MSc Biomedical Engineering

Student Handbook 2016-17

The Department of Bioengineering
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Section one

Initial information
1.1 Welcome from the Head of Department

I am delighted to welcome you to the Department of Bioengineering at Imperial College London, and to congratulate you on gaining admission to Imperial. You have made a wise choice: Imperial is an outstanding university, and bioengineering is an exciting field that has a great future; bioengineering is the one field of engineering where engineers directly work to make sure people are healthy, to maintain health, and to help manage ageing; this will never “go out of fashion” and can only grow as technology drives ever-stronger links between engineering, medicine, and biology. The Department of Bioengineering has a history that goes back to the 1960s, and yet we are very focussed on the future of this new and fast-developing field of engineering. I hope that you will be energised by the excitement within the Department as we educate the leaders of tomorrow (that’s you!) and advance the frontiers of knowledge in this area.

Of course, university is about more than just the formal curriculum: here you will form lasting friendships and develop interests that will persist long after you have left Imperial. I hope that you will sample all that the Department and College have to offer outside the classroom, whether that be sports, student union, student clubs or volunteering opportunities. On behalf of the Department, I wish you all the best during your studies here.

Professor Anthony Bull
September 2016
1.2 Welcome from the Departmental Representative

You’ve probably heard this one too many times now, but: **CONGRATULATIONS ON MAKING IT TO IMPERIAL, AND WELCOME TO THE DEPARTMENT OF BIOENGINEERING!**

I’m Navidu and my role as Departmental Representative, in short, is to make sure each and every one of us, has a say in how things are run, and has the best possible time at Imperial.

I won’t be working alone – you will soon elect two Year Representatives who will liaise on your behalf with staff as well as external examiners; and most importantly participate in Student Staff Committee meetings, bringing any issues you may have to the table. It is safe to say that you’ll hear from all of the Reps a few too many times over the coming year! ;)

As a Year Rep for the last two years I have learnt that every bit of feedback matters – a little concern can lead to a big impact. I speak for all year reps when I say that we hold confidentiality at the utmost importance. All opinions and concerns will be kept anonymous.

Over the past two years our Department has achieved a great deal, through constructive discussions on better timetabling, better course & assessment structures, an even workload-distribution, and so on. As year rep then, what struck me was that the reason we were able to do so much was thanks to everyone being so open, vocal and constructive in sharing their opinions and concerns. Working together, we brought about important changes! I am confident we’ll see more of that this year too.

As departments go, Bioengineering is relatively young but exciting – which means we have a great mix of staff from multiple fields with plenty of new ideas, so I can guarantee you that our department is always full of life, wanting to grow and improve. So, feel free to reach out to any of them – maybe drop an email – if ever you need some advice or help, they are all very friendly and willing to help.

To get the full ‘university experience’, be sure to check out the Union’s clubs and societies; with over 330+ to choose from, there is bound to be something to tickle your taste buds (literally too – there actually is even a Cheese society!). One of them is Bioeng Soc which hosts many events and is great for getting to know each other. Whether you’re a 1st year or a Masters student it doesn’t matter, we embrace and mutually respect everyone: so do tag along!

There’s also plenty of help around college including the CGCU Welfare Officer, the Disability Officer, support for any ethnic or LGBTQ+ discrimination or even financial issues you run into – whatever problems you may face, you are not alone. Remember, no one is here to judge – those who mind don’t matter and those who matter don’t mind – and a lot of people, even those who are the first to run to the pharmacy for the slightest physical ailment, tend to neglect their mental health. Don’t let pressure build up – let it free at its earliest, we’re all here to help.

Lastly: make friends, collaborate, help one another (everyone struggles no matter how smart they sound), seize every opportunity (bungee jump off Queens Tower with our HoD!), be adventurous, and make sure you enjoy your time here. Like I said earlier, you aren’t a university student forever, so make the most of it while you are one!

I hope you all have a wonderful year!

Navi
1.3 Using this handbook

The handbook contains very important information for your academic life, and also for your life at Imperial College London outside of study. You should read the handbook as soon as possible after you receive it so that if an event or circumstance arises, you know what action to take, or at least know that the information on what action to take is available to you.

You will be issued with a copy of the handbook for your programme and year of study in week one of autumn term, and you will also be able to access the PDF document online from the current taught postgraduate students page of the Department of Bioengineering website.

Included in this handbook is essential information about:

- What to do if you run into difficulties affecting your academic life;
- What to do if you run into difficulties in your personal life, such as illness;
- Departmental and College contacts and resources available to you;
- The structure and content of your degree programme and year of study.

There are a number of other important sources of information from the Department, and we would encourage you to make use of these:

- Useful links, module descriptors, timetable information and year-specific information can be accessed via the current postgraduate students page on the Department of Bioengineering webpages, at [http://www.imperial.ac.uk/bioengineering/admin/msc/](http://www.imperial.ac.uk/bioengineering/admin/msc/).
- There is an information board outside the Student Study Room (3.06, RSM)
- Important information will be communicated to you via email, so please ensure you check your College email address regularly.

Please be aware that the information in this handbook is correct at the time of going to print. However, some information may occasionally change during the course of the year – current students will be informed if this is the case.

The information provided in this handbook relates only to the academic year specified on the front cover.
1.4 Important procedures
From time to time unfortunate events can happen and so it is important that you are familiar with these procedures, so that you know who to contact and what to do in case of an emergency or serious problems.

1. If there is any fire, medical or security emergency:
Immediately telephone security, internal extension no. 4444 (internal) or from an external phone +44 (0)20 7589 1000. This line is supported 24 hours a day. State your exact location, your name and extension number. Security Control will immediately mobilise the required emergency services. Do not ring 999.
If you discover a fire, immediately press the nearest red alarm call point. Warn people in the vicinity. Evacuate the building and be ready to tell Security and Fire Officers where the fire is.
Read more about our Health and Safety procedures in Sections 3.19 and 3.20 - Health and Safety.

2. If you are ill and think you may miss an exam:
You should do both of the following:
   a. Immediately contact the Department via one of the below channels:
      i. Student Office: Ms Britta Ross: +44 (0)20 7594 5122 (b.ross@imperial.ac.uk)
      ii. Postgraduate Tutor: Professor Rob Krams: +44 (0) 2075941473 (r.krams@imperial.ac.uk)
      iii. Academic Tutor: Mr Martin Holloway: +44 (0)20 7594 5176 (m.holloway@imperial.ac.uk)
   b. Contact a registered medical doctor as soon as possible for an examination - they are the only people who can pronounce that you are medically unfit to take an exam.
      i. If you miss an exam for medical reasons, the College requires a valid medical certificate, issued by a registered doctor, stating that you were unfit to take an exam at the dates/times of the exam to be presented within a week. This certificate is shown to the Board of Examiners meeting for them to consider a replacement exam. Otherwise the exam is considered to have been failed.
      ii. We highly recommend that you obtain a medical certificate by contacting the Imperial College Health Centre - they are equipped to help in this situation, and if you attend as soon as you can after 8.30am, stating that you have an exam, they will make sure that you get seen quickly.
      iii. Imperial College Health Centre: +44 (0)20 7584 6301 (imperialcollege.hc@nhs.net)

3. If you, or a friend, are/is suffering stress or depression:
   a. Contact the Health Centre (details above) or the Student Counselling Service: +44 (0)20 7594 9637 (counselling@imperial.ac.uk)
   b. If you feel you can, contact someone in the Department such as the Postgraduate Tutor or the Academic Tutor:
      Postgraduate Tutor: Professor Rob Krams: +44 (0)20 75941473 (r.krams@imperial.ac.uk)
      Academic Tutor: Mr Martin Holloway: +44 (0)20 7594 5176 (m.holloway@imperial.ac.uk)
   c. The Student Space website has lots of useful information on dealing with stress, and where to find additional help and support: http://www.imperial.ac.uk/student-space/

4. Illness, absence, or inability to submit coursework
   a. If you have to be absent through illness or for any other personal reasons, you must let the Student Office (details above) know as soon as possible. If you are likely to miss a coursework, lab or exam deadline, please see ensure you contact the Student Office without delay.
   b. It is important that you familiarise yourself with the information about absences in Section 4. 35- Departmental expectations on attendance and holidays.
# Useful dates for the academic year 2016-17

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<th>Week</th>
<th>Dates</th>
<th>Term</th>
<th>Bank Holidays</th>
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<tr>
<td>01</td>
<td>03 – 07 October 2016</td>
<td>Autumn</td>
<td>Christmas Day – 25 December 2016</td>
</tr>
<tr>
<td>02</td>
<td>10 – 14 October 2016</td>
<td>Autumn</td>
<td>Boxing Day - 26 December 2016</td>
</tr>
<tr>
<td>03</td>
<td>17-21 October 2016</td>
<td>Autumn</td>
<td>New Year’s Day – 01 January 2017</td>
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<tr>
<td>04</td>
<td>24 – 28 October 2016</td>
<td>Autumn</td>
<td>Good Friday – 14 April 2017</td>
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<tr>
<td>05</td>
<td>31 October – 4 November 2016</td>
<td>Autumn</td>
<td>Easter Monday – 17 April 2017</td>
</tr>
<tr>
<td>06</td>
<td>07 – 11 November 2016</td>
<td>Autumn</td>
<td>Early May Bank Holiday – 01 May 2017</td>
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<tr>
<td>07</td>
<td>14 – 18 November 2016</td>
<td>Autumn</td>
<td>Spring Bank Holiday – 29 May 2017</td>
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<tr>
<td>08</td>
<td>21 – 25 November 2016</td>
<td>Autumn</td>
<td>Summer Bank Holiday – 28 August 2017</td>
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<tr>
<td>09</td>
<td>28 November – 02 December 2016</td>
<td>Autumn</td>
<td>College Closure Dates</td>
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<td>Note – access to RSM is restricted</td>
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<tr>
<td>11</td>
<td>12 – 16 December 2016</td>
<td>Autumn</td>
<td>Easter 2017: 12 April – 18 April 2017</td>
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<tr>
<td>12</td>
<td>19 – 23 December 2016</td>
<td>Christmas</td>
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<td></td>
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<td>Commemoration Day: 19 October 2016</td>
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<td>13</td>
<td>26 – 30 December 2016</td>
<td>Christmas</td>
<td>Postgraduate Awards Day: 3 May 2017</td>
</tr>
<tr>
<td>14</td>
<td>02- 06 January 2017</td>
<td>Christmas</td>
<td>Reading week</td>
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<tr>
<td>1 (15)</td>
<td>09 – 13 January 2017</td>
<td>Spring</td>
<td></td>
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<tr>
<td>2 (16)</td>
<td>16 – 20 January 2017</td>
<td>Spring</td>
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<tr>
<td>3 (17)</td>
<td>23 – 27 January 2017</td>
<td>Spring</td>
<td></td>
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<tr>
<td>4 (18)</td>
<td>30 January – 03 February 2017</td>
<td>Spring</td>
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<tr>
<td>5 (19)</td>
<td>06 – 10 February 2017</td>
<td>Spring</td>
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<td>6 (20)</td>
<td>13 – 17 February 2017</td>
<td>Spring</td>
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<td>7 (21)</td>
<td>20 – 24 February 2017</td>
<td>Spring</td>
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<td>8 (22)</td>
<td>27 February – 03 March 2017</td>
<td>Spring</td>
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<tr>
<td>9 (23)</td>
<td>06 – 10 March 2017</td>
<td>Spring</td>
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<td>10 (24)</td>
<td>13 – 17 March 2017</td>
<td>Spring</td>
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<td>11 (25)</td>
<td>20 -24 March 2017</td>
<td>Spring</td>
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<td>26</td>
<td>27 – 31 March 2017</td>
<td>Easter</td>
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<td>27</td>
<td>03 – 07 April 2017</td>
<td>Easter</td>
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<tr>
<td>28</td>
<td>10 – 14 April 2017</td>
<td>Easter</td>
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<td>29</td>
<td>17 – 21 April 2017</td>
<td>Easter</td>
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<tr>
<td>30</td>
<td>24 – 28 April 2017</td>
<td>Easter</td>
<td></td>
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<tr>
<td>1 (31)</td>
<td>01 – 05 May 2017</td>
<td>Summer</td>
<td></td>
</tr>
<tr>
<td>2 (32)</td>
<td>08 – 12 May 2017</td>
<td>Summer</td>
<td></td>
</tr>
<tr>
<td>3 (33)</td>
<td>15 – 19 May 2017</td>
<td>Summer</td>
<td></td>
</tr>
<tr>
<td>4 (34)</td>
<td>22 – 26 May 2017</td>
<td>Summer</td>
<td></td>
</tr>
<tr>
<td>5 (35)</td>
<td>29 May – 02 June 2017</td>
<td>Summer</td>
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<tr>
<td>6 (36)</td>
<td>05 – 09 June 2017</td>
<td>Summer</td>
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<tr>
<td>7 (37)</td>
<td>12 – 16 June 2017</td>
<td>Summer</td>
<td></td>
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<tr>
<td>8 (38)</td>
<td>19 – 23 June 2017</td>
<td>Summer</td>
<td></td>
</tr>
<tr>
<td>9 (39)</td>
<td>26 – 30 June 2017</td>
<td>Summer</td>
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You can also find useful information about key dates on the following websites:
- [http://www.imperial.ac.uk/admin-services/secretariat/information-for-staff/college-year-card/](http://www.imperial.ac.uk/admin-services/secretariat/information-for-staff/college-year-card/)
- [http://www.imperial.ac.uk/admin-services/registry/term-dates/](http://www.imperial.ac.uk/admin-services/registry/term-dates/)
1.6 Your student journey

Overview
As a taught postgraduate, you've already spent a significant amount of time at university, whether here at Imperial College London or elsewhere. Congratulations on your achievements so far; you've joined the leading Department for Bioengineering in the UK, at one of the best universities in the world.

Your programme of study in Biomedical Engineering will be complemented by a comprehensive programme of professional development, delivered by Imperial's Graduate School. This is a critical part of postgraduate study at Imperial. It includes over 100 free professional development courses to enable you to continually develop as a researcher and gain skills that will benefit your career.

You will all have a different journey, and different experiences during your time at Imperial. In the Department you will find many of your fellow students are studying on different programmes. This will be very beneficial for you in developing an interdisciplinary outlook, as it offers opportunities to engage with colleagues who specialise in different areas and have different background knowledge.

Bear in mind that some things at Imperial may be very different to previous institutions at which you may have studied. It is best not to make assumptions about rules and what you have to do—always ask your Module Leader, Personal Tutor, the Academic Tutor, or the Student Office if you’re not sure of something.

We hope that you will find the Department of Bioengineering to be a lively, inspiring place. As you know, university students are expected to take responsibility for their own learning and welfare, but there are lots of people and resources in place to support you, so please do make the most of them and ask for help or information if you need it.

Your MSc degree
As a student of the MSc Biomedical Engineering programme, you will gain technical knowledge, expertise and transferable skills in this exciting area. Many of our students come from other traditional engineering and physical science backgrounds such as Mechanical Engineering, Electrical and Electronic Engineering and Physics. The programme is designed to provide core material for all students, and then opportunities to specialise in a ‘stream’. The streams of the MSc Biomedical Engineering programme are:

- Biomechanics and Mechanobiology
- Biomaterials and Tissue Engineering
- Medical Physics and Imaging
- Neurotechnology

You may have moved from another university to attend Imperial College London, or perhaps you've moved internationally. It can take some time to adapt to the changes and you may feel overwhelmed. We understand this and would recommend that you get involved with Departmental life and also explore some of the clubs and societies outside of your academic area. London is a fantastic city so make sure you do some exploring as well.

Later in the handbook, there is a list of people and resources which you may find useful throughout your degree. We've also produced a Welcome Guide for you, which covers a lot of the information you'll need as a brand new student here, so make sure you read that as well as this handbook.
1.7 Who to speak to if you need help

There are a lot of people and resources in place to support you during your time at Imperial College London. Don’t suffer in silence - we take the welfare of our students very seriously indeed and will try to provide all the help that we can if you encounter problems of any sort. If we can’t help directly, then we will direct you to someone who can.

Contacts in the Department of Bioengineering

<table>
<thead>
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<th>Who</th>
<th>What can they help with?</th>
<th>How to contact them</th>
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<td><strong>Personal Tutor</strong></td>
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<tr>
<td>Academic issues</td>
<td>You will be told who your Personal Tutor is. There is an initial meeting during the Welcome Week, and after that the best way to contact them is via email to arrange a meeting.</td>
<td></td>
</tr>
<tr>
<td>Personal matters</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Postgraduate Tutor</strong>: Rob Krams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic issues</td>
<td><a href="mailto:r.krams@imperial.ac.uk">r.krams@imperial.ac.uk</a></td>
<td>44 (0) 20 7594 1473</td>
</tr>
<tr>
<td>Pastoral care</td>
<td></td>
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<tr>
<td><strong>Programme Director</strong>: Darryl Overby</td>
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</tr>
<tr>
<td>Programme and academic issues.</td>
<td><a href="mailto:d.overby@imperial.ac.uk">d.overby@imperial.ac.uk</a></td>
<td>+44 (0)20 7594 6376</td>
</tr>
<tr>
<td><strong>Academic Tutor</strong>: Martin Holloway</td>
<td></td>
<td></td>
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<tr>
<td>Academic issues</td>
<td><a href="mailto:m.holloway@imperial.ac.uk">m.holloway@imperial.ac.uk</a></td>
<td>44 (0) 20 7594 5176</td>
</tr>
<tr>
<td>Personal matters</td>
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<tr>
<td><strong>The Student Office</strong></td>
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<tr>
<td>Timetabling</td>
<td><a href="mailto:l.osullivan@imperial.ac.uk">l.osullivan@imperial.ac.uk</a></td>
<td>+44 (0)20 7594 9660</td>
</tr>
<tr>
<td>Teaching policies and procedures</td>
<td><a href="mailto:b.ross@imperial.ac.uk">b.ross@imperial.ac.uk</a></td>
<td>+44 (0)20 7594 5122</td>
</tr>
<tr>
<td>Illness and absences</td>
<td><a href="mailto:m.obrien@imperial.ac.uk">m.obrien@imperial.ac.uk</a></td>
<td>+44 (0)20 7594 9296</td>
</tr>
<tr>
<td>Interruption of studies</td>
<td><a href="mailto:samantha.kemp@imperial.ac.uk">samantha.kemp@imperial.ac.uk</a></td>
<td>+44 (0)20 7594 9115</td>
</tr>
<tr>
<td>Admissions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programme administration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Examinations</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Department Disability Officer</strong>: Faisal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disabilities and additional support</td>
<td><a href="mailto:bq-ddo@imperial.ac.uk">bq-ddo@imperial.ac.uk</a></td>
<td>+44 (0) 20 7594 6373</td>
</tr>
<tr>
<td><strong>Industrial Liaison Manager</strong>: Ferguson</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial placements</td>
<td><a href="mailto:robert.ferguson@imperial.ac.uk">robert.ferguson@imperial.ac.uk</a></td>
<td>+44 (0) 20 7594 6371</td>
</tr>
<tr>
<td>Networking, contacts and career advice</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bioengineering Librarian</strong>: Jacob</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Referencing and reference management software, plagiarism workshops, finding books, and using e-journals.</td>
<td><a href="mailto:mano.jacob@imperial.ac.uk">mano.jacob@imperial.ac.uk</a></td>
<td>+44 (0)20 7594 5598</td>
</tr>
<tr>
<td><strong>Student representatives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liaison between the student body and the Department, and other student organisations e.g. Imperial College Union</td>
<td>Find your representatives on the webpage: <a href="http://www.imperial.ac.uk/bioengineering/admin/current-undergraduate-students/staff-student-committee/">http://www.imperial.ac.uk/bioengineering/admin/current-undergraduate-students/staff-student-committee/</a></td>
<td></td>
</tr>
</tbody>
</table>
# College-wide resources

Outside the Department, the College provides extensive student support services.

<table>
<thead>
<tr>
<th>Resource</th>
<th>What sort of help is available?</th>
<th>Contact details</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Student Space website</td>
<td>Lots of helpful information and resources to help you live life well.</td>
<td><a href="http://www.imperial.ac.uk/student-space/">http://www.imperial.ac.uk/student-space/</a></td>
</tr>
<tr>
<td>College tutors</td>
<td>Confidential support for students, independent of your academic department, where you can discuss academic issues and all aspects of pastoral care.</td>
<td><a href="http://www.imperial.ac.uk/student-space/her-for-you/college-tutors-and-departmental-support/">http://www.imperial.ac.uk/student-space/her-for-you/college-tutors-and-departmental-support/</a></td>
</tr>
<tr>
<td>Imperial College Security</td>
<td>In case of any kind of fire, medical emergency, or threat, contact Security immediately.</td>
<td><a href="mailto:security.control@imperial.ac.uk">security.control@imperial.ac.uk</a> +44 (0) 20 7589 1000 Dial 4444 from any internal telephone.</td>
</tr>
<tr>
<td>Imperial College Health Centre</td>
<td>Doctors and nurses are available to provide care for a range of medical and psychological problems.</td>
<td><a href="mailto:imperialcollege.hc@nhs.net">imperialcollege.hc@nhs.net</a> +44 (0)207 58 49375/6 <a href="http://www.imperialcollegehealthcentre.co.uk">http://www.imperialcollegehealthcentre.co.uk</a></td>
</tr>
<tr>
<td>Student Counselling Service</td>
<td>Free and confidential short-term counselling is available to all students, to discuss any personal issue.</td>
<td><a href="http://www.imperial.ac.uk/counselling/">http://www.imperial.ac.uk/counselling/</a></td>
</tr>
<tr>
<td>Student Hub</td>
<td>Advice and information on a wide range of topics, including admissions, finance, accommodation, exchange programmes and documentation.</td>
<td><a href="http://www.imperial.ac.uk/student-hub/">http://www.imperial.ac.uk/student-hub/</a></td>
</tr>
<tr>
<td>International Student Support</td>
<td>General international student support, information on visas and immigration and the Academic Technology Approval Scheme (ATAS).</td>
<td><a href="https://www.imperial.ac.uk/study/international-students/">https://www.imperial.ac.uk/study/international-students/</a> +44 (0) 20 7594 8040</td>
</tr>
<tr>
<td>Chaplaincy</td>
<td>Chaplains and Faith Advisors from different faith backgrounds provide confidential support on personal and religious issues.</td>
<td><a href="http://www.imperial.ac.uk/chaplaincy/">http://www.imperial.ac.uk/chaplaincy/</a></td>
</tr>
<tr>
<td>Centre for Academic English</td>
<td>The Centre offers programmes, workshops, and other resources to help students develop their academic language and literacy.</td>
<td><a href="http://www.imperial.ac.uk/academic-english">http://www.imperial.ac.uk/academic-english</a></td>
</tr>
<tr>
<td>Imperial College Union Advice Centre</td>
<td>The Advice Centre is your first port of call if you are experiencing difficulties during your time at university.</td>
<td><a href="https://www.imperialcollegeunion.org/advice">https://www.imperialcollegeunion.org/advice</a></td>
</tr>
<tr>
<td>Imperial College Success Guides</td>
<td>Advice on developing the skills that you will need to help you through your degree.</td>
<td><a href="http://www.imperial.ac.uk/students/success-guide/">http://www.imperial.ac.uk/students/success-guide/</a></td>
</tr>
<tr>
<td>Careers Service</td>
<td>The Careers Service provides information on work placements, job opportunities, further study and careers advice.</td>
<td><a href="http://www.imperial.ac.uk/careers">http://www.imperial.ac.uk/careers</a></td>
</tr>
</tbody>
</table>
1.8 The Graduate School

Welcome from Professor Sue Gibson, Director of the Graduate School

The Graduate School has several roles but our main functions are to provide a broad, effective and innovative range of professional skills development courses and to facilitate interdisciplinary interactions by providing opportunity for students to meet at academic and social events. Whether you wish to pursue a career in academia, industry or something else, professional skills development training will improve your personal impact and will help you to become a productive and successful researcher.

Professional skills courses for Master’s students are called “Masterclasses” and they cover a range of themes, for example, presentation skills, academic writing and leadership skills (http://www.imperial.ac.uk/study/pg/graduate-school/professional-skills/masters/). All Masterclasses are free of charge to Imperial Master’s students and I would encourage you to take as many as you can to supplement your academic training. The Graduate School works closely with the Graduate Students’ Union (GSU) and is keen to respond to student needs so if there is an area of skills training, or an activity that you would like us to offer, but which is not currently provided, please do get in touch (graduate.school@imperial.ac.uk).

The Graduate School also runs a number of exciting social events throughout the year which are an opportunity to broaden your knowledge as well as to meet other students and have fun. Particular highlights include the Ig Nobel Awards Tour Show, the Chemistry Show and the 3 minute thesis competition. You should regularly check the Graduate School’s website and e-Newsletters to keep up to date with all the events and training courses available to you.

Finally, I hope that you enjoy your studies here at Imperial, and I wish you well.

Sue Gibson
Welcome from Dr Janet De Wilde, Head of Postgraduate Professional Development

I would like to welcome you to the Graduate School programme for postgraduate professional development. Our team of tutors come from a wide variety of experiences and we understand just how important it is to develop professional skills whilst undertaking postgraduate studies and research. Not only will this development improve success during your time at Imperial, but it will also prepare you for your future careers. We are continually working to develop the courses we offer and over this year you will see a range of new courses including face-to-face workshops, interactive webinars and online self-paced courses. I encourage you to explore and engage with the diverse range of opportunities on offer from the graduate school and I wish you well in your studies.

Janet De Wilde
I am delighted to welcome you to Imperial, and to the Graduate Students’ Union (GSU). I hope that your time here will be fulfilling and valuable, and the GSU is here to try and facilitate this.

Imperial College London is such a wonderful and transformative place that provides a unique and thrilling environment for research and for advanced studies, and the graduate students are a vital and valued part of the wider community of Imperial. Our graduate students are at the forefront of the research done. Therefore, at the GSU we ensure that the experience here fosters both academic achievement and personal development in our students.

The GSU is a University-wide representative body for postgraduate students at Imperial. It promotes the interests and welfare of its members, provides social and recreational activities and advocate for you and your opinions to the University and bodies external to the university. I encourage you to become an active member of the GSU – through involvement in your departments and the many University societies, and through our representational and campaigning activities.

I wish you all a fantastic time here at Imperial. Please take advantage of our rich community, and hope to meet you all soon.

Ahmed Shamso
gsu.president@imperial.ac.uk
Section two

Your degree programme
2.10 Programme description: MSc Biomedical Engineering

Biomedical engineering is a rapidly evolving interdisciplinary field that applies engineering principles and technology to medical and biological problems. With an ageing population and advances in technology, biomedical engineering plays an integral role in global issues such as healthcare, energy and environment.

Our one year MSc programme is split into 4 streams, so all student develop specialist knowledge.

Biomechanics and Mechanobiology
This stream focuses on bioengineering problems related to major diseases such as cardiovascular disease, glaucoma and bone and joint disease (osteoarthritis, osteoporosis).

These are major causes of death and of loss of quality of life, both in the UK and internationally, and the programme aims to prepare engineers for a career in industry and research in these rapidly growing key areas.

Biomaterials and Tissue Engineering
The Biomaterials and Tissue Engineering stream is offered jointly with the Department of Materials and focuses on the design and synthesis of new materials that will be used as implants or prostheses.

Medical Physics and Imaging
The Medical Physics stream trains graduates in the physical understanding required for healthcare and medical research, focusing on clinical imaging systems (especially MRI, ultrasound, x-ray and optical techniques), as well as the signal and image processing methods needed for design and optimal use of such systems in diagnosis and research.

Neurotechnology
This stream covers the development of new technology for the investigation of brain function with focus on the application of this knowledge to improve technology of wider benefit to society.

Teaching
The teaching in the programme varies across streams and modules but typically includes a combination of lectures, study groups, tutorials, practical classes and design projects. Assessment across the programme is also broad, with a range of assessment techniques used, such as: coursework, oral group and individual presentations, multiple-choice assessments, quizzes, written examinations and mastery tests.

The programme specifications can be accessed at: http://www.imperial.ac.uk/bioengineering/admin/msc/essential-information/

The Department’s competency standards can be accessed at: http://www.imperial.ac.uk/bioengineering/admin/msc/essential-information/

Further information, about programmes, for current students can be found at: http://www.imperial.ac.uk/bioengineering/admin/msc/.

Information about the Department of Bioengineering, including history, teaching and research information, can be found on our website at http://www.imperial.ac.uk/bioengineering/about/.

Information about Imperial College London, including history, strategy, finances, structure and governance can be found on the website at http://www.imperial.ac.uk/about/introducing-imperial/.
Programme Learning Outcomes

The Imperial Graduate Attributes are a set of core competencies which we expect students to achieve through completion of any Imperial College degree programme. The Graduate Attributes are available at: [www.imperial.ac.uk/students/academic-support/graduate-attributes](http://www.imperial.ac.uk/students/academic-support/graduate-attributes).

The Learning Outcomes differ slightly for each stream and are detailed below:

<table>
<thead>
<tr>
<th>Biomechanics and Mechanobiology</th>
<th>Knowledge and Understanding of:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Physiology of organs and cell function taught by lectures and problem classes</td>
</tr>
<tr>
<td></td>
<td>• Signal and image processing techniques taught by lectures and computer laboratory exercise</td>
</tr>
<tr>
<td></td>
<td>• Equipment and techniques to image the human body taught by lectures, group work and visits</td>
</tr>
<tr>
<td></td>
<td>• Equipment and techniques to acquire physiological and chemical information from the human body taught by lectures and laboratory classes</td>
</tr>
</tbody>
</table>

**Intellectual Skills:**

• Brainstorming for identifying hazards (risk analysis exercise)
• Critical review of scientific literature (Journal Club)

**Practical Skills:**

• Ability to perform original research by producing a dissertation
• Ability to perform data and statistical analysis
• Ability to present data (journal club)

**Transferable Skills:**

• Group work
• Initiative
• Critical thinking

<table>
<thead>
<tr>
<th>Biomaterials and Tissue Engineering</th>
<th>Knowledge and Understanding of:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Various components of the human body, their function and the effects of aging</td>
</tr>
<tr>
<td></td>
<td>• Vascular pathologies: Arthrosclerosis, aneurysms</td>
</tr>
<tr>
<td></td>
<td>• The major classes of biomedical implant materials, their means of fixation, stability and the procedures and physiological principles involved in the replacement of various parts of the body with implants or tissue engineered constructs.</td>
</tr>
<tr>
<td></td>
<td>• Advantages and disadvantages of current implants.</td>
</tr>
<tr>
<td></td>
<td>• The reasons of failure of implants in various clinical applications</td>
</tr>
<tr>
<td></td>
<td>• The relative merits of replacing a body part with a tissue engineering construct</td>
</tr>
<tr>
<td></td>
<td>• Drug delivery devices</td>
</tr>
<tr>
<td></td>
<td>• How devices can be surface modified to improve function</td>
</tr>
<tr>
<td></td>
<td>• Characterisation of material: biomaterial-tissue and biomaterial-cell interfaces</td>
</tr>
<tr>
<td></td>
<td>• Challenges involved with transfer of laboratory inventions to a clinical product</td>
</tr>
</tbody>
</table>

**Intellectual Skills:**

• Brainstorming for identifying hazards (risk analysis exercise)
• Critical review of scientific literature (Journal Club and literature review)

**Practical Skills:**

• Ability to communicate alternative means to repair or replace parts of the body to both healthcare professionals and patients.
• Ability to perform original research by producing a dissertation
<table>
<thead>
<tr>
<th>Medical Physics and Imaging</th>
<th><strong>Knowledge and Understanding of:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Human physiology and cell function taught by lectures and problem classes</td>
</tr>
<tr>
<td></td>
<td>Signal and image processing techniques taught by lectures and computer laboratory exercise</td>
</tr>
<tr>
<td></td>
<td>Equipment and techniques to image the human body taught by lectures, group work and visits</td>
</tr>
<tr>
<td></td>
<td>Equipment and techniques to acquire physiological and chemical information from the human body taught by lectures and laboratory classes</td>
</tr>
<tr>
<td></td>
<td>Use of Radiation in therapy and diagnosis taught by lectures.</td>
</tr>
<tr>
<td><strong>Intellectual Skills</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brainstorming for identifying hazards (risk analysis exercise)</td>
</tr>
<tr>
<td></td>
<td>Critical review of scientific literature (Journal Club)</td>
</tr>
<tr>
<td><strong>Practical Skills</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ability to perform original research by producing a dissertation</td>
</tr>
<tr>
<td></td>
<td>Ability to perform data and statistical analysis</td>
</tr>
<tr>
<td></td>
<td>Ability to give presentations</td>
</tr>
<tr>
<td><strong>Transferable Skills</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group work</td>
</tr>
<tr>
<td></td>
<td>Initiative</td>
</tr>
<tr>
<td></td>
<td>Critical thinking</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Neurotechnology</th>
<th><strong>Knowledge and Understanding of:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Systems neuroscience, with particular emphasis on applications of technology to neuroscience, taught by lectures and problem classes</td>
</tr>
<tr>
<td></td>
<td>Signal and image processing techniques taught by lectures and computer laboratory exercise</td>
</tr>
<tr>
<td></td>
<td>Equipment and techniques to image the human body taught by lectures, group work and visits</td>
</tr>
<tr>
<td></td>
<td>Equipment and techniques to acquire physiological and chemical information from the human body taught by lectures and laboratory classes.</td>
</tr>
<tr>
<td><strong>Intellectual Skills</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brainstorming for identifying hazards (risk analysis exercise)</td>
</tr>
<tr>
<td></td>
<td>Critical review of scientific literature (Journal Club)</td>
</tr>
<tr>
<td><strong>Practical Skills:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ability to perform original research by producing a dissertation</td>
</tr>
<tr>
<td></td>
<td>Ability to perform electrophysiological recordings from sensory nerve fibres</td>
</tr>
<tr>
<td></td>
<td>Ability to perform data and statistical analysis</td>
</tr>
<tr>
<td></td>
<td>Ability to present data (journal club)</td>
</tr>
<tr>
<td><strong>Transferable Skills</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group work</td>
</tr>
<tr>
<td></td>
<td>Initiative</td>
</tr>
<tr>
<td></td>
<td>Critical thinking</td>
</tr>
</tbody>
</table>
## 2.11 Programme structure

<table>
<thead>
<tr>
<th>Medical Physics and Imaging Stream</th>
<th>Biomechanics and Mechanobiology Stream</th>
<th>Neurotechnology Stream</th>
<th>Biomaterials and Tissue Engineering Stream</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core modules plus 1 compulsory plus 4 options</td>
<td>Core modules plus 1 compulsory plus 4 options</td>
<td>Core modules plus 2 compulsory plus 3 options</td>
<td>Core modules plus 3 compulsory plus 2 options</td>
</tr>
<tr>
<td>~Advanced physiological monitoring and data analysis (30C, T1)</td>
<td>~Biomechanics (30C, T1)</td>
<td>~Brain machine Interfaces (30C, T2)</td>
<td>~Biomaterials (30C, T1)</td>
</tr>
<tr>
<td>Plus 4 options - at least 2 must be from the following 4 options</td>
<td>Plus 4 options</td>
<td>Plus 4 options</td>
<td>Advanced Biomaterials (30C, T2)</td>
</tr>
<tr>
<td>Radiotherapy and radiobiology (30O, T2)</td>
<td>~Biomaterials (30O, T1)</td>
<td>Plus 3 options</td>
<td>Advanced Tissue Engineering (30C, T2)</td>
</tr>
<tr>
<td>Nuclear medicine (30O, T2)</td>
<td>Physiological fluid mechanics (30O,T2)</td>
<td>~ Advanced physiological monitoring and data analysis (30O, T1)</td>
<td>Plus 2 options</td>
</tr>
<tr>
<td>~Advanced medical imaging (30O, T2)</td>
<td>Cellular biomechanics (30O, T2)</td>
<td>~Hearing and speech processing (30O, T1)</td>
<td>~Biomechanics (30O, T1)</td>
</tr>
<tr>
<td>~Image processing (30O, T2)</td>
<td>Orthopaedic Biomechanics (30O, T1)</td>
<td>Human neuromechanical control and learning (30O, T2)</td>
<td>~Hearing and speech processing (30O, T1)</td>
</tr>
<tr>
<td>And the rest from this list below</td>
<td>~Hearing and speech processing (30O, T1)</td>
<td>~Biomimetics (30O, T2)</td>
<td>~Image processing (30O, T2)</td>
</tr>
<tr>
<td>~Biomechanics (30O, T1)</td>
<td>Health economics &amp; decision making (30O,T2)</td>
<td>~Advanced medical imaging (30O, T2)</td>
<td>~Advanced medical imaging (30O, T2)</td>
</tr>
<tr>
<td>~Biomaterials (30O, T1)</td>
<td>~Biomimetics (30O, T2)</td>
<td>~Image processing (30O, T2)</td>
<td>Orthopaedic Biomechanics (30O, T1)</td>
</tr>
<tr>
<td>Health economics &amp; decision making (30O,T2) OR (cannot take both)</td>
<td>Human neuromechanical control and learning (30O, T2)</td>
<td>~Machine Learning and neural Computation (30O, T1)**</td>
<td>~Advanced physiological monitoring and data analysis (30O, T1)</td>
</tr>
<tr>
<td>~Computational neuroscience (30O, T2)</td>
<td>~Introduction to Robotics (30O,T2)</td>
<td>~Introduction to Robotics (30O,T2)</td>
<td>~Introduction to Robotics (30O,T2)</td>
</tr>
<tr>
<td>~Biomimetics (30O, T2)</td>
<td>~Introduction to Robotics (30O,T2)</td>
<td>~Introduction to Robotics (30O,T2)</td>
<td>Biomimetics (30O, T2)</td>
</tr>
<tr>
<td>~Hearing and speech processing (30O, T1)</td>
<td>~Introduction to Neuroscience (30O,T1)</td>
<td>~Introduction to Neuroscience (30O,T1)</td>
<td>Health economics &amp; decision making (30O,T2)</td>
</tr>
<tr>
<td>For additional credit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

--With module leader's permission, students may audit Medical Device Entrepreneurship (BE9-MMDEVEN, T1), but it cannot be taken for credit.

--*** It is strongly recommended students of the Neurotechnology stream take this option as there is synergy with the Term 2 modules.

- The first number within the bracket following each module indicates contact hours. The letters C and O following each module mean Compulsory and Optional respectively. The last number within the bracket following T denotes which term the module is delivered. E.g. T1 means the first term. ~ indicates that this is also a UG module.

- Not all permutations of modules may be taken due to timetabling constraints, and some modules may be capped due to space constraints.

- If you wanted to take an option outside your stream, please discuss with Student Office initially: please email Britta at b.ross@imperial.ac.uk

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Page 19 of 71
### 2.12 Programme organisers and module leaders

#### Programme Organisers

- **MSc Programme Director**
  - **Dr Darryl Overby**

#### Module leaders

<table>
<thead>
<tr>
<th>Module</th>
<th>Programme Organisers</th>
<th>Coordinators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical Physics and Imaging</strong></td>
<td>Dr Robert Dickinson</td>
<td>Dr Darryl Overby</td>
</tr>
</tbody>
</table>
| **Biomechanics and Mechanobiology Stream Coordinator** | Prof Rob Krams | **Student Administrators (4x)**
  - Ms Britta Ross
  - Ms Samantha Kemp
  - Ms Leigh Whittle
  - Ms Tracey Glenister
| **Neurotechnology Stream Coordinator** | Dr Andrei Kozlov | **Biological and Tissue Engineering Stream Coordinator** |
  - Dr Andrei Kozlov
| **Medical Device Certification** | Dr Warren Macdonald  | Dr Torben Reichenbach                             |
| **Journal Club**               | Stream co-ordinators | Dr Darryl Overby                                  |
| **Advanced Medical Imaging**   | Dr Rob Dickinson     | Dr Darryl Overby                                  |
| **Biomaterials and Tissue Engineering** | Dr Theoni Georgiou | Dr Darryl Overby                                  |

#### Stream Coordinators

- Medical Physics and Imaging
  - **Dr Robert Dickinson**
- Biomechanics and Mechanobiology
  - **Prof Rob Krams**
- Neurotechnology
  - **Dr Andrei Kozlov**
- Biomaterials and Tissue Engineering
  - **Dr Theoni Georgiou**

#### Module Specifiers

- **Programme Organisers**
  - **Prof Robert Krams**
  - **Dr Anil Bharath**
  - **Prof Etienne Burdet**
  - **Dr Kuldip Nijran**
  - **Dr Tobias Reichenbach**
  - **Prof Martyn Boutelle**

- **Module Specifiers**
  - **Dr Warren Macdonald**
  - **Dr Warren Macdonald**
  - **Dr Tobias Reichenbach**
  - **Prof Martyn Boutelle**
  - **Prof Etienne Burdet**
  - **Prof Darryl Overby**
  - **Prof Darryl Overby**
  - **Prof Darryl Overby**
  - **Prof Darryl Overby**
  - **Prof Darryl Overby**
  - **Prof Darryl Overby**
  - **Prof Darryl Overby**
Core modules for all streams

<table>
<thead>
<tr>
<th>MSc Biomedical Engineering (core modules for all streams)</th>
<th>Module</th>
<th>Term</th>
<th>Module leader</th>
<th>Assessment details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Systems physiology</td>
<td>1</td>
<td>Prof Robert Krams</td>
<td>Written exam</td>
</tr>
<tr>
<td></td>
<td>Statistics and data analysis</td>
<td>1</td>
<td>Dr Warren Macdonald</td>
<td>Written exam</td>
</tr>
<tr>
<td></td>
<td>Biomedical imaging</td>
<td>1</td>
<td>Dr Robert Dickinson</td>
<td>Written exam</td>
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<td></td>
<td>Journal club</td>
<td>1</td>
<td>Stream co-ordinators</td>
<td>Coursework (progress test)</td>
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<tr>
<td></td>
<td>Medical device certification</td>
<td>1</td>
<td>Dr Warren Macdonald</td>
<td>Coursework (paper review)</td>
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Stream-specific programme structure information

Biomechanics and Mechanobiology Stream

<table>
<thead>
<tr>
<th>Overall weighting (%)</th>
<th>Programme component</th>
<th>Module</th>
<th>Module % weighting</th>
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<td>Core modules</td>
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<td></td>
<td></td>
<td>Biomedical imaging</td>
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<tr>
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Biomaterials and Tissue Engineering Stream

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<th>Module</th>
<th>Module % weighting</th>
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<tr>
<td>30%</td>
<td>Core modules</td>
<td>Systems physiology</td>
<td>25%</td>
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<tr>
<td></td>
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<td>Statistics and data analysis</td>
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<td>Biomedical imaging</td>
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<td>Journal club</td>
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Medical Physics and Imaging Stream

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<th>Module</th>
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<td>Systems physiology</td>
<td>25%</td>
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<tr>
<td></td>
<td></td>
<td>Statistics and data analysis</td>
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<td>Biomedical imaging</td>
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<td>Journal club</td>
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<td>Medical device certification</td>
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<tr>
<td>30%</td>
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<td>Project</td>
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Neurotechnology Stream

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<th>Module</th>
<th>Module % weighting</th>
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<tbody>
<tr>
<td>30%</td>
<td>Core modules</td>
<td>Systems physiology</td>
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<td></td>
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<td>Statistics and data analysis</td>
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<td></td>
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<td>Biomedical imaging</td>
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<td>Journal club</td>
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<td></td>
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<td>Medical device certification</td>
<td>12.5%</td>
</tr>
<tr>
<td>30%</td>
<td>Specialist modules</td>
<td>Brain-Machine Interfaces</td>
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<td></td>
<td></td>
<td>Computational Neuroscience</td>
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<tr>
<td>40%</td>
<td>Project</td>
<td>MSc Individual Project</td>
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Further information
You can access full information about programme structure and required levels of achievement in the Regulations for the Award of Honors, available online via the Departmental website at http://www.imperial.ac.uk/bioengineering/admin/msc/.

Module descriptors
Full module descriptors for all years can be accessed via the Department website, at: http://www.imperial.ac.uk/bioengineering/admin/msc/options/?programme=B9A1&year=year-1.

Please note that module descriptors are updated during the summer period, and may be affected by factors such as timetabling constraints, and therefore the information provided may change in advance of the beginning of the autumn term.

Choosing elective modules
The Department will provide you with instructions for choosing your elective modules. MSc students start to choose their elective modules in week 1 of the autumn term; there may be scope to change modules in the first few weeks of term if required. You will be given more information about this at the start of term.

Please note that not all combinations of optional modules may be possible due to timetabling constraints.
2.13 Projects

During your time at Imperial you will work on a number of projects as part of your programme of study. You will be given a Project Handbook which provides you with lots of useful information to help with your project work. The Project Handbook will also clarify all regulations and expectations in regards to project marking, assessment, report structure and page/word limits.

You can find out more about projects on the website at: http://www.imperial.ac.uk/bioengineering/admin/msc/projects/.

You can find out more about some of the project work previous students have completed on the website at: http://www.imperial.ac.uk/bioengineering/study/student-impact/.

Past MSc Project Titles

The following are the titles of some projects which were available to MSc students in the past academic year. They are given here to indicate the range of opportunities, and to indicate the material which we have on file and which you may want to consult during your own project. As the Department evolves, its interests shift and in the coming year the projects on offer will not necessarily be in the same areas as those given here.

Projects chosen in 2014-15

Biomaterials and Tissue Engineering

<table>
<thead>
<tr>
<th>Protein-templated nanoparticles for targeted delivery</th>
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<tbody>
<tr>
<td>Delivery of metal and metal oxide nanoparticles directly to specific biological targets enables both imaging and therapy of diseases such as cancers. To target specific cell types and tumours, nanoparticles need to be chemically bound to selected protein or peptide molecules requiring complex multi-step chemistry that can limit applicability. An alternative approach is to use protein molecules directly as nucleation sites for nanoparticle growth, i.e. to grow particles directly within the protein molecules of interest. The project will investigate the potential of this approach for generating disease-targeting nanoparticles.</td>
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<tr>
<th>Nanoparticles for Cancer Treatment</th>
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<tr>
<td>Small bioactive glass particles can be taken up by cells without them changing cell behaviour. The aim of this project is to develop particles that will be taken up by cancer cells and when they are inside the cancer cells release ions that will kill the tumour cells. The project will be lab based and involve particle synthesis and testing, including imaging and degradation studies.</td>
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<tr>
<th>Antibacterial titanium implants</th>
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<tr>
<td>As resistance to antibiotics increases, alternatives for fighting/ preventing infection are needed. Silver ions are known to kill bacteria. Titanium alloy implants are the most common medical devices in orthopaedics and dentistry. Smith and Nephew, a multinational medical device company, have developed a process for introducing silver into the surface of their implants. They do not yet know in what form the silver is incorporated, its 3-D distribution and depth, or what variables affect silver ion release. Project Aims: To investigate process (manufacturing) variables on the nanoporosity of the surface and incorporation of silver and its release into simulated body fluids. The project will be in close collaboration with Smith and Nephew. It will involve doing the surface treatment of titanium implants provided by the company and characterising the product.</td>
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<th>Hybrid scaffolds for cartilage tissue engineering</th>
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<td>Tissue engineering combines biology and materials engineering principles to regenerate damaged tissue to its original function. Temporary templates (scaffolds) must be developed to guide tissue repair with different mechanical properties depending on the application. For cartilage regeneration, the scaffolds must have mechanical properties mimicking cartilage. Composites are required, but conventional composites will not work. This project will involve the development of new hybrids (nanocomposites) and the tailoring of their properties to match cartilage. The project will be lab based and involve materials</td>
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chemistry, processing and then characterisation by imaging, degradation studies and mechanical testing. Successful scaffolds will be tested in cell culture.

**Extracellular induction of hematopoietic maintenance genes by human mesenchymal stem cells**

Human mesenchymal stem cells (hMSCs) are an invaluable part of the hematopoietic stem cell (HSC) niche in bone marrow. However, the extracellular cues that stimulate expression of HSC maintenance genes in hMSCs remain unexplored. In this project, we are taking a modular, bottom-up approach to identify outside-in signals for inducing up-regulated or de novo expression of HSC maintenance genes in order to construct an in vitro recapitulation of the complex bone marrow microenvironment.

**Graphene oxide polymer particles for therapy**

Graphene oxide has many interesting properties. This project will focus on the photothermal property of graphene oxide that can be used to kill bacteria and cancer cells. Specifically graphene oxide polymer based nanoparticles will be investigated. Polymers will be used in order to stabilise graphene oxide in water and facilitate the attachment of further functional groups. This study will involve both the fabrication and characterisation of polymers and the graphene oxide-polymer particles.

**Biomechanics and Mechanobiology**

**Device for measuring femoral movement at the knee**

How the knee moves during normal activities is difficult to quantify accurately. This is mostly due to significant relative movement between the skin surfaces and the underlying skeletal structures. In this project a prototype method for allowing the tracking of the femur at the knee will be re-engineered to better quantify femoral movement. This is a highly relevant clinical project that will result in a device to be used in an orthopaedic outpatient clinic.

**Various projects involving fluid mechanics in the eye**

The eye is an exquisite organ that is filled with two main fluids: vitreous humour and aqueous humour. Many processes that are vital for maintaining the health and function of the organ are dependent on the mechanics underlying them. It is possible for this project to be chosen by more than one student, as there are several subprojects available, each involves different skills. Subprojects include:

a. Modelling flow in the tear ducts of the eye
b. The tear film of the eye
c. Modelling of the motion of vitreous humour within the eye
d. Investigation of the artiflex lens device in the eye
e. Improved treatment for retinal detachment - scleral buckle

**Functional Electrical Stimulation to lower joint contact forces**

Functional electrical stimulation (FES) allows muscle contractions to be driven by an external stimulus. This has the prospect of changing how people move and load their bones and joints so that the effects of joint disease and pain are reduced. In this project FES will be used to reduce loading on the knee joint. This work will be in collaboration with researchers in the group who are using FES and musculoskeletal modelling for other pathologies of the knee.

**Composite surrogate material for lung tissue**

The lung is a very complex mechanical system. Lung like many soft tissues in the body has a very complex mechanical behaviour when subject to various loading conditions. Most soft biological tissues also exhibit significant strain rate sensitivity. This project aims to develop and test a surrogate soft solid composite material to match the bulk visco-elastic/plastic properties of lung tissue. The project will involve determining initial estimates of lung properties under compression and shear. This data will then be compared to a surrogate material such as gelatine. This gel will then be modified using filler material to create pores and inclusions. Micromechanical approaches will be exploited to design this composite to match the rate sensitive behaviour of lung tissue.

**Mechanical behaviour of human trabecular bone during across strain rates measured with multi-scale imaging techniques combined with mechanical testing**

Strain rates applied to body tissues can vary enormously, from that seen during normal walking, estimated as in the range of 0.002 s\(^{-1}\), rising to 0.05 s\(^{-1}\) during downhill running. Higher rates will be seen during sport or recreational activities, rising even higher in the instance of traumatic injury. The strain rates experienced during blast can be orders of magnitude higher, with an associated increase in
the damage sustained. It has been shown previously increase in stiffness and reduced toughness in bone tissue during high strain-rate loading cannot be explained by macro level mechanical tests alone, but must involve changes in the bone lamellar and osteon and fibrillar level. The precise mechanisms for this behaviour have not been shown in previous studies. Therefore the aim of this study is to investigate mechanical behaviour of trabecular bone during cross strain rates using multi scale imaging techniques such as high speed videography, synchrotron X-ray diffraction and confocal microscopy and linked those mechanical properties to macroscopic bones fractures seen in blast injuries. Student will carry out tensile and compression mechanical testing on human trabecular bone specimens using a custom made mechanical testing machine at Imperial College London and UK synchrotron X-ray facility at Diamond Light Source Ltd. Oxfordshire.

Medical Physics and Imaging

Single ultrasonic element with dual non-invasive therapy and monitoring capabilities

Advances in focused ultrasound technologies have led to the development of a wide range of noninvasive therapeutic techniques. In these methods, ultrasound is generated from a curved transducer, which propagates through several layers of tissue and converges to a small focal volume deep in the body. The localised ultrasound can heat, push, expand, and contract the tissue leading to a wide range of bioeffects including heating of tumours to destroy cancer, opening of brain capillaries to enhance drug uptake, pore formation in cell membranes to enhance cell transfection, and clot dissolution to treat blocked arteries. Yet the same noninvasive feature, which makes this technology clinically attractive, makes controlling of thermal and mechanical forces deep in the body difficult. Previous studies including the supervisors previous work have developed methods to listen to the acoustic emissions generated from the diverse range of ultrasonic phenomena in order to predict therapeutic outcomes. Yet the ultrasound excitation elements and detection elements are typically distinct from each other, forcing the placement of the elements at separate locations. This arrangement reduces achievable excitation volumes and detection resolutions while increasing the cost of the ultrasonic system. The aims of this project is to (1) understand how ultrasound can be generated and captured from the same transducer, (2) design the appropriate transducer and filters to extract received emissions, and (3) create a single ultrasonic element transducer capable of both therapy and monitoring of ultrasonic applications.

Numerical simulations and experimental investigations of microbubble doppler effects in long-pulse ultrasound therapy

Focused ultrasound in conjunction with pre-formed systemically administered microbubbles have emerged as a non-invasive and targeted therapeutic system with potential use in the treatment of various pathologies. Bioeffects induced by the interaction of ultrasound and microbubbles are mostly dictated by the microbubble dynamics within the vasculature. Whereas a large body of work has focused on imaging applications, there remains poor understanding of these dynamics in the therapeutic regime. The aim of this project is to successfully model the microbubble cloud movement within a vascular network under long-pulse therapeutic ultrasound exposure and understand the correlated acoustic emissions. The student will develop numerical models of the ultrasound-microbubble-surrounding medium interactions, i.e. primary radiation forces, secondary radiation forces, drag forces etc. Many-body simulations (MBS) applied in other areas of Physics (based on methods such as the particle mesh or the PM-Tree) will be implemented here to approach the complex problem of the microbubble cloud mechanics during long-pulse therapeutic sonication. Theoretical results will be compared with optical and acoustic experimental data acquired by the student, with focus on the detected Doppler shifts in the acoustic emissions of the translating microbubbles. The successful applicant will join the Noninvasive Surgery and Biopsy laboratory and will have the opportunity to work in a vibrant and multidisciplinary environment, in collaboration with experts in Engineering, Physics, Computer Science and Biology. The project can be extended according to the interests of the student.

Real-time monitoring of ultrasound therapy

Focused ultrasound and circulating microbubbles have been successfully tested in vivo in diverse therapeutic applications such as targeted drug delivery, capillary-opening techniques, sonoporation etc. The success and the safety of an ultrasound-based, microbubble-seeded therapy largely depend on the spatiotemporal distribution of the acoustic cavitation activity within the focal volume, where the therapeutic effect occurs. Thus, a reliable method of spatiotemporally resolving the microbubble acoustic activity is needed. An emerging approach for the real-time monitoring of cavitation activity is the Passive Acoustic Mapping (PAM) method. Briefly, in PAM acoustic signals are captured using a multi-element linear array and then post-processed in order to localise the emitting sources. Whereas the resolution of the technique in the
The lateral dimension is satisfactory, interference patterns arising in the reconstruction process result in poor axial resolution. Furthermore, the technique is so far restricted in 2-D maps, thus rendering the localisation of acoustic sources beyond the elevational focus impossible.

The aim of this project is to develop algorithms in order to enhance the performance of the PAM technique, especially regarding the amelioration of its axial resolution. Briefly, we will apply the available beam-forming approaches in our system (starting from the Robust Capon Beamforming algorithm) and investigate ways to optimise the acoustic map reconstruction process. Furthermore, the idea of acquiring 3D passive acoustic maps will be explored, by using our automated 3D positioning system. The student will conduct in vitro phantom experiments in order to test the performance of the algorithm and, if applicable, will be given the opportunity to analyse in vivo data. The project can be extended according to the interests of the student.

**Device for temporary loop ileostomy**

Temporary loop ileostomy is carried out in order to protect a distal bowel anastomosis (bowel join) is carried out in order to protect a distal bowel anastomosis (bowel join). Following the bowel surgery the ileostomy protects the bowel during healing. Once the bowel has healed the ileostomy is reversed but this requires a further operation.

The project is to design a fluid switch that be used to divert the colon contents to the ileostomy, and then be reversed without a further operation. The device will be a plastic part, perhaps with remote operation.

**Interventional MRI positioning using an IR sensor**

This work will help develop a clinical tool and protocol to support imaging during interventional work at St Marys Hospital. An optical/IR sensor array will be used to track a positioning device and navigate through a series of images in 3D. This will include some programming and possibly building a wireless transmitter. This project would be most suited for someone with a strong interest in electronics and some experience in programming in MatLab.

**Phase Encoded Artefact Suppression**

Phase-Encoded Artefact Suppression (PEAS)

A student is required to assist in development of a novel pulse sequence for reduced-artefact imaging of metal implants.

This sequence will use a phase-encoded-only acquisition for 3D imaging, which is traditionally a method too slow to be put to clinical use. The student will conduct research to find a suitable method of undersampling (compressed sensing) and implement this into the PEAS pulse sequence on a Siemens MRI system, and also handle the corresponding offline reconstruction algorithm. A good working knowledge of MATLAB software and interest in image-processing would be desirable for this project.

**Neurotechnology**

**Cybathlon: Development of Powered Arm Prosthetic**

A project to develop a powered arm prosthetic to take part in the Cybathlon. Details of the Cybathlon can be found at: [http://www.cybathlon.ethz.ch/en/](http://www.cybathlon.ethz.ch/en/)

**Three-dimensional mapping of the dopamine pathway to the prefrontal cortex**

Working memory (WM) allows us to temporarily store task-relevant information, such as performing mental arithmetic or remembering a phone number. A central locus of working memory processing is the prefrontal cortex (PFC), where some neurons display sustained elevations in firing during WM tasks. Interestingly, when a WM task is unsuccessful, these sustained firing rates are not present, indicating a link between this neural activity and success or failure of the WM task.

One reason why we might fail at a working memory task is the presence of a distractor, which interrupts the neural activity in the PFC and destroys the WM representation. Our ability to resist these distractors seems to crucially rely on dopamine (DA) levels in the PFC, as people with imbalances in DA (such as schizophrenic or ADHD patients) have profound deficits in WM performance.

PFC DA originates from DA neurons in the midbrain, the axons of which traverse many millimeters to reach their destination. However how and where exactly DA has its effect in PFC is unknown. We are now able to selectively label the DA pathway projecting to PFC, enabling a thorough characterization of this innervation.

This project would involve using novel whole-brain imaging techniques to map the pathway of DA neurons to the PFC in 3D, and analyzing density distribution of DA axons within different PFC areas and...
different cortical layers. Therefore this project would be ideally suited to a person with interests in large-scale neural anatomy and good knowledge of image processing techniques.

### Online optogenetic manipulation of neural populations in vivo

Neural spike trains in primary cortical areas can reliably encode many features of sensorimotor activity. Our understanding of this code is far from complete, but there is ample evidence that stimulus features are encoded through alterations in neural firing rate (a rate code). However, individual neurons typically only respond to a small subset of stimulus space: for example, individual neurons in the auditory cortex only fire spikes in response to relatively narrow bands of sound frequency. As such, accurate representations of the sensory world typically require the concerted activity of large numbers of neurons (a population code).

Novel recording technologies now allow experimenters to record from many different cortical sites simultaneously and to control neural activity with light (via optogenetic probes such as channelrhodopsin). In our lab, we use silicon microelectrodes with up to 64-closely spaced electrode recording sites. These electrodes allow the spiking activity of up to 100 neurons to be recorded simultaneously. However, extracting the responses of each individual cell from these recordings requires complex processing which requires time (usually several hours), so neural responses must be determined offline. Therefore, because we know little about the individual tuning of cells during the recording, only low-resolution receptive field mapping is possible.

The aim of this project is to develop an algorithm in Matlab and/or LabView to perform online conversion of light evoked neural spike trains. This information will be used to calibrate the laser power to optimally stimulate distinct populations of neurons.

This project requires the manipulation of large data sets, and ideally the implementation of a flexible user-friendly interface, therefore excellent coding skills are a must. Data and guidance will be provided by a postdoc in the lab and there will be an opportunity to observe and assist in the collection of electrophysiological recordings.

### Automated home-cage behavioural testing in rodents

To understand the function of the brain it is necessary to understand the language of the brain, the neural code, and the thoughts and actions it’s function leads to. This requires two approaches: measurement of the neural code (often in animals) and measurement of the behaviour it relies on (often in humans). The accuracy of these data relies on two assumptions: the first is neurons in animals must do the same things as neurons in humans and the second is that this underlies the same behaviour in animals as it does in humans. Recently there has been a greater drive to collect neural data in awake-behaving animals allowing neural data to be compared directly with behaviour of the same subject it was collected from. Unfortunately training animals to complete the same simple tasks as a person is often not possible. In essence humans are smarter than animals. This means that training animals on psychophysical tasks often take months using up much of the neuroscientists time. In addition even after months of training the animal might turn out to be poor at the task. The reason this takes so much time is that animals are only trained during brief periods of the day where the experimenter transports the animal to a test area and the supervises learning (or lack thereof). This process is fraught with problems, for example transporting and handling the animals often scares the animal, the animal is then expected to learn in a brief time window and the whole time the researcher must be present. One way this could all be avoided is by using an automated behavioural setup located inside the animal’s home cage. This way the animal would not need to be moved or handled by the experimenter, the animal could initialise at any time of the day and as often as it likes and (best of all) the experimenter would not need to supervise learning. This would allow large quantities of animals to be trained with the minimum of effort.

This project would be to design and build a simple operant behavioural rig to test auditory discrimination of mice in their home cages. This project suits a person with a hands-on approach but with some knowledge of basic coding e.g. in Matlab.

### Computational modelling of the peripheral nervous system

Bioelectronic medicine, in which devices connected to groups of individual nerve fibres are used to control the patterns of electrical signals to restore health to organs and biological functions, has been suggested to have the potential to make major advances in the treatment of conditions resistant to drugs, including diabetes, obesity, hypertension and pulmonary diseases (Famm et al, Nature 496:159-61, 2013). The development of bioelectronic medicines, however, is contingent upon the existence of suitable technology for monitoring and perturbing activity in peripheral nerve fibres; in particular, being able to read out and interpret signals carried by a peripheral nerve fibre is an essential milestone.

In this project, we will develop a detailed computational model of the electrical activity of peripheral nerves, including in particular the vagus nerve. This model should take into account the presence of...
multiple fibres with differing properties (fibre diameter, myelinated versus unmyelinated, etc) and produce as an output the type of signals produced by nerve cuff electrodes. We will make use of NEURON compartmental modelling software, wrapping it in Python in a similar way to the analogous LFPy. The project will suit a student with a strong computational and programming background, and preferably experience with Python.

### Decoding algorithms for interfacing with the peripheral nervous system

Bioelectronic medicine, in which devices connected to groups of individual nerve fibres are used to control the patterns of electrical signals to restore health to organs and biological functions, has been suggested to have the potential to make major advances in the treatment of conditions resistant to drugs, including diabetes, obesity, hypertension and pulmonary diseases (Famm et al, Nature 496:159-61, 2013). The development of bioelectronic medicines, however, is contingent upon the existence of suitable technology for monitoring and perturbing activity in peripheral nerve fibres; in particular, being able to read out and interpret signals carried by a peripheral nerve fibre is an essential milestone. In this project, we will develop decoding algorithms capable of reading out both continuous physiological signals, and discrete events, from peripheral nervous system (PNS) electrical signals. These algorithms will be applied to a variety of datasets collected by members of a research network in Bioelectronic Medicines.

The project would suit a student with a strong background in signal processing machine learning, information theory or similar areas, and experience with programming in MATLAB.
2.14 Academic feedback

Coursework Feedback
During term time, you will be provided with feedback on your coursework within two weeks of submitting it. If coursework is submitted out of time (i.e. in vacation periods) then the two week period begins at the start of the new term.

Feedback may be provided in one of a number of formats, including:

- Oral (during or after lectures, personally or as a group feedback session)
- Personal (discussion with academics during office hours)
- Interactive (problem solving tutorials with GTAs & study groups)
- Written (solutions/model answers to coursework)

In line with College policy, the Department does not provide feedback on written examinations. Preliminary exam results will be provided to students as letter grades, and numerical results will be published after the meeting of the final Board of Examiners.

Remember, if you receive marked coursework back which has not been submitted electronically, please return it to the Student Office for archiving within two weeks.

This is important for assessment by external examiners.

Monitoring of progress
We want all of our students to be able to succeed in their chosen programmes of study, and to achieve the best that they can. As such, we monitor your progress throughout the year, by checking your attendance, your completion of set work and your performance in tests.

When there is cause for concern, it will be brought to the attention of your Personal Tutor and the Postgraduate Tutor. There is a lot of support which can be provided if you need help with a certain aspect of your studies – your Personal Tutor will be able to discuss this with you. It is important that you engage in your studies and help us to help you in the best way possible.
2.15 Assessment
Throughout the degree programme, you will be given various assignments and assessments, in addition to lectures and exams. These may come in a variety of formats, for example: problem sheets, practical reports, design projects, and coursework. It is important that you complete all set work and attend all your timetabled learning activities, otherwise you risk disadvantaging yourself. Your MSc stream and your elective module choices will influence the exact nature of the work you are required to complete.

Coursework
During the programme, you may work on various sorts of exercises to be carried out outside the classroom such as problems, design projects, practical reports and essays. Many courses have associated formal coursework. There are very strict deadlines for the submission of assessed coursework. You should plan your work so that you can complete these assignments in the appropriate time.

Failure to complete coursework can lead to failure of the year. Some work will be formally assessed and consequently contribute to your final mark for the year. For these coursework, deadlines must be rigidly adhered to. **If you are in danger of missing a deadline, submit such work as has been completed.** We cannot extend deadlines for coursework without being unfair to the entire cohort of students. Firm deadlines also assist the staff in returning marks and any comments on your work promptly.

The pass mark for each coursework component is 50%. If you don’t produce coursework of an adequate standard then you will need to retake the year. **Late work will not be marked and will be graded at zero.** If coursework is missed or late, and there is no request for mitigation, or the Mitigating Circumstances Committee does not accept the request for mitigation, then the coursework is failed. Failures of coursework can be condoned, or a supplementary qualifying test (SQT) may be set instead, but these procedures are at the discretion of the Examiners.

For further details, please consult the Regulations, available online at: [http://www.imperial.ac.uk/bioengineering/admin/msc/essential-information/](http://www.imperial.ac.uk/bioengineering/admin/msc/essential-information/).

Coursework marks will be returned to you by the responsible lecturer, will be available from the Student Office, or will be available on the College’s Virtual Learning Environment (VLE), Blackboard.

Coursework must be your own work and not copied, or plagiarised, from others. Most coursework will be submitted electronically via Blackboard, which has a plagiarism detector called Turnitin. For more information on plagiarism, please see Section 3.27 - Plagiarism.

Exams
The key examination periods are January, and the start of the summer term (late April/May/June), which is when most exams take place.

We recognise that examinations are a stressful experience. There are lots of resources in place to support you during this time. Please refer to Section 1.7 – Who to speak to if you need help - a list of places where you can find help and support. Also, make sure you have a look at the following College resources, which have been written to help students succeed in their studies and examinations:

- Imperial College Success Guides: [http://www.imperial.ac.uk/students/success-guide/](http://www.imperial.ac.uk/students/success-guide/)
- Student Space: [http://www.imperial.ac.uk/student-space/](http://www.imperial.ac.uk/student-space/)
If you do have problems before or during the examinations, please contact the Student Office and let us know, so we can try and support you. You may wish to apply for mitigating circumstances. (Find out more about in Section 4.35 – Mitigating Circumstances).

Please note, we cannot take mitigating circumstances into account when assessing marks unless we hear from you before the examinations, so it is better to get in touch sooner rather than later if you think you have mitigating circumstances.

Exams and Religious Obligations
The major examination periods are timed to accommodate the requirements of each individual degree programme and you may therefore find that you have an exam scheduled during a particular religious festival or period of religious observance.

If this is the case you should speak to someone in the Department as soon as possible – usually this would be the Postgraduate Tutor. Your tutor should listen to your situation and discuss potential solutions with you, although it will not always be possible to find a solution.

2.16 Requirements for the award of the MSc in Biomedical Engineering

Attendance requirements
You are expected to attend throughout the whole year. You will have taught modules throughout the terms. After exams and throughout the summer, you are expected to work on your research project full time.

The programme will finish when dissertations are submitted in September.

Examination requirements
To be awarded the MSc, you must produce required coursework, take certain written examinations, carry out a project and submit a project dissertation. There are three elements to the MSc, the core subjects, the specialist (stream specific) subjects, and the project. Coursework and exams are allocated to one of the first two elements. You must obtain an aggregate of 50% in all three elements to pass the programme. The weighting of the components is: core subjects - 30%; specialist subjects - 30%; Project - 40%.

Award of Merit and Distinction
Students who obtain a mark exceeding 60% in all three elements may be awarded the MSc degree with Merit, unless they are entitled to be awarded a Distinction. Where appropriate students who obtain a total aggregate mark exceeding 60% in two elements and a mark no lower than 50% in a third element may, at the discretion of the Examiners, be awarded the MSc degree with Merit. Students who obtain a mark of greater than 70% in all three elements may be awarded the MSc degree with Distinction. Where appropriate students who obtain a total aggregate mark of greater than 70% and a mark of greater than 70% in two elements and a mark no lower than 60% in a third element may, at the discretion of the Examiners, be awarded the MSc degree with Distinction.

Note 1: Examiners’ discretion will only normally be used if the mark in the lowest element is within 2.5% of the grade boundary and if there is compelling evidence of substantial performance above the mark in that element in other areas of contribution.

Coursework
Coursework will be set from time to time by module co-ordinators. Deadlines will be set for submission and late submission will be penalised by giving no marks for that piece of work (see Section 2.15 - Assessment)

Some of the modules, in particular the Journal Club, also have coursework components which may involve written work and/or oral presentations.

Plagiarism is considered as cheating and will be severely penalised including receiving zero marks. A statement of College policy about plagiarism will be distributed with the instructions for your first library project. Further information is also provided in Section 3.27 - Plagiarism.

Written examination papers
Written examinations are held in December/January and in April/May/June.

You must take examinations in all the core subjects and the required number of the specialist subjects.

General Passing Requirements
The pass mark in each module is 50%, including examinations mark and coursework for that module. To qualify for the MSc degree, the mark averaged over all papers in any one element must exceed 50%. If any module scores less than 50% it must be compensated by other module in the same element. However, if any individual paper scores less than 40%, the module is deemed to be failed and the Board of Examiners at their discretion will decide whether the student can be deemed to have passed the MSc overall. If students have taken more than the required number of option papers, the highest four qualifying option marks will be included in their average.
Project and Dissertation
Projects in the Department take several different forms, but all involve original research or development work. The standard that must be achieved will be indicative of a high degree of application over a period of at least four months, a critical approach to the problem and good analytical skills. Written advice on preparing the Dissertation (the written report) will be issued during the spring term. You will have to submit a planning report which counts for 10% of the marks of the project component. There is currently no oral examination on the project, however, you are expected to give a short talk on your project over the summer, and this counts for 10% of the marks of the project component. Please consult the dedicated Project Handbook for details.

As with coursework, plagiarism in the dissertation is treated as cheating and severe penalties including the award of zero marks may be applied. Penalties will also apply for late submission (as per Section 2.15 – Assessment). You will be expected to maintain contact with your assigned project Supervisor throughout the project period (during the spring term and then from June to the end of September). This is required in order to ensure the best possible outcome for your project.

Re-sits
Modules that are failed may be re-taken in the next academic year, i.e. 12 months after the original exam was taken. There are no special resit examinations.
2.17 External examiners
The Department's commitment to excellence in teaching and learning is assisted by its external examiners who perform a vital role in ensuring that:

- The standard of the degrees we award is comparable to other UK universities as defined by the QAA national benchmarks
- The standard of the degrees we award is consistent with the specification of our own programme and module specifications
- The Imperial assessment policy is implemented such that:
  - Student achievement is measured against intended learning outcomes
  - Assessment is implemented fairly and equitably.

The external examiners for the MSc Biomedical Engineering are:

<table>
<thead>
<tr>
<th>External Examiner</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor Patricia Lawford</td>
<td>University of Sheffield</td>
</tr>
<tr>
<td>Professor Stuart Green</td>
<td>University of Birmingham</td>
</tr>
<tr>
<td>Professor John Lowry</td>
<td>National University of Ireland, Maynooth</td>
</tr>
</tbody>
</table>

It is considered to be inappropriate for you to submit complaints or representations direct to external examiners or to seek to influence your external examiners. Inappropriate communication towards an examiner would make you liable for disciplinary action.

You can find out more about the Department’s external examiners on our website at: [http://www.imperial.ac.uk/bioengineering/admin/msc/external-examiners/](http://www.imperial.ac.uk/bioengineering/admin/msc/external-examiners/).

You can find out more about external examining at the College on the Registry webpage at: [https://www.imperial.ac.uk/staff/tools-and-reference/quality-assurance-enhancement/external-examining/](https://www.imperial.ac.uk/staff/tools-and-reference/quality-assurance-enhancement/external-examining/).

External examiner summary reports are also published internally at [https://www.imperial.ac.uk/staff/tools-and-reference/quality-assurance-enhancement/external-examining/information-for-staff/](https://www.imperial.ac.uk/staff/tools-and-reference/quality-assurance-enhancement/external-examining/information-for-staff/).
2.18 Accreditation

What is a professional engineering qualification?
Engineering is a vocation. A professional qualification demonstrates that you have achieved the highest level of competence for your chosen vocation. Specifically, you have achieved the competencies specified in the Dublin, Sydney and Washington accords. For a professional engineer, an academic qualification is a stepping-stone towards obtaining a professional qualification.

The main professional engineering qualifications in England is the CEng qualification, in Europe it is the Eur Ing and for the rest of the world it is the Int PE. All three qualifications are based on the same aforementioned accords. Each qualification is mutually acceptable to the other organisations that administer professional registration. This means your academic accreditation can be cashed-in for professional registration anywhere in the world.

A professional qualification is effectively an international passport to practice engineering. In some countries a professional engineering qualification is a pre-requisite for employment. In all countries it is a definite advantage since it demonstrates that your work since graduation has been peer reviewed. Thereby, affirming that you have achieved a high-level of professional competency over a period of several years. Affirmation from your peers confirms that you have used your knowledge, understanding and skills in a useful way working as a professional engineer.
What is academic accreditation?
To obtain a professional engineering qualification you need an academically accredited degree. If you have one, then your work since graduation will be evaluated against the graduate level learning outcomes specified in the aforementioned accords.

Academic accreditation of an engineering degree programme means that the programme has met the high standards set by the engineering profession, and re-tested every 5 years. Standards for accreditation of engineering programmes in the UK are set by the Engineering Council, which is the regulatory body for the profession, in consultation with the discipline specific Professional Engineering Institutions (PEI).

Our degree programmes are unique for a named engineering degree since we have satisfied the requirements of four PEI's, which underlines the depth and breadth of our programmes. Our degree programmes have the breadth of a general engineering degree, but through your pathway/stream selection your degree has the same depth as four sub-branches of engineering.

Your pathway/stream selection on your degree programme means that when you graduate you will have a strong alignment with one of the PEI’s. You should then become a member of that PEI, who will then mentor you through the years from graduation through to professional registration.

What are the benefits of accreditation?
Accreditation means that you can be sure that your degree programme provides a solid underpinning in the subject and meets the current and future needs of employers. It will be current, relevant and well-regarded within the discipline. Graduating with an accredited degree provides you with a competitive advantage in the jobs market, and offers you international job mobility.

Professional accreditation of our programmes
An academically accredited degree can be achieved either with an undergraduate Integrated Masters degree (e.g. a MEng) or the combination of a three year undergraduate and a one year postgraduate degree programmes (e.g. BEng + MSc). If your registration is based on two degrees and one of your degrees has not been accredited, it means that you will need to offer extra years of graduate level work experience in-lieu of the absence of an accredited degree.

The BEng and MSc Biomedical Engineering programmes are accredited by four PEI’s on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer (IEng) and partly meeting the academic requirement for registration as a Chartered Engineer (CEng).

The MEng Biomedical Engineering programme is accredited by four PEI’s on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer (CEng)
The table below shows the start and end dates for our academic accreditation. The accreditation is awarded for a maximum period of 5 years. Therefore, we apply for academic accreditation periodically, such that the end dates shown below will be extended, without any intermediate years without accreditation.

<table>
<thead>
<tr>
<th>MSc stream</th>
<th>IPEM 2012-18</th>
<th>IMechE 2013-19</th>
<th>IOM3 2013-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomaterials and Tissue Engineering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biomechanics and Mechanobiology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Physics and Imaging</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neurotechnology</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

You can find out more about the PEIs at:

- IPEM: [http://www.ipem.ac.uk/](http://www.ipem.ac.uk/)

You can find out more about the Engineering Council at: [http://www.engc.org.uk/](http://www.engc.org.uk/).
Section three

Departmental information and other key information
3.19 Health and Safety

The Department of Bioengineering considers the health and safety of staff, students, contractors and visitors to be of paramount importance.

We expect staff, students, contractors and visitors to share our commitment to safety by complying with our policies and procedures and to understand that they too have legal and moral obligations to themselves and to one another.

The Department will provide, manage and maintain a work environment which is, so far as is reasonably practicable, safe and where risks to health are controlled.

The Department will offer training to all staff and students in safe methods of working and will foster responsible attitudes to health and safety.

Health and safety within the Department is organised and managed by the Departmental Safety Officer, Ken Keating (Room RSM 3.18, telephone +44 (0) 20 7594 5170). All major health and safety decisions are made by the Departmental Safety Committee, which meets termly. Information about health and safety can be found on the College website at http://www3.imperial.ac.uk/safety

Further safety specific information can be found at the departmental intranet: https://share.imperial.ac.uk/foe/Bioengineering/LabInformation/SitePages/home.aspx and website: https://www.imperial.ac.uk/bioengineering/admin/safety/. It is essential that you ensure to familiarise yourself with these sites.

Emergency procedures
In an emergency, dial extension 4444 from any internal phone or +44 (0)20 7589 1000. This line is supported 24 hours a day. State your exact location, your name and extension number. Security Control will immediately mobilise the required emergency services. Do not ring 999 – Security will coordinate this.

If you discover a fire, immediately press the nearest red alarm call point. Warn people in the vicinity. Evacuate the building and be ready to tell Security and Fire Officers where the fire is. Do not attempt to tackle fires, chemical spillages or intruders yourself. More information about fire safety is available on the Fire Safety website: http://www.imperial.ac.uk/estates-facilities/health-and-safety/fire-safety/.

Fire alarms
The emergency evacuation alarm is a continuous siren in the building. Leave the building immediately by means of the stairways – do not use lifts. Do not attempt to tackle fires, chemical spillages or intruders yourself.
Building evacuation
Familiarise yourself with the various evacuation routes and use the nearest staircase - see the map at the end of the safety section in this handbook. Do not always head for the main staircase in the RSM regardless of where you are as this gets very congested. There is multiple fire evacuation signage throughout the building identified by a white arrow on a green background and sometimes a “running man”.

From the main RSM staircase the exit is onto Prince Consort Road and along the assembly point is towards the junction of Prince Consort Road and Exhibition Road. For the other evacuation routes you should follow the signs down to the lower ground floor and then out onto the RSM courtyard at the rear of the building. The assembly point for these exits is Queens Tower.

In the event of a fire alarm all doors are automatically released from swipe card control and you will be able to access the corridors to the other stairwells. If the doors are not released automatically, press the green emergency exit button.

Leave the building quickly. Never use the lifts. Do not return to collect personal belongings.

First aid
Local emergency help is provided by qualified first-aiders – see later in this Section for a list of who these people are in the Department. If no local help is available, ring Security on extension 4444 from an internal phone or +44 (0)20 7589 1000.
3.20 Health and Safety arrangements for students

Safety Induction
There will be a safety induction lecture during the first week of term - you are required to attend and a register will be taken.

Laboratories and Workshops
Undergraduates and MSc students may not use laboratory or workshop equipment without permission and until training has been given. All local rules must be adhered to at all times.

Please note that you will not be given access to the labs until you have completed the necessary safety procedures so do this promptly when you are asked.

Practical Classes
For each practical class, an agreed risk assessment has been completed before commencement of each class. The objective is to ensure that all such classes are conducted in a safe manner, where exposure to any hazard is eliminated or minimised as far as is practicable. All relevant safety information will be provided in the instructions and protocols issued for each class.

Accidents and Near Misses
All accidents, dangerous occurrences or near misses must be reported to the academic member of staff giving the lecture/tutorial or supervising the practical class.

Accident forms must be completed by the student concerned and the supervising academic as soon as practicable after the incident. Both parties must sign the forms and the original should be given to the Departmental Safety Officer as a matter of urgency. The forms can be found on the safety web site.
http://www3.imperial.ac.uk/safety
**FIRST AIDERS**
Department of Bioengineering

FOR EMERGENCY MEDICAL ASSISTANCE
9AM to 5PM MONDAY TO FRIDAY

PLEASE CONTACT ONE OF THE FIRST AIDERS LISTED BELOW
OUTSIDE THESE HOURS (OR IF NO FIRST AIDERS CAN BE CONTACTED)

PLEASE RING 4444 (Security)
(From a mobile ring: 020 7589 1000)

<table>
<thead>
<tr>
<th>Name</th>
<th>Office</th>
<th>Phone</th>
<th>Lab</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melanie Albright</td>
<td>RSM 3.18</td>
<td>41500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jacques Bertrand</td>
<td>B313</td>
<td>41850</td>
<td>B314</td>
<td></td>
</tr>
<tr>
<td>Paschal Egan*</td>
<td>RSM 4.24</td>
<td>46497</td>
<td>B220</td>
<td>46469</td>
</tr>
<tr>
<td>Joel Eustaquio</td>
<td>RSM 3.18</td>
<td>42139</td>
<td>Mobex:</td>
<td>07872850260</td>
</tr>
<tr>
<td>Martin Holloway</td>
<td>RSM 3.23</td>
<td>45176</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worrapong Kit-Anan*</td>
<td>RSM 2.12</td>
<td></td>
<td>B615E/622</td>
<td>42295</td>
</tr>
<tr>
<td>Charles Motraghi*</td>
<td>B701</td>
<td>42851</td>
<td>B604</td>
<td>49739</td>
</tr>
<tr>
<td>Daniel Nardini*</td>
<td>LG04</td>
<td>46367</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sabrina Skeete</td>
<td>RSM G.04</td>
<td>46764</td>
<td>B615</td>
<td></td>
</tr>
<tr>
<td>Edit Toth</td>
<td>RSM 3.18</td>
<td>45191</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claire Webster**</td>
<td>B304A</td>
<td></td>
<td>Mobex:</td>
<td>077 394 67052</td>
</tr>
</tbody>
</table>

*All have the Emergency First Aid at Work qualification except for Paschal Egan, Worrapong Kit-Anan, Charles Motraghi and Daniel Nardini who have the full First Aid at Work qualification.
**Medically qualified.

Mental Health First aider: Britta Ross, b.ross@imperial.ac.uk, ext: 45122

STATE CLEARLY THE DETAILS OF THE EMERGENCY, YOUR EXACT LOCATION, YOUR NAME AND EXTENSION NUMBER.
## 3.21 Accessing the Department

In the interests of safety and security, please:
- Do not prop doors open
- Be aware of tailgating (someone following you through an access-restricted area without using their own ID card)

Your ID card will give you access to the Department and laboratories (where appropriate/requested).

You may work in the Department only between specified times, as detailed below. If you need to arrange other access please speak to your Supervisor, tutor or the Student Office. College Security is very strict about this and comes down heavily on students and staff who do not comply. If you have any problems with your ID card, please contact staff at the Student Office (RSM 3.21c).

### Access times for different users in the Department of Bioengineering:

<table>
<thead>
<tr>
<th>ID card group</th>
<th>Times</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff</td>
<td>07:00-23:59</td>
<td>7 days a week</td>
</tr>
<tr>
<td>PhD</td>
<td>07:00-23:59</td>
<td>7 days a week</td>
</tr>
<tr>
<td>MSc, MRes</td>
<td>08:00-18:30</td>
<td>5 days a week</td>
</tr>
<tr>
<td>UG</td>
<td>08:00-18:30</td>
<td>5 days a week</td>
</tr>
</tbody>
</table>

At some stage during your time in the Department, it may be necessary for you to gain access to some restricted areas, e.g. certain laboratories. If this is the case, you will need to follow these steps:

1. Get permission from your Supervisor and the lab lead PI
2. Ensure the relevant safety assessments are completed, including a risk assessment of work to be carried out (see https://share.imperial.ac.uk/foe/Bioengineering/LabInformation/)
3. Ensure the induction is carried out and the form completed by the supervisor.
4. Complete the online access request (including the uploading of the completed induction form)

In the interests of safety and security, please:
- Do not prop doors open
- Be aware of tailgating (someone following you through an access-restricted area without using their own ID card)
3.22 Key Departmental contacts

A full list of people in the Department, including academic and support staff, can be found on the Departmental website at http://www.imperial.ac.uk/bioengineering/people/.

Departmental Leadership

**Professor Anthony Bull**
Head of Department
Professor of Musculoskeletal Mechanics

**Professor Martyn Boutelle**
Deputy Head of Department and Director of Courses
Professor of Biomedical Sensors Engineering

**Professor Jimmy Moore Jr.**
Director of Research
The Bagrit & RAEng Chair in Medical Device Design

**Dr Anil Bharath**
Director of Postgraduate Studies (Research)
Reader in Image Analysis

**Dr Darryl Overby**
Director of Postgraduate Studies (Taught Courses)
Reader in Cellular Biomechanics

Student Support

**Ms Louise O’Sullivan**
Head of Student Programmes
Tel: +44 (0)20 7594 9660
Email: l.osullivan@imperial.ac.uk

**Mr Martin Holloway**
Academic Tutor
Tel: +44 (0)20 7594 5176
Email: m.holloway@imperial.ac.uk
Ms Britta Ross  
Student Programmes Manager  
Tel: +44 (0)20 7594 5122  
Email: b.ross@imperial.ac.uk

Ms Maddi O’Brien  
Programmes Development Manager  
Tel: +44 (0)20 7594 9296  
Email: m.obrien@imperial.ac.uk

Ms Samantha Kemp  
Student Administrator  
Tel: +44 (0)20 7594 9115  
Email: samantha.kemp@imperial.ac.uk

TBC  
Student Administrator  
Tel:  
Email:

TBC  
Student Administrator  
Tel:  
Email:

Mr Robert Ferguson  
Industrial Liaison Manager  
Tel: +44 (0)20 7594 6371  
Email: robert.ferguson@imperial.ac.uk

Departmental Administration

Mr Graeme Rae  
Department Operations Manager  
Tel: +44 (0)20 7594 8419  
Email: g.rae@imperial.ac.uk

Ms Edit Toth  
Department Resources Officer  
Tel: +44 (0)20 7594 5191  
Email: e.toth@imperial.ac.uk
Ms Kemi Aofolaju  
Department Secretary  
Tel: +44 (0)20 7594 5179  
Email: a.aofolaju@imperial.ac.uk

Key academic contacts

**Professor Robert Krams**  
Postgraduate Tutor and Biomechanics and Mechanobiology Stream Coordinator  
Tel: +44 (0)20 7594 1473  
Email: r.krams@imperial.ac.uk

**Dr Aldo Faisal**  
Disability Liaison Officer  
Tel: +44 (0)20 7594 6373  
Email: a.faisal@imperial.ac.uk

**TBC**  
Projects Officer  
Tel:  
Email: 

**Dr Robert Dickinson**  
Medical Physics and Imaging Stream Coordinator  
Tel: +44 (0)20 7594 5662  
Email: robert.dickinson@imperial.ac.uk

**Dr Paul Chadderton**  
Neurotechnology Stream Coordinator  
Tel: +44 (0)20 7594 0770  
Email: p.chadderton@imperial.ac.uk

**Dr Theoni Georgiou**  
Biomaterials and Tissue Engineering Stream Coordinator  
Tel: +44 (0)20 7594 5177  
Email: t.georgiou@imperial.ac.uk
3.23 Departmental life and extracurricular activities

We believe that the Department of Bioengineering is a welcoming and lively place to be. There are lots of events happening throughout the year and we really encourage you to get involved with Departmental life and make the most of the opportunities available to you.

There are also many opportunities available to you as a student of Imperial College London. There are numerous talks, seminar series, student clubs, summer school and volunteering opportunities for you to participate in and enjoy. Find out more on the website at: https://www.imperial.ac.uk/students/

Staff-Staff Committee of the Department of Bioengineering

The Staff Student Committee meetings serve as platform of exchange of students’ experience in the programmes and for compiling the students’ complaints and suggestions. At the Spring Term meeting, staff report implemented changes back to the students. In addition, all information is collected by the Student Union in order to present a global view of the College. Further, all issues raised are discussed at the Departmental Teaching Committee Meeting, where academic staff discuss solutions.

Students from every year group of each degree programme are elected annually to serve as representatives (for MSc, elections happen during timetabled MSc Journal Club sessions). This could be you!

More details can be found here:
http://www.imperial.ac.uk/bioengineering/admin/msc/staff-student-committee/
You can find out more about become a student representative here:
https://www.imperialcollegeunion.org/your-union/your-representatives/academic-representatives/overview.

Seminar programme

The Department of Bioengineering hosts a seminar programme on Thursday lunchtimes, with guest speakers from other institutions talking about a range of academic topics relevant to Bioengineering. Find out more, including upcoming dates, on the Events page of the website: http://www.imperial.ac.uk/bioengineering/whats-on/events/.

Outreach and Public Engagement

The Department of Bioengineering hosts and participates in many outreach and public engagements events. For more information, or to find out about getting involved, you can:

- Contact the Outreach and Public Engagement Manager, Dr Jenna Stevens-Smith (j.stevens-smith@imperial.ac.uk)
- Visit the website at http://www.imperial.ac.uk/bioengineering/whats-on/public-engagement/

Prizes and awards in the Department

There are many prizes and awards received each year by students in the Department of Bioengineering. These can be specifically for undergraduates, postgraduates, or for any students in the Department. Some are run by the Department and others are College-level awards. You can find out more about these awards and prizes, including background information and eligibility, on the website at: http://www.imperial.ac.uk/bioengineering/admin/current-undergraduate-students/prizes/.
Imperial College Union Bioengineering Society
The Imperial College Union Bioengineering Society is a constituent society of the Imperial College Union, under the wing of the City and Guilds College Union (CGCU). Started 13 years ago by a group of enthusiastic MSc students, the ICU Bioengineering Society has been run, since its inception, with the aim of broadening the experiences of Bioengineering students beyond that of the curriculum. All undergraduate and postgraduate students enrolled in the Department of Bioengineering are automatically a part of the Bioengineering Society.

Mission and Vision of Bioengineering Society 2016-2017
“The Department of Bioengineering has a reputation for being exciting and innovative, and this year the Imperial College Bioengineering Society would like all its students to feel that they are a reflection of that. ICU Bioengineering Society is as driven as ever to make the experience of the Biomedical Engineering student that much greater.

The committee have been busily lining up some must-attend social events for you throughout the coming year. These cover a huge range of exciting activities; from the annual Bioengineering Christmas Dinner with even more sparkle than before, to the Bioengineering Football League to let out our competitive sides. In addition there will be a couple of hugely successful Bioengineering Bash’s similar to last year. These upcoming events will hopefully be a great way to relax and have fun with your fellow classmates. Events are open to students of all years, providing a unique opportunity to get to know your peers, creating a feeling of a Bioengineering community. Further details of events will be given throughout the year.

The Bioengineering Society encourages involvement from anyone who would like to play a more active part in the Society; a collective effort of ideas and hard work would lead to an even better year for the students of the Department.”

Find out more by looking at the Society’s website: https://www.union.ic.ac.uk/guilds/bioeng/.

Imperial College Union-Engineering Students’ Association
The IC Engineering Students’ Association has the following objectives:

- To aid the academic, welfare, sporting and social interests of members of the faculty
- To encourage, promote and support clubs and societies
- To represent the needs and interests of members to the College, ICU and external bodies.

Find out more by looking at the Association’s website: http://www.cgca.org.uk/studentcentre/

Engineers Without Borders Society (EWB-UK)
Engineers Without Borders Society (EWB-UK) is a student-led charity aiming to facilitate human development through engineering. If you wish to find out more please visit the website at: http://www.ewb-uk.org/ or the Imperial College Union website at: https://www.imperialcollegeunion.org/activities/a-to-z/229.

Other activities
There is a very wide range of non-academic activities available and we recommend that you participate in these activities to gain a wider experience of the life here at Imperial and in London, and in many cases you can pick up skills that employers value. Fresher’s Fair in Week 1 gives you the opportunity to see what is available and introduce yourself to the organisers of those activities. Find out more on the website at: http://www.imperial.ac.uk/students/new-students/welcome-week/.
3.24 ICT

Support with ICT
Any problems or queries relating to computing, including requests for new software, should be addressed first to ICT (service.desk@imperial.ac.uk), and to our Departmental Resources Officer (Edit Toth, e.toth@imperial.ac.uk). To avoid infringement of licensing arrangements and to prevent the introduction of viruses, you are strictly forbidden to bring in programs from outside.

As long as you have completed Imperial's online registration process, you can use your College credentials to get Microsoft Office 365 software for free. You can install the latest version of Microsoft Word, Excel, PowerPoint, OneNote and much more on up to five compatible PCs and Macs, plus five tablets, including iPad. All work can be saved online in OneDrive for Business, so it can be accessed no matter which device you use.

Rules for using the College network
The Information and Communication Technologies group (ICT) has very strict rules regarding the downloading of illegal, inflammatory, pornographic or obscene material on to computers connected to the campus network. Infringement of these rules can have very serious repercussions, including expulsion or legal proceedings being brought against students. You should be aware that the content and level of network traffic is monitored continuously. You should read the College’s Information Systems Security Policies, available at: http://www.imperial.ac.uk/admin-services/ict/self-service/be-secure/information-systems-security-policies/.

Imperial Mobile
Imperial Mobile is a mobile application enabling students to access College information and services anytime, anywhere. Students of Imperial College can download it onto any mobile device, phone, Android, iPad, iPhone, or iPod.

Find out more about Imperial Mobile at: http://www.imperial.ac.uk/students/online-services/mobile/

Printing and photocopying
The Department has black/white and colour photocopiers in the utility areas on Levels 3 and 4 and in RSM 3.06 which are accessed using your ID card. These can also be used as printers and scanners via the ICT print service – check http://www.imperial.ac.uk/ict/printservice for information on using this service. An additional colour (ICT) copier/printer is available in RSM 3.38.

If you have problems with these machines or your swipe card, please contact ICT - do not try to correct problems yourself. All student groups/years will receive an initial print credit on their account. Please try and use Departmental printers for your printing where possible, as opposed to those in other areas of the College.

Online security
Please ensure you familiarise yourself with the College’s ICT ‘Be Secure’ information. The information will help you to: protect computers and devices; protect College and personal information; protect yourself online; comply with laws and policies. Find out more at http://www.imperial.ac.uk/admin-services/ict/self-service/be-secure/.
3.25 Disability support

Information for students with disabilities, specific learning difficulties or long-term health issues

At Imperial College London we recognise that studying at university can be a challenge, especially if you have a disability. We are keen that you have every opportunity to fulfil your potential and graduate with the degree you deserve. Therefore, it is important that you let us know about any disability, specific learning difficulty or health problem as soon as possible so that we can give expert advice and support to enable you to do this. This service is strictly confidential between you and the relevant College personnel and support services.

Some people never think of themselves as having a disability, but students who have experienced any of the issues listed below have found that a little extra help and support has made 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
- Visual difficulties

Where to find help

1. **Your Disability Liaison Officer**
   (Dr Aldo Faisal; Tel: +44 (0)20 759 46373, bg-ddo@imperial.ac.uk)

   Dr Aldo Faisal is your first point of contact within your department and is there to help you with arranging any support within the department that you need. He is also the person who will apply for Special Examination arrangements on your behalf. You need to contact him without delay if you think that you may need extra time or other adjustments for your examinations.


2. **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. We can also help if you think that you may have an unrecognised study problem such as dyslexia. Our 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.

   Some of the sorts of things we can help with are:

   - Being an advocate on your behalf with others in the College such as your Departmental Liaison Officer, Postgraduate Tutor, or Exams Officer, the accommodation office or the estates department
   - Checking that your evidence of disability is appropriate and up-to-date
   - Arranging a diagnostic assessment for specific learning difficulties
   - Help with applying to the College for the cost of an assessment
   - Help with your application for the Disabled Students Allowance (DSA) see below
   - Helping students not eligible for the Disabled Students Allowance in obtaining support from other sources
   - Help with arranging extra Library support
- Supporting applications for continuing accommodation for your second or later years

You can find about more about the Disability Advisory Service on the website at: [http://www3.imperial.ac.uk/disabilityadvisoryservice](http://www3.imperial.ac.uk/disabilityadvisoryservice)

3. **Disabled Students Allowance:**
   All home students who are UK residents and pay home fees and who have a disability are eligible to apply for a grant called the Disabled Students Allowance which can pay any extra costs that are a direct result of disability. 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. Remember students with unseen disabilities such as mental health difficulties, dyslexic type difficulties or long term health problems are also eligible.

You can find out more about the Disabled Students Allowance on the website at: [http://www.imperial.ac.uk/disability-advisory-service/support/dsa/](http://www.imperial.ac.uk/disability-advisory-service/support/dsa/)
3.26 Visa information

If you require information, advice or support regarding your visa arrangements, please contact the College’s International Student Support team. Details are available on their website: [https://www.imperial.ac.uk/study/international-students/visas-and-immigration/](https://www.imperial.ac.uk/study/international-students/visas-and-immigration/)

**Visa information for overseas students**

From 31 July 2015, students who apply for a visa lasting longer than six months will be issued with a visa in two parts: a 30-day visa to allow students to enter the UK and a Biometric Residence Permit (BRP) that will cover the full duration of their studies.

Further information about the Biometric Residence Permit (BRP) distribution can be found at: [https://www.imperial.ac.uk/study/pg/apply/register/brp/](https://www.imperial.ac.uk/study/pg/apply/register/brp/).

**Student attendance**

Whilst in the UK on a student visa, you are required to comply with all of the conditions of your visa. This means that you must be engaged in full-time study for the duration of your visa. You should therefore be aware that if you need to take time out from your programme for any reason (e.g. an interruption of studies), you may be in breach of your visa conditions, unless you return home.

In addition, you should note that the UKVI require the College to monitor attendance for overseas students. Any student not in attendance at the College (e.g. missing meetings with their Supervisor and/or group, etc.) will be reported to the UKVI via the College Registry. Students in breach of their visa conditions may face serious consequences, including refusal of British visas in the future.

For further information, please get in touch with the College’s International Student Support team [http://www.imperial.ac.uk/study/international-students/](http://www.imperial.ac.uk/study/international-students/).

- The UK Visas and Immigration (UKVI) require students to collect their BRP within 10 days of arrival in the UK, from either the nearest approved Post Office (in the College’s case, High Street Kensington) or from the Registry team at the College. The pickup location depends on what the student has indicated in their visa application:
  - Students who select Imperial College as their location for collection will be emailed inviting them to book a slot so they can pick up their BRP which they should be able to slot around their Departmental induction activity and programme timetable. The collection point is likely to be Sherfield Building.

- A campus map can be found online at: [http://www.imperial.ac.uk/media/imperial-college/visit/public/Map-of-South-Kensington-Campus-[pdf].pdf](http://www.imperial.ac.uk/media/imperial-college/visit/public/Map-of-South-Kensington-Campus-[pdf].pdf) - Sherfield Building is number 20
3.27 Plagiarism
This information provides you with an overview of plagiarism. Plagiarism is a very serious offence and you need to know what it is, how to avoid it, and what the consequences are. You are strongly advised to read the following information sources to ensure you fully understand the issues:

- https://www.imperial.ac.uk/admin-services/library/learning-support/plagiarism-awareness/masters-students/

What is plagiarism?
Plagiarism is when you use someone else's work, words or ideas and use these in your own work (e.g. coursework, thesis, examination, etc.), and do not acknowledge that you have done this.

Plagiarism is defined by the College as:
"Plagiarism, which is the presentation of another person's thoughts, words or images and diagrams as though they were your own and which is a form of cheating, must be avoided, with particular care in coursework, essays, reports and projects written in your own time and also in open and closed book written examinations."

Plagiarism can occur in a number of ways. The six main types of plagiarism include:
- Collusion
- Cut/copy and paste
- Word switch
- Concealing sources
- Misinterpreting common knowledge
- Self-plagiarism

It is extremely important you have an awareness of what plagiarism is and how to avoid it. If you are at all unsure about how to reference or cite your sources there is very useful guidance here: http://www.imperial.ac.uk/admin-services/library/learning-support/reference-management/what-is-referencing/. Or, you can seek help from your tutor or Liaison Librarian: http://www.imperial.ac.uk/admin-services/library/subject-support/bioengineering/.

You should also be aware that there are different styles of referencing. If you are not sure which to use speak to your module leader for advice. You can find out about the different referencing styles at http://www.imperial.ac.uk/admin-services/library/learning-support/reference-management/what-is-referencing/.

Why is it a problem?

At Imperial, as in other universities, plagiarism is considered an examination offence, and is often described as cheating. Your lecturers will use a number of methods to detect plagiarism, which may include an electronic detection tool. Some students commit plagiarism when preparing written pieces of work without being aware of it.

It is important that you:
- Know what plagiarism is, and why it is an academic offence
- Are aware that all material you use from online and print sources should be acknowledged properly
- Understand whether assigned group work is to be submitted with individual contributions or as a joint piece of work
Know that if you re-use parts of your own work, you must acknowledge this (to not do so is self-plagiarism).
Speak to your lecturers or tutors if you are not sure about the appropriate use and correct acknowledgement of other sources in your own work.

What happens if I commit plagiarism?
- The College will investigate all instances where an examination or assessment offence is reported and apply appropriate penalties to students who are found guilty.
  - These penalties could include:
    - A mark of zero for the assessment in which the examination offence occurred
    - A mark of zero for all the assessments in that year
    - Exclusion from all future examinations of the University (i.e. expulsion from the university)
- Where plagiarism is detected in group work, members of that group may be deemed to have collective responsibility for the integrity of work submitted by that group and may be liable for any penalty imposed.
- More information about the consequences of plagiarism is available in the College’s ‘Cheating Offences Policy and Procedures’.

Key points to remember:
- All work that you submit must be expressed in your own words and incorporate your own ideas and judgements, and where you have used other people’s work you must clearly acknowledge and identify your sources.
- You must not present another person’s work, thoughts, words or images and diagrams as though they were your own, under any circumstances.
- Direct quotations from the published or unpublished work of others, must always be clearly identified as such by the use of quotation marks. A full reference to their source must be provided in the proper form. This applies to a series of short quotations from several different sources just as much as a single unacknowledged long quotation from a single source.
  - There is guidance available on quoting in different referencing styles available:
- If you summarise or paraphrase another person’s ideas or judgements, figures, diagrams or software, you must refer to that person in your text, and include the work referred to in your bibliography.
- Plagiarism can occur in closed book written examinations. For example, if you have learnt text by heart and simply reproduce this information without attribution. The examiners may regard text reproduced without reference or critical analysis as plagiarism.
- The direct and unacknowledged repetition of your own work which has already been submitted for assessment can constitute self-plagiarism.
- Where group work is submitted, this should be presented and referenced, with individual contributions recorded, in the convention appropriate to your discipline.
- If you become aware that a member or members of the group may have plagiarised part of the group’s submission you have an obligation to report your suspicions to your Personal or Postgraduate Tutor or the Programme Director.
- The use of the work of another student, past or present, also constitutes plagiarism. Giving your work to another student to use may also constitute an offence.
- The College may submit your work to an external plagiarism detection service, and by registering with the College you are automatically giving your consent for any of your work to be submitted to such a service. If you have been thorough with your referencing and citations there is absolutely nothing to worry about with regards to this.
Submission for most coursework is through the Turnitin submission system in Blackboard (http://learn.imperial.ac.uk). This is a system that reads the submission and compares it with a very large library of existing material, and also with other submissions of the same piece of coursework. Turnitin is a highly effective tool in identifying attempts at plagiarism.
3.28 Personal Tutors

Your Personal Tutor is usually a member of academic staff who is allocated to you for the duration of your course to offer help and support with academic or personal issues. They will also follow your progress throughout the course to help keep you on track to succeed.

Your Personal Tutor will meet with you throughout your programme of study. These are occasions where you can raise any areas of difficulty but these sessions will also be programmed to help you develop learning strategies.

Academic staff in the Department of Bioengineering are very active, internationally known, researchers. This may mean that they are not always in their offices, and so email is an excellent way to arrange appointments and to consult them on minor issues. In the event that the problem is not resolved via this route, you may also want to consult the Postgraduate Tutor or Director of Studies.

Additionally, as Bioengineering is a highly multi-disciplinary subject, your Personal Tutor may not always be able to answer all technical questions on modules outside their specialism, but they will happily put you in contact with someone who can - such as the appropriate lecturer or module leader.

Other members of the academic staff will generally make themselves available to discuss aspects of the course with which they are concerned. Please e-mail them to make an appointment.
3.29 Reading weeks

Every term, there is a Reading Week, usually Week 7 of term. The Reading Week is free from lectures (but study groups and labs do still take place) and is meant for reading, studying and catching up. The following rules apply to reading week:

1. You are expected to remain present and assessable during Reading Week. The UKVI and College regulations require you, as an enrolled student, to be present during term time. Absences are not allowed unless they are necessary and these must be authorised in advance. A request for absence can be made using the form available from our website at: http://www.imperial.ac.uk/bioengineering/admin/msc/

2. There will be no lectures in Reading Week so you can catch up with learning and also work on coursework or projects, however all lab demonstrations, study groups and drop-in sessions will still take place and are compulsory to attend.

3. The Reading Weeks apply to Bioengineering modules only. If you take modules in other Departments you will probably have lectures during our Reading Week. Although some Departments also have a Reading Week, it might not be the same week as ours.

All GTA (Graduate Teaching Assistant) led laboratories/practicals and study groups will run Reading Week so you can continue to get GTA support. Attendance at labs and study groups is still mandatory.
3.30 Student feedback and consultation

We are committed to achieving and maintaining the highest standards in the teaching on all programmes.

Programme quality

In the Department, the Teaching Committee regularly review courses and take note of academic and peer review of lectures and classes.

Our Board of Examiners also have a role in ensuring the courses delivered are of a high quality. They undertake activities such as reviewing syllabi, lecture content, reading lists, coursework requirements, examination papers etc. Students from all years meet with the Board of Examiners once a year to present their views and opinions.

You can find out more about the role of external examiners on the website at:
http://www.imperial.ac.uk/bioengineering/admin/msc/external-examiners/

At College level, high standards are maintained by the provision of staff development courses and the review of all taught components and formal examinations by the Engineering Studies and Medical Studies committees. The courses are subject to the College's quality assurance processes.

The courses are reviewed in detail and at regular intervals by the Professional Engineering Institutions to ensure that the high standards required for professional accreditation are maintained.

Student feedback

As students of the Department, you have a very important role to play, by communicating directly with members of staff or via Year or Departmental Representatives. As a cohort, you will be asked to elect year representatives who will sit on the Staff-Student Committee, work with the Departmental Student Representative, and provide valuable feedback. You can find out about the Staff-Student Committee on the website at:
http://www.imperial.ac.uk/bioengineering/admin/msc/staff-student-committee/.

Formal routes by which students are involved in course evaluation are in the Staff-Student Committee, which meets once a term, and in your completion of surveys. You will be given more information about how to complete these surveys later in the term. The surveys give you the opportunity to comment anonymously on the modules and the lecturers. It is very important that these are completed, since the feedback that they give to us is invaluable in improving the degree programme for you.

A particularly important survey is the Student Online Evaluation Tool (SOLE) survey. The Department takes this questionnaire very seriously, and all feedback is considered and any appropriate action is taken.

The PG SOLE lecturer/module survey runs at the end of the Autumn and Spring terms. The overall programme evaluation allows College to compare how each department is performing across the College and to make changes that will improve our postgraduate students’ experience.

The Postgraduate Taught Experience Survey (PTES) is a national survey of Master’s level students organised by the Higher Education Academy (HEA) which invites them to comment on their programme and experience. The College participates in PTES every two years.

The Student Union’s Student Experience Survey (SES) runs in the Autumn term and will cover your induction, welfare, pastoral and support services experience. During December you will receive an email in your Imperial College account with links to all surveys relevant to you.

You can find out more about student surveys on the College website:

- Postgraduate SOLE information: https://www.imperial.ac.uk/students/academic-support/student-surveys/pg-student-surveys/pg-sole/.
• PTES information: https://www.imperial.ac.uk/students/academic-support/student-surveys/pg-student-surveys/postgraduate-taught-experience-survey-ptes/.

• Other postgraduate student surveys: https://www.imperial.ac.uk/students/academic-support/student-surveys/pg-student-surveys/.

All the surveys are anonymous and the more students that take part the more representative and useful the results. So when you are invited to take part, please take a few minutes to give your views.

The Union’s “You Said, We Did” Campaign
You can find out more about some of the changes that have been made as a direct result of student feedback online, at https://www.imperialcollegeunion.org/you-said-we-did.
3.31 Technology enhanced learning

Virtual Learning Environment (VLE): Blackboard

The Department makes use of the 'Blackboard' virtual learning environment - a web-based system hosted by ICT. You can login to Blackboard from the following link: https://bb.imperial.ac.uk/

Lecture notes and problem sheets can be found on Blackboard by navigating to the appropriate module using the links provided, and some modules will use it for more advanced purposes, such as self-tests and assessed coursework tests.

Most coursework submission is carried out via Blackboard through a system called TurnItIn. When submitting coursework through TurnItIn, it is your responsibility to check that the file you uploaded was the correct one. This means you must open the submitted file and check that it is complete and is the file you intended to submit.

If you have any problems accessing Blackboard, try trouble shooting this first:
- Check if your computer allows Java pop ups.
- Try using Firefox browser if you used IE before.

We strongly advise students to report any technical problems to ICT when submitting assignments so that they can keep a record and help you swiftly. You can contact ICT from an internal phone on extension number 49000, or from any other phone on +44 (0)20 7594 9000. Alternatively you can raise an issue via the ASK ICT service: (https://imperial.service-now.com/ict/).

Panopto

Panopto is a College ICT service that allows the recording of a computer screen, in addition to audio and visual content. The Department aims to record as many lectures as possible. Most of the lectures that take place in the lecture theatres RSM 147 and RSM 228 are recorded and linked to the appropriate course page on Blackboard. Lectures outside of these rooms may not be recorded due to unavailability of equipment. If you cannot access a recording, please speak to the Student Office.

To watch lecture recordings, go to the respective module page on Blackboard (https://bb.imperial.ac.uk) and find the link called ‘Lecture Recordings’ in the left-hand menu. You will be prompted to log in once you click on the link.

You can find out more about Panopto and lecture recordings at: http://www.imperial.ac.uk/admin-services/ict/self-service/teaching-learning/elearning-services/panopto/students-use/
3.32 Bursaries and scholarships

The College has a lot of resources available to help you find bursaries and scholarships to support your studies here.

There is some specific information about Fees and Funding for Postgraduate students available at: http://www.imperial.ac.uk/study/pg/fees-and-funding/.

A search tool is also provided to enable you to find out more about available scholarships. You can find out more about these schemes and tools on the website at: http://www.imperial.ac.uk/study/pg/fees-and-funding/scholarships/.

The College also provides a list of funding opportunities from external organisations, for information. This list can be accessed online at: http://www.imperial.ac.uk/study/pg/fees-and-funding/scholarships/external/.
3.33 Careers

Imperial College Careers Service

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

Proactively planning and developing your employability skills from the very start of your time here at Imperial will maximise your chances of getting the career or postgraduate programme you want. The careers service provides a lot of support for first year students, including:

- Careers fairs
- Employer presentations
- Employer drop ins
- Employer led skills workshops
- Job and internship vacancy information
- On line careers information as well as information in the Careers Library
- Help with applications and interviews
- Other events to help you find out more about different jobs and sectors

You can find out more about the Careers Service at [http://www.imperial.ac.uk/careers/](http://www.imperial.ac.uk/careers/).

Department of Bioengineering Careers Adviser

Students in the Department of Bioengineering can also seek advice and help with career planning from Robert Ferguson, the Department’s Industrial Liaison Manager. Robert Ferguson works with a wide range of companies in the medical technology, healthcare and biotechnologies industries in the UK, EU and internationally. He can help you with your career plans in the world of Bioengineering through:

- Weekly employer presentations from companies in the Bioengineering sector
- The annual Bioengineering Careers Fair
- A database of information about companies operating in the Bioengineering sector
- Company and sector information
- Advice about job search and finding internships or Year in Industry opportunities.
- Help with applications and interview preparation

You can find some specific information about careers in Bioengineering on the Department’s website at: [http://www.imperial.ac.uk/bioengineering/study/career/](http://www.imperial.ac.uk/bioengineering/study/career/).

Or if you have any questions or would like to arrange a meeting please contact Robert Ferguson directly: robert.ferguson@imperial.ac.uk.
It perhaps seems a bit early to think about becoming an alumnus of the Department when you have only just arrived. However, the College has a dedicated Alumni Office to support all our ex-students. Here is some information which may be useful in the meantime.

We really value all of our alumni and hope you will stay in touch with us as part of a lifelong connection, as part of the College’s global community of over 180,000 alumni.

As a current student, you can find out about what alumni from the College do now by reading some case studies online: [http://www.imperial.ac.uk/careers/resources/case-studies/alumni-case-studies/](http://www.imperial.ac.uk/careers/resources/case-studies/alumni-case-studies/). You can also find out more about alumni of the Department on the website at: [http://www.imperial.ac.uk/bioengineering/people/alumni/alumni-spotlight/](http://www.imperial.ac.uk/bioengineering/people/alumni/alumni-spotlight/).

Attending Departmental and College events, public engagement events and other networking opportunities is also a good idea if you are interested in meeting alumni and expanding your network.

Once you have graduated, you can sign up to have an Imperial alumni email address for life. Find out more at: [https://www.imperial.ac.uk/alumni/benefits/alumni-email/](https://www.imperial.ac.uk/alumni/benefits/alumni-email/).

**Graduation**

Of course, at the end of your programme, you have the opportunity to enjoy your graduation ceremony (also known as the Postgraduate Awards Ceremony at the College), to celebrate your achievements with family and friends.

The College has a comprehensive website explaining everything you need to know about Graduation, available at: [http://www.imperial.ac.uk/graduation/](http://www.imperial.ac.uk/graduation/).
Section four

Expectations, policies and regulations
4.35 Department expectations on attendance and holidays

Attendance

You are expected to be in attendance from the first day of each term to the last day of each term.

In addition, you are expected to work full-time on your project from straight after exams in May until September.

View the term dates online at: http://www3.imperial.ac.uk/registry/information/termdates

Students are permitted to proceed with their programme of study only if they maintain regular attendance and make acceptable academic progress.

While students are responsible for their own learning there is an expectation that they will take full advantage of the learning opportunities provided, attending all timetabled sessions of the degree programme. Should a student choose to absent his/her self from the degree programme without authorisation they should be aware that they would be missing valuable teaching experience which they will require in order to prepare fully for future examinations. This might mean that they find themselves in a situation where they are in danger of being required to withdraw from the degree programme as a consequence of examination failure. Should they find themselves in this situation, the fact that they have by their own action received less teaching experience than their fellow students is not going to stand in their favour.

Teaching staff are expected to keep students’ attendance under constant review and warn them if they feel it is inadequate. Problems of non-attendance will be reported to the Director of Courses and Postgraduate Tutor who will inform Personal Tutors and together will make recommendations on any remedial action that might be appropriate. Students’ Personal Tutors may wish to investigate whether the poor attendance is a symptom of personal or academic difficulties that the student may be having.

In the event of there being insufficient improvement following a warning, the Director of Courses or the Postgraduate Tutor may, at their discretion and following investigation, require the student to repeat part of the degree programme; or, should they decide that the student’s academic record and/or application is inadequate or that the student is unable to profit from continuing the programme, they may require the student to withdraw. Students have the right of appeal – find out more at http://www.imperial.ac.uk/student-records-and-data/for-current-students/undergraduate-and-taught-postgraduate/exams-assessments-and-regulations/appeals/.

Holidays

Timetables for most programmes include breaks at Christmas, Easter and in the summer. However, before arranging holidays, students should check the timing of examinations. If you are unsure of when you can be away please just come and ask us in the Student Office. It is not recommended that Postgraduate students take any holidays between May and September as it may have an effect on the project work.

Absence due to illness

If you are absent from the College due to illness for more than two consecutive days, the following procedure must be followed:-

1. Inform the Student Office that you are absent through illness as soon as possible in person, by telephone on +44 (0)20 7594 5122 or if that is not possible then by email (b.ross@imperial.ac.uk or samantha.kemp@imperial.ac.uk)

2. If you have been absent for more than five consecutive working days, documentary evidence should be obtained and submitted - e.g. an official doctor’s certificate. The documentation, should be submitted to the Student Office except in the case where confidentiality is essential, in which case it should be submitted to the Postgraduate Tutor, and the Student Office should be notified that it has been submitted.
Illness can only be taken into account in assessing the significance of poor attendance, work or examination results if the illness has been reported at the time it happened to the student’s doctor, and a medical certificate submitted to the Department.

Special or Compassionate Leave
If it is necessary for a student to be absent from the College for any reason other than illness, permission must be sought from the Department, via an absence request form available on the website: http://www.imperial.ac.uk/bioengineering/admin/msc/.

This might include a period of absence where a student has suffered a close family bereavement, or to enable a student to participate in a major cultural or sporting event.

This request form must be submitted along with any evidence to the Student Office in advance of the absence, leaving enough time for it to be considered and a decision made on whether the absence is accepted or not.

Requests should normally be submitted in writing using the form. In circumstances where the following criteria are met, approval may be given following a telephone call to the Student Office in the Department on +44(0)20 7594 5122 or +44(0)20 7594 5176:

- There is a strong precedent for approval to be given, and;
- Absence is necessary at very short notice (e.g. in the case a close family bereavement), and;
- The period of absence will be less than three days

You must be aware that even if your absence request has been authorised, this is not an excuse to miss any exams or coursework deadlines. You are responsible for catching up on any missed material and meeting any assignment deadlines. If the absence coincides with an exam/test sitting, the request may be denied and/or a mitigation process may need to be initiated.

In all but extreme cases, requests made after an absence will not be considered and the absence may count against the student and lead to disciplinary measures.

The procedure for submission of an absence request is as follows:-

1. Inform the Student Office that a leave of absence is being requested as soon as possible in person, by telephone +44(0)20 7594 5122 or if that is not possible then by email (b.ross@imperial.ac.uk or samantha.kemp@imperial.ac.uk).
2. Any documentary proof of the reasons for absence should be obtained.
3. Complete and submit, as soon as possible, the form and documentary proof requesting leave of absence. The form should be submitted to the Student Office except in the case where additional confidentiality is essential, in which case it should be submitted to the Postgraduate Tutor, and the Student Office should be notified that it has been submitted.
4. The request will be considered and the student will be informed as soon as possible whether the request has been accepted or not. Absence taken without acceptance of the request may lead to disciplinary measures.

**Interruption of Studies**

If you experience a personal emergency or other circumstances arise which necessitate a break in your degree programme, you may need to apply for an interruption of studies. This will effectively suspend your registration until you are able to return to College. No fees are payable during such a period. If you think you need to apply for an interruption, you should contact your Personal Tutor in the first instance and then the Student Office (RSM 3.21c), who can arrange the paperwork.

**Student Records**

Details relating to unsatisfactory attendance may be placed on a student’s confidential file and made available to Personal Tutors, taken into consideration by and at the discretion of Boards of Examiners, and used as evidence in cases of student appeals and complaints.
4.36 Mitigating circumstances

During your degree there may be exceptional times when your attendance, performance, ability to complete and submit work, sit exams or tests or otherwise meet your responsibilities as a student are adversely affected by circumstances beyond your control. Examples of these circumstances are serious illness or death of a close relative.

When genuine mitigating circumstances occur, the Department will do its best to help you deal with the situation, and ensure that you are not penalised for something that is not your fault.

The Department must also be careful to ensure that the circumstances are genuine and sufficiently serious enough to be classified as mitigating circumstances. Any fraudulent claims will be dealt with by the College's disciplinary procedures.

The College therefore has a form for students to request that mitigating circumstances are taken into account, which is available from the College website https://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/. In most cases students will also be required to submit documentary evidence, such as an official doctor's note.

If you think you have mitigating circumstances affecting any of the following:

- Attendance at Exams
- Submission of coursework
- Attendance at progress tests, oral tests or any other kind of test whether assessed or non-assessed.
- Any other responsibility as a student that is assessed, affects the assessment of others or may have any impact on marks or qualification.

Then the following procedure must be followed:

1. Inform the Student Office as soon as possible in person or by telephone on +44 (0)20 7594 5122 followed by a confirmation email to b.ross@imperial.ac.uk and samantha.kemp@imperial.ac.uk. If you cannot contact the Department in person or by telephone, email b.ross@imperial.ac.uk and samantha.kemp@imperial.ac.uk as soon as possible.

2. Obtain the necessary documentary proof – e.g. if you are ill, a doctor's note from a professionally recognised doctor. The College Health Centre is the best place for this.

3. Complete the form requesting consideration of mitigating circumstances and submit it, together with the documentary proof as soon as possible, and definitely within 5 working days of the start of the circumstances. In the case of coursework submission, this must be before the deadline. In the case of exam or test attendance, this must be before the exam. The form should be submitted to the Student Office except in the case where confidentiality is essential, in which case it should be submitted to the Postgraduate Tutor, and the Student Office should be notified that it has been submitted.

If the circumstances described in the request form are not considered serious enough to be genuine mitigating circumstances, or the evidence is not sufficient, then the request will be rejected, and the situation will be treated as it would have been had the request not been made.

For example if an exam was missed for a reason that was not considered a genuine mitigating circumstance, then the exam would be counted as a fail.

All cases will be considered by a Departmental Mitigating Circumstances Panel by the end of each term, who will make a provisional ruling. This is subject to approval by the Examinations Board, which meets at the end of the academic year. This provisional ruling will be communicated to the student immediately.

If the mitigating circumstances for a missed exam(s) are accepted by the Mitigating Circumstances Committee, the potential outcomes can include:
1. The candidate may enter the examination in those elements in which he/she was not able to be examined on the next occasion when the examination is held in order to complete the examination, or

2. (Be set a special examination in those elements of the examination missed as soon as possible and/or be permitted to submit any work prescribed (e.g. report) at a date specified by the Board of Examiners concerned. The special examination shall be in the same format as specified in the Programme Requirements for the element(s) missed.

If the mitigating circumstances for missed coursework are accepted by the Mitigating Circumstances Committee, the potential outcomes can include:

1. The coursework be accepted for full credit or;
2. A new piece of coursework must be submitted with a new deadline for full credit or;
3. The Committee will suggest an appropriate alternative assessment.
### 4.37 Imperial College London policies and regulations

The below documents are extremely important for all students at Imperial and it is important that you familiarise yourself with them.

| College Academic and Examination Regulations | [https://www.imperial.ac.uk/about/governance/academic-governance/regulations/](https://www.imperial.ac.uk/about/governance/academic-governance/regulations/) |
| Academic Policy | [http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/](http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/) |
| Student Terms and Conditions | [http://www.imperial.ac.uk/students/terms-and-conditions/](http://www.imperial.ac.uk/students/terms-and-conditions/) |
| Complaints, Appeal, and Discipline | [http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/complaints-appeals-and-discipline/](http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/complaints-appeals-and-discipline/) |
| Student Feedback Policy and Guidelines | [http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/student-feedback/](http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/student-feedback/) |
| Placement Learning Policy and Good Practice | [http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/placement-learning/](http://www.imperial.ac.uk/about/governance/academic-governance/academic-policy/placement-learning/) |
| **Policy on Student Employment During Studies** | [https://workspace.imperial.ac.uk/registry/Public/Procedures%20and%20Regulations/Policies%20and%20Procedures/Student%20Employment%20During%20Studies.pdf](https://workspace.imperial.ac.uk/registry/Public/Procedures%20and%20Regulations/Policies%20and%20Procedures/Student%20Employment%20During%20Studies.pdf) |

Other useful information and support services:

| Registry | [http://www.imperial.ac.uk/admin-services/registry/](http://www.imperial.ac.uk/admin-services/registry/) |
| Careers Service | [http://www.imperial.ac.uk/careers](http://www.imperial.ac.uk/careers) |
| Accommodation: | [http://www.imperial.ac.uk/study/campus-life/accommodation/](http://www.imperial.ac.uk/study/campus-life/accommodation/) |
| Student Finance: | [http://www.imperial.ac.uk/fees-and-funding/](http://www.imperial.ac.uk/fees-and-funding/) |
| ICT Service | [http://www.imperial.ac.uk/students/online-services](http://www.imperial.ac.uk/students/online-services) |
| Sport Imperial | [http://www.imperial.ac.uk/sport/](http://www.imperial.ac.uk/sport/) |
| Student records and data: | [http://www.imperial.ac.uk/student-records-and-data](http://www.imperial.ac.uk/student-records-and-data) |
| Alumni services | [http://www.imperial.ac.uk/alumni](http://www.imperial.ac.uk/alumni) |
| Further study | [http://www.imperial.ac.uk/study/pg/open-days-and-visits/postgraduate-open-day/](http://www.imperial.ac.uk/study/pg/open-days-and-visits/postgraduate-open-day/) |