you attend

- Make sure you understand the role you are applying for; plan for questions on technical and people aspects; challenges that the employer is facing; health, safety, environment and legislation.
• Ask yourself what you have to offer: what are your skills/competencies? How is your background relevant to the role?
• Ask before the interview (usually your contact would be from the HR dept, but not always) if there is a particular structure to it, or aspects that will be covered; this may help to focus your mind.
• Review background information on the financial status of the company applied to (all company accounts are public domain).
• Read up on the relevant industry: what are the challenges? Does your prospective employer have any key suppliers and customers? What are their strengths?
• Ensure you are up to date with at least public-domain knowledge of the particular company interviewing you. It should be obvious by your questioning that you have visited their website and are up to date with latest public announcements. Perhaps pick up on something of interest from the website and ask them a question on it.
• Make sure you understand project costing and show an awareness of the need to keep projects within budgets. At least be able to describe how you would arrive at a project cost — what would you include and exclude.
• Check any work permit or visa requirements which depend upon nationality, and understand what (if any) help an employer might give. This information is usually freely available on company recruitment websites or in application packs.
• Prepare some questions to ask on, for example, terms and conditions, mobility, progression, training provided, whether the company support development to CEng and, if so, how...
• Think about what development needs you have (everyone has them — at every stage of their careers).
• Recognise the need to demonstrate reasonable technical depth and breadth at the interview: don’t forget the fundamentals.
• Remember: the interview is two-way, and they are actually being interviewed by you as well. Listen to what they are saying critically and think about whether you would be comfortable working for them.

At the interview

• Arrive on time: 10 minutes early is a good guide. If you expect to be held up call your contact as soon as possible.
• Dress appropriately.
• Turn off your mobile, or set it to silent.
• Be positive and enthusiastic: you need to convey that you actually want the job.
• Remember body language and posture; sit upright and look alert. Make good eye contact with the interviewers. Try to avoid using poor language, slang or pause-words (“like” etc. …) during your discussion.
• Be prepared to talk about a University project — both its technical aspects and the softer aspects such as team working. This approach can be used to put the candidate at ease and to get them talking about something they feel comfortable with. What was the project about? What hurdles did you overcome? Did it work? What were the findings/benefits? Be prepared to communicate this for, say, 5 minutes.
• Formulate a clear idea about how you would like your career to develop — hopefully it will match the company’s. Consider technical and managerial routes for career progression but also career enrichment opportunities. Be realistic about your ambitions: we can’t all be — or wouldn’t want to be — the CEO.
• Don’t worry about being nervous. Having some nerves is probably good and is perfectly natural — the interviewers will understand.
• Ask for clarification if you don’t understand a question.
• Ask intelligent questions about the job, company, training or industry.
• Be yourself. They want to employ you, not somebody else. If you don’t get the role applied for they may consider that you are better suited to other roles (which may not be widely advertised).
• Discussions about salary and benefits usually occur at the end. Only initiate a discussion if the interviewer omits to do so.
• DON’T regurgitate details from the company website during the interview.
• DON’T expect to derive complex equations.
• Don’t worry if you can’t answer a question: it’s best to be honest and respond that you don’t know, or are not sure. But do follow up with a question or two: this shows interest and will improve your understanding, if nothing else.
• DON’T be negative about past internships or industrial experiences; recognise positive points and what you have gained from the experience.
• DON’T rely on your CV to do the selling for you. No matter how good your grades, scores and qualifications are, you will need to sell yourself to the interviewers.

Assessment centres

*Information about assessment centres and tips on doing well at them.*

Assessment centres may be preceded by a telephone interview. If so, don’t just phone — see elsewhere for advice, and prepare.

**Preparation: before you attend**

Find as much as you can about the assessment centre in advance. The company should provide some briefing information; if they don’t or you feel that you need further information, then just contact them and ask. Each company’s format will differ and the following is provided for general guidance.

• Make sure you understand the challenges faced by the employer and those relevant in their industry. There should be plenty of information readily available on the internet — don’t just repeat details from the company website.
• Prepare to talk about some of the softer skills that are needed in an employee — if possible, with some examples based on your experiences (working in a team, working with difficult people, how to meet deadlines etc.).
• Prepare to discuss Health and Safety: What is your approach? What matters to the employer? Do you have any examples?

Assessment centres are usually facilitated by the company HR department, with staff from the company attending to act as observers. At the end of the assessment centre the company observers meet to provide an assessment of the candidates and to make recommendations. The observers will have been trained prior to the event and will be working to a well defined set of assessment criteria.

The event itself will typically involve some or all of the following elements:

• Interview;
• Team event;
• Numerical and verbal reasoning tests, psychometrics etc.;
• Presentation.

**Interview**

Scope/guidance should be provided before joining the assessment centre: see elsewhere for advice.

**Team event**

One scenario could be that teams of four are formed and the ‘team event’ spans the day. This is an attempt to replicate a working day where the flow of work will be interrupted. Expect a brief to be provided: for example it may include some data to be assessed along with other disparate pieces of information, with a deadline to discuss at a meeting at some point later in the day. Expect to be provided with some late-breaking news that may have some impact on your conclusions. Some time is usually provided for your team to have discussions during the day, you may then have to discuss your finding in a meeting, whilst being observed. The purpose of the observers is to try to obtain an understanding of your behaviour and interaction within a group.
• Raise points and contribute, even if it is to add strength to a point raised by another member of the team.
• Allow others to speak.
• If someone is reticent to speak then try to bring them into the conversation by asking for their views.
• Be prepared to summarise the group’s understanding at some stage, and seek agreement.
• If somebody else summarises for the group then be prepared to ask questions to test the findings
• DON’T be afraid to say anything.
• DON’T feel you have to be the loudest or most talkative to be noticed.

Numerical and verbal reasoning tests, psychometrics
Don’t worry about the numerical and verbal reasoning tests. Students often do much better at these than staff in post.

Presentation
This provides you with an opportunity to display your ability to interpret information in a short period of time, and to present some concise conclusions. You will be provided with time to review data and prepare a 10 min presentation, usually using PowerPoint. Note; some companies will require a longer presentation, up to 20 minutes and to senior managers followed by technical and non-technical questions.
• Work to your brief (read it carefully).
• Introduce yourself, your topic, time allocation etc. — and stick to your time.
• Specify whether you would prefer to be questioned during the presentation, or after it.
• Present concise, clear slides.
• Ensure that the presentation starts with a clear statement of what you are providing in your presentation, i.e. a short summary of the question or issue under discussion.
• State a clear conclusion.
• Be prepared to be challenged on your conclusions — so think about the alternative view.
• Aim on providing a professional presentation even though time may well be very limited.
• DON’T Look at slides or the computer too much during the presentation: talk to the audience and make good eye contact.
• DON’T Be defensive when you answer.
• DON’T Be too soft-spoken: a more forceful voice projects confidence
• DON’T Answer questions with a simple “yes” or “no”. Explain whenever possible. Reviewers check not only how much you understand or know but also how you respond to a question.
• DON’T let your mobile phone sound during the presentation — switch it off or set it to silent.

There is normally a wash-up session at the end, to which candidates are not invited. Observers try to identify facts about each candidate during the day, usually facilitated by HR. It’s not foolproof but does provide a means of assessing candidates on the day.

Further study
Many students find that the sense of individual achievement and discovery generated by a successful ME4 Individual Project gets them hooked on research. Since you are already here and your track record is known it will certainly be easier to find a project which suits you — even if it is offered in a different department.

Probably the best place to start looking for a PhD project will be with your ME4 (or perhaps ME3) project supervisor. Your personal tutor, and PhD students with which you will have made contact through their work as GTAs, are other good sources of inside information: ask around. Projects are posted publicly on Blackboard, the Departmental web pages and on a several open web sites.
Imperial runs a **Postgraduate Open Day** each December. Each department has an information stand with staff who can advise you on available research opportunities and Masters programmes. Designed primarily for visitors from outside the College who plan to study here, this event can also be a useful source of information if you are thinking of studying in another department or even another university.

**UROP placements**

*The Undergraduate Research Opportunities Programme matches students with 'research internships', either within or outside Imperial. A UROP placement offers work experience within a research environment; the work is usually paid; some bursaries are available; and ECTS credits can be earned via the XPD scheme.*

The UROP scheme at Imperial is coordinated within Registry, and is described in detail on the College web page. However, perhaps the best way to initiate a placement within Imperial will be to contact a research-active staff member whose work interests you. If you do agree a placement by this informal route it should still be set up formally, otherwise you will be unable to earn ECTS credits.

Most UROP placements are paid, but not all supervisors have sufficient research funding available. Some research sponsors, even relatively generous ones, put tight restrictions on the way in which funds can be spent. Under these conditions supervisors may be able to offer exciting projects bringing close interaction with potential employers, but unable to support bursaries for them.

**Related Links**

*College web page on the UROP scheme*
Chapter 14

Undergraduate degree programme overview

Topics:

- The programme year by year
- Programme modules mapped by year and TSG
- Studying abroad

The Department of Mechanical Engineering offers 3 undergraduate degrees in Mechanical Engineering.

The Department of Mechanical Engineering offers 3 undergraduate degrees in Mechanical Engineering. They are:

1. BEng in Mechanical Engineering
2. MEng in Mechanical Engineering
3. MEng in Mechanical Engineering with Nuclear Engineering
The programme year by year

As you progress through the 4-5 years of our degree programmes, there are managed transitions from the learning of fundamental skills to the exercise of judgement in individual project work, and from a prescribed syllabus to a choice of specialisations.

A schematic overview of the academic curriculum is given in *Programme modules mapped by year and TSG* on page 138.

Every teaching and learning activity is part of a module, which is taught in a specific year of the course (ME1 to ME4, the horizontal ‘time axis’ on the map) and is managed within a specific Teaching Subject Group (arrayed on the vertical axis). Each module is self-contained and separately assessed although, of course, its subject matter will be linked to that of other modules.

Note: In general use the term ‘course’ denotes sometimes an entire degree *programme* and sometimes an individual, examined course of study — i.e. what we refer to here as a *module*.

The Programme Specification provides a rather dry definition of the entire programme in standard form, as required by the government standards body which oversees higher education.
Studying abroad
We have exchange arrangements with some of the best technological universities in France, Germany, the Netherlands, Switzerland, Australia and the USA. If you are on the Mechanical Engineering with a Year...
Abroad programme, and your academic record and (if necessary) foreign language skills are good enough, you can spend your fourth year abroad.

Many studies have shown that ‘travel broadens the mind’ and deepens academic abilities not only in your chosen subject but also in linguistic and inter-cultural skills, self-reliance and self-awareness. Many employers are well aware of the benefits and value such a period abroad highly, enhancing employability and job prospects.

The Exchange Coordinator gives an open introductory lecture outlining the scheme.

You must bear in mind that to reach the required language level for certain placements, you will need to start a language course in year 1. Generally, the way you study and the rate you study at will need to match your individual case. For example, if you have a good A or AS level language and your sponsoring company is arranging for you to work in the relevant country during a long vacation, formal language classes here during term may not be necessary at all. However, if you have only GCSE level French or German you would be well advised to take one of the intensive language classes offered by the Humanities Department during term, and to work/travel abroad in the summer vacation(s).

**Caution:** It is important to be aware from the outset that places on exchange schemes are very limited, competition is fierce and academic selection criteria are exacting. Many students who are registered on the programme cannot ultimately be offered a place.

Studying abroad in this way is no soft option but it is a very rewarding experience, as those students who have done it confirm.
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