Contents

Table of Contents 1
Welcome from Program Director 2
Mission Statement 3
Course Structure, JS Modules and Timetables and Key Dates 4
Annual Schedule & Dates of Examinations 9
Training and Career Development 10
College Regulations 15
College Information 16
Overview

Welcome to the Junior Sophister Year in Biomedical Engineering

As students of the Biomedical Engineering stream of School of Engineering, you are among the select few who have joined the biomedical engineering community at Trinity College Dublin for an education that will enable you to become the next leaders in the field of biomedical engineering.

Some of the most exciting work in engineering today takes place at the intersection of disciplines. Research in biomedical engineering is an example of where the biological, physical and digital worlds intersect and where you have the opportunity to have a profound impact on society.

Engineering is not just about crunching numbers or solving problems; it is seeing how problems affect society and how society actually changes because of the solutions you provide. You have an opportunity here as students in biomedical engineering to come involved in that community, so that, as you move into your professional life, you will become a leader who has an impact on the human condition. To see this impact, I recommend you watch the following video:

http://students.embs.org/

You are part of a discipline that offers great opportunities for learning and advancement within Ireland’s premier university. You are now part of the Trinity Centre for Bioengineering. The Centre brings together over 30 academics from the Schools of Engineering, Natural Sciences, Dental Sciences and Medicine in Trinity and colleagues from the Royal College of Surgeons in Ireland, Dublin City University and University College Dublin. There are also over 100 postdoctoral, PhD and MSc researchers working in the Centre. All of these researchers are involved in exciting new developments in biomedical engineering ranging from developing new materials for use in cardiac care, analysing minute electrical signal changes in the brain for neurological diagnosis to artificially growing new tissue for organ transplantation. The Trinity Centre for Bioengineering has extensive clinical research in all the five teaching hospitals in Dublin (St James’s Hospital, Tallaght Hospital, St Vincent’s University Hospital, The Mater Misericordiae Hospital and Beaumont Hospital). As a member of this biomedical community, use the opportunity to learn from activities in the Trinity Centre for Bioengineering, so that you can relate your course material to the real clinical challenges that are being researched and the solutions being generated.

The Trinity Centre for Bioengineering is based in the Trinity Biomedical Sciences Centre and many of its laboratories are located here. You will be sent emails of seminars, news and other developments. Keep up to date with these and your studies will become more fruitful and relevant.

This handbook contains information regarding the course including modules, assessment, course regulations, faculty members and important contact details.

On behalf of all the lecturers and staff, I would like to wish you every success. We look forward to you becoming part of the Trinity College Biomedical Engineering family as you embark on making your mark on society at large.

If you have any questions or comments, please do not hesitate to contact us.

Professor Daniel Kelly
Course Director MAI Program in Bioengineering
Biomedical Engineering – Mission Statement

The Trinity Centre for Bioengineering (TCBE) in the School of Engineering at Trinity College Dublin carries out world class research in four research themes: (1) Tissue Engineering & Regenerative Medicine, (2) Medical Devices & Advanced Drug Delivery, (3) Biomechanics & Mechanobiology and (4) Neural Engineering. These themes are based on the intersection of biomedical science and engineering and form the foundation for advances in external and implantable devices, surgical and medical device design, as well as informing clinical studies and interventions in ageing, neurodegeneration and rehabilitation. The Centre provides a structure to bring bioengineers, basic scientists and clinicians together to focus on important clinical needs.

The TCBE also has a long and distinguished tradition in postgraduate education, combining fundamental research with translation to clinical practice. The new Biomedical Engineering stream now extends this to the undergraduate BA/MAI programme within the School of Engineering. The main objective of this new stream is the pursuit of excellence in teaching and research in Biomedical Engineering with the central aim of producing graduate engineers with a capacity for independent thought in problem solving and creative analysis & design.

To achieve this, we must:

• instill in students an enthusiasm for the art and practice of Biomedical Engineering;
• teach engineering, medical sciences and mathematics which underpin the subject areas of Biomedical Engineering;
• demonstrate the application of these principles to the analysis, synthesis and design of biomedical engineering components and systems;
• foster the development of team working skills;
• encourage students to exercise critical judgment and develop communication skills necessary to make written and oral presentations of their work.

These objectives are underpinned by:

• undertaking both basic and applied research
• provision of advanced facilities for students to undertake graduate research degrees
• the development of academic staff in teaching and research by ensuring that adequate resources are available to assist them
• ensuring that the research work is of the highest international standard by participation in international conferences and publication in peer-reviewed scientific journals.

In addition, we must consider:

• the requirements of the relevant professional institutions
• the needs of Irish and European industry in the curriculum.
JS Modules and Timetables

The Junior Sophister year is based on the general Freshman years and is the start of your specialization in Biomedical Engineering. In your studies you should aim to work a minimum of 50 hours per week. With a timetabled schedule of about 25 hours per week, this means you should be planning independent study of at least 25 hours per week. This includes reading course material prior to lectures - you should not expect to be given all the module material in the lectures and tutorials. The table below shows the JS modules, their credit value and the coordinator.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Code</th>
<th>Module Title</th>
<th>ECTS</th>
<th>Term</th>
<th>Module Coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA3E1</td>
<td>3E1</td>
<td>Engineering Mathematics V</td>
<td>5</td>
<td>S1</td>
<td>Dr Joe O’Hogain (<a href="mailto:johog@maths.tcd.ie">johog@maths.tcd.ie</a>)</td>
</tr>
<tr>
<td>ME3B2</td>
<td>3B2</td>
<td>Fluid Mechanics</td>
<td>5</td>
<td>S1</td>
<td>Prof. Craig Meskell (<a href="mailto:cmeskell@tcd.ie">cmeskell@tcd.ie</a>)</td>
</tr>
<tr>
<td>ME3B4</td>
<td>3B4</td>
<td>Mechanical Engineering Materials</td>
<td>5</td>
<td>S1</td>
<td>Prof. Mark Ahearne (<a href="mailto:ahearnem@tcd.ie">ahearnem@tcd.ie</a>)</td>
</tr>
<tr>
<td>ME3B5</td>
<td>3B5</td>
<td>Mechanics of Machines</td>
<td>5</td>
<td>S1</td>
<td>Dr. Ciaran Simms (<a href="mailto:csimms@tcd.ie">csimms@tcd.ie</a>)</td>
</tr>
<tr>
<td>EE3C01</td>
<td>3C1</td>
<td>Signals &amp; Systems</td>
<td>5</td>
<td>S1</td>
<td>Prof. Liam Dowling (<a href="mailto:Liam.Dowling@tcd.ie">Liam.Dowling@tcd.ie</a>)</td>
</tr>
<tr>
<td>EE3BIO1</td>
<td>3BIO1</td>
<td>Anatomy &amp; Physiology</td>
<td>5</td>
<td>S1</td>
<td>Dr. Deirdre Edge (<a href="mailto:edged@tcd.ie">edged@tcd.ie</a>)</td>
</tr>
<tr>
<td>EE3E3</td>
<td>3E3</td>
<td>Probability &amp; Statistics</td>
<td>5</td>
<td>S1</td>
<td>Prof. Liam Dowling (<a href="mailto:Liam.Dowling@tcd.ie">Liam.Dowling@tcd.ie</a>)</td>
</tr>
<tr>
<td>CE3E4</td>
<td>3E4</td>
<td>Innovation &amp; Entrepreneurship for Engineers</td>
<td>5</td>
<td>S2</td>
<td>Prof. Niamh Harty (<a href="mailto:niamh.harty@tcd.ie">niamh.harty@tcd.ie</a>)</td>
</tr>
<tr>
<td>ME3B7</td>
<td>3B7</td>
<td>Manufacturing Technology and Systems</td>
<td>5</td>
<td>S1</td>
<td>Assistant Professor Daniel Trimble (<a href="mailto:dtrimble@tcd.ie">dtrimble@tcd.ie</a>)</td>
</tr>
<tr>
<td>ME3B3</td>
<td>3B3</td>
<td>Mechanics of Solids</td>
<td>5</td>
<td>S2</td>
<td>Prof. Tim Persoons (<a href="mailto:tim.persoons@tcd.ie">tim.persoons@tcd.ie</a>)</td>
</tr>
<tr>
<td>EE3C03</td>
<td>3C3</td>
<td>Analogue Circuits</td>
<td>5</td>
<td>S2</td>
<td>Assistant Professor April Graham (<a href="mailto:grahamp@tcd.ie">grahamp@tcd.ie</a>)</td>
</tr>
<tr>
<td>ME3BIO2</td>
<td>3BIO2</td>
<td>Biomedical Device Design Project</td>
<td>5</td>
<td>S2</td>
<td>Prof. Caitriona Lally (<a href="mailto:lallyca@tcd.ie">lallyca@tcd.ie</a>)</td>
</tr>
</tbody>
</table>
Junior Sophister Module Sheets

https://www.tcd.ie/Engineering/undergraduate/baiyear3/biomed/
Prerequisites

The MAI programme is structured to facilitate delivery of higher-level content through prerequisite modules. The term ‘prerequisite’ indicates a module that must be completed prior to engaging a new one. Only in exceptional circumstances will a student be permitted to progress without having completed a prerequisite module. Some of the fourth year modules are prerequisites for some of the fifth-year modules and some MAI projects in the different disciplines. In general, it will not be possible to take fifth-year modules or MAI projects without having completed the required prerequisites for these activities (see module descriptors for details). Accordingly, for students opting for a placement in their fourth year, or for those following Unitech/Erasmus or another period of study abroad, it will be necessary to ensure prerequisites are met for a suitable set of modules and the project work in the fifth-year.

Meeting the prerequisites in cases where a student opts for a placement in their fourth year or for those following Unitech/Erasmus or another period of study abroad might be achieved by:

1. in the case of a half-year placement, the student taking the prerequisite modules for their intended fifth-year modules/project work in the semester they spend at College (this will generally be the first semester). Prerequisite modules will, where possible, be timetabled for the first semester.

2. in the case of a period of study abroad, the student taking modules equivalent to the prerequisites for their intended fifth-year modules/project work during their period of study abroad in their fourth year

3. by the student taking only fifth-year modules/projects which do not have prerequisites

4. by student taking fourth year prerequisite modules in the first semester of their fifth-year. However, for the latter option, since this would be on a case-by-case basis, the timetable cannot be specifically arranged to facilitate this.

Thus, a student who opts for a placement or for a period of study abroad must understand that this will influence their options in the fifth-year. Accordingly, a student intending to pursue this option must do so in consultation with their Head of Department or his/her delegate. In special circumstances, where a student can demonstrate to the module coordinator that he/she has substantially met the learning outcomes of a prerequisite module through other means, students may be allowed to take the fifth-year module without having completed the designated fourth year prerequisite(s).
Lecture and Tutorial Timetable

Attendance at lectures is compulsory. Attendance at laboratories and tutorials is compulsory.

The timetable for lectures is provided below. The tutorial Schedules will be announced at the start of each semester. Please note that you must attend the particular tutorial sessions to which you have been assigned. Students cannot swap sessions because of the complexity of the timetable, the large numbers in the year and the limited accommodation available.

The most up to date timetable is always online at:

https://www.tcd.ie/Engineering/undergraduate/pdf/JSTimetable_BIO.PDF

You are advised to check the online timetable regularly.

Semester 1 - Lunch time seminar series for 3rd year Bio students:

<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/10/2017</td>
<td>Mark Ahearne</td>
<td>Engineering therapies for corneal regeneration</td>
</tr>
<tr>
<td>16/10/2017</td>
<td>Conor Buckley</td>
<td>A pain in the back? Engineering solutions to regenerate.</td>
</tr>
<tr>
<td>23/10/2017</td>
<td>David Taylor</td>
<td>Breaking Bones</td>
</tr>
<tr>
<td>06/11/2017</td>
<td>Cathal Kearney</td>
<td>Drug Delivery: it's all about timing</td>
</tr>
<tr>
<td>13/11/2017</td>
<td>Michael Monaghan</td>
<td>Interference: An alterRNAtive therapy towards ECM engineering</td>
</tr>
<tr>
<td>20/11/2017</td>
<td>Crisina Simoes-Franklin</td>
<td>&quot;The Gift of Sound: Cochlear Implantation in Ireland&quot;</td>
</tr>
<tr>
<td>27/11/2017</td>
<td>Matthew Haugh</td>
<td>MSC Mechanobiology: Cells as strain gauges</td>
</tr>
<tr>
<td>04/12/2017</td>
<td>David Hoey</td>
<td>Bone mechanobiology: why physical exercise is good for your bones</td>
</tr>
<tr>
<td>11/12/2017</td>
<td>Triona Lally</td>
<td>Cardiovascular Biomechanics - At the Heart of Cardiovascular Disease</td>
</tr>
</tbody>
</table>
Laboratories

Each module in JS has one or two laboratory experiments attached to it. Students are expected to keep a log book recording the details of every experiment performed and to write a technical report about each experiment. Each student is required to submit her/his report neatly presented and by the date specified to avoid penalty. Guidelines as to the required length and format of each report will be specified by the lecturer concerned.

Laboratory groups and timetable will be published at the beginning of the semester. Please note that you must attend the particular laboratory sessions to which you have been assigned. Students cannot swap sessions because of the complexity of the timetable, the large numbers in the year and the limited accommodation available.

A no show at a lab results in a zero mark even if a report is submitted.

No report submitted means a zero mark even if the lab was attended

Labs cannot be taken summer/autumn if missed during the year and marks for the annual examinations will be carried forward to any supplemental.

Laboratory Timetables

Laboratory timetables will be forwarded to students via email and posted on the noticeboards in Parsons Building
<table>
<thead>
<tr>
<th>Cal. Wk</th>
<th>Dates 2017/18 (week beginning)</th>
<th>Outline Structure of Academic Year 2017/18</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>28-Aug-17</td>
<td>Supplemental Examinations</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>04-Sep-17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>11-Sep-17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>18-Sep-17</td>
<td>Freshers' Week / Undergraduate Orientation Week</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>25-Sep-17</td>
<td>Teaching Week 1</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>02-Oct-17</td>
<td>Teaching Week 2</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>09-Oct-17</td>
<td>Teaching Week 3</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>16-Oct-17</td>
<td>Teaching Week 4</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>23-Oct-17</td>
<td>Teaching Week 5</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>30-Oct-17</td>
<td>Teaching Week 6 (Monday, Public Holiday)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>06-Nov-17</td>
<td>Teaching Week 7 - Study Week</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>13-Nov-17</td>
<td>Teaching Week 8</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>20-Nov-17</td>
<td>Teaching Week 9</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>27-Nov-17</td>
<td>Teaching Week 10</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>04-Dec-17</td>
<td>Teaching Week 11</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>11-Dec-17</td>
<td>Teaching Week 12</td>
<td>6-Michaelmas Term ends Sunday 17 December 2017</td>
</tr>
<tr>
<td>17</td>
<td>18-Dec-17</td>
<td>Christmas Period (College closed)</td>
<td>22 December 2017 to 1 January 2018, inclusive</td>
</tr>
<tr>
<td>18</td>
<td>25-Dec-17</td>
<td>201 Jan-18</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>01-Jan-18</td>
<td>Foundation Scholarship Examinations</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>08-Jan-18</td>
<td></td>
<td>Note: it may be necessary to hold some exams in the preceding week.</td>
</tr>
<tr>
<td>21</td>
<td>15-Jan-18</td>
<td>Teaching Week 1</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>22-Jan-18</td>
<td>Teaching Week 2</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>29-Jan-18</td>
<td>Teaching Week 3</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>05-Feb-18</td>
<td>Teaching Week 4</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>12-Feb-18</td>
<td>Teaching Week 5</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>19-Feb-18</td>
<td>Teaching Week 6</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>26-Feb-18</td>
<td>Teaching Week 7 - Study Week</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>05-Mar-18</td>
<td>Teaching Week 8</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>12-Mar-18</td>
<td>Teaching Week 9</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>19-Mar-18</td>
<td>Teaching Week 10 (Monday, Public Holiday)</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>26-Mar-18</td>
<td>Teaching Week 11 (Friday, Good Friday)</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>02-Apr-18</td>
<td>Teaching Week 12 (Monday, Easter Monday)</td>
<td>6-Hilary Term ends Sunday 8 April 2018</td>
</tr>
<tr>
<td>33</td>
<td>09-Apr-18</td>
<td>Revision Trinity Week (Monday, Trinity Monday)</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>16-Apr-18</td>
<td>Revision</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>23-Apr-18</td>
<td>Revision</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>30-Apr-18</td>
<td>Annual Examinations 1</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>07-May-18</td>
<td>Annual Examinations 2 (Monday, Public Holiday)</td>
<td>Annual Examination period: Four weeks followed by five weeks for marking, examiners’ meetings, publication of results, Courts of First Appeal and Academic Appeals.</td>
</tr>
<tr>
<td>38</td>
<td>14-May-18</td>
<td>Annual Examinations 3</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>21-May-18</td>
<td>Annual Examinations 4</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>28-May-18</td>
<td>Marking/Courts of Examiners/Results</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>04-Jun-18</td>
<td>Marking/Courts of Examiners/Results (Monday, Public Holiday)</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>11-Jun-18</td>
<td>Marking/Courts of Examiners/Results</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>18-Jun-18</td>
<td>Marking/Courts of Examiners/Results/ Courts of First Appeal</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>25-Jun-18</td>
<td>Courts of First Appeal/Academic Appeals</td>
<td>6- Statutory (Trinity) Term ends Sunday 1 July 2018</td>
</tr>
<tr>
<td>45 to 52</td>
<td>02 Jul 2018 - 26 Aug 2018</td>
<td>Postgraduate dissertations/theses/Research 1-8</td>
<td>Eight weeks between end of statutory (Trinity) term and commencement of statutory (Michaelmas) term. This period is also used for writing up Masters dissertations and research theses due for submission in September.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6- Ends Sunday 26 August 2018</td>
</tr>
</tbody>
</table>
Training and Career Development

Health Research Board Summer Scholarships

The HRB Summer Scholarship scheme offers undergraduates studying in a health-related or other relevant area (e.g. statistics, informatics, management sciences) an opportunity to undertake a health or social care research project and to work with researchers in high-quality research environments to gain research experience at an early stage in their career path.

The scholarship scheme is aimed at full-time undergraduates of strong potential, based in a university/third level institute and studying for a health-related or other relevant degree (e.g. health sciences, social sciences, informatics, mathematics, statistics, management sciences). The student must be planning to work on a health and/or social care-related project, with a suitably qualified supervisor who is experienced in this area.

Successful applicants will undertake the scholarship on a full-time basis for a maximum of eight weeks during the summer of 2017. The Scholarship will fund the undergraduate at a rate of €250 per week. Applications are not accepted from final year students.

Calls for applications are usually on an annual basis. Last year’s call opened in December 2016 and details of that call can be found here: http://www.hrb.ie/research-strategy-funding/grants-and-fellowships/hrb-grants-and-fellowships/grant/164/.

Future funding calls can be found here: http://www.hrb.ie/research-strategy-funding/open-grants-and-fellowships/

Summer Internships

Internships in research labs in the Trinity Centre of Bioengineering are available at the end of the SS year. Ms Melissa Caffrey coordinates information on the availability of vacation internships. She can be contacted for further information by email at bioeng@tcd.ie.

Vacation Work

Vacation work in a number of biomedical companies is available at the end of the SS year. Dr. Bruce Murphy is the industry liaison and Ms Melissa Caffrey coordinates information on the availability of vacation employment.
International and National Biomedical Engineering Societies

IEEE Engineering in Medicine & Biology Society (IEEE EMBS: www.embs.org)

The IEEE Engineering in Medicine and Biology Society (EMBS) is the world's largest international society of biomedical engineers. The organization's 9,100 members reside in some 97 countries around the world. EMBS provides its members with access to the people, practices, information, ideas and opinions that are shaping one of the fastest growing fields in science. The IEEE EMBS has six publications which are available online through the Library to Trinity College students:

- Transactions on Biomedical Engineering
- IEEE PULSE
- Transactions on Neural Systems and Rehabilitation Engineering
- Transactions on Information Technology in Biomedicine
- Reviews in Biomedical Engineering
- IEEE Journal of Translational Engineering in Health and Medicine (J-TEHM)

The student subscription to the IEEE EMBS is $27 per year.

The IEEE has developed the Life Sciences Portal (http://lifesciences.ieee.org/), which has become one of the premiere global resources and online communities for knowledge, opportunity, and collaboration, enabling cross-disciplinary solutions in life sciences. Sign up to this site to keep up to date with new developments and career opportunities.

Biomedical Engineering Society (BMES: bmes.org)

The Biomedical Engineering Society (BMES) aims to serve as the world's leading society of professionals devoted to developing and using engineering and technology to advance human health and well-being. The Mission of the BMES is to build and support the biomedical engineering community, locally, nationally and internationally, with activities designed to communicate recent advances, discoveries, and inventions; promote education and professional development; and integrate the perspectives of the academic, medical, governmental, and business sectors.

The Biomedical Engineering Society produces several publications to keep its members informed of activities in the Society and developments in the biomedical engineering profession. These journals are available to Trinity College students through online access via the Library.
European Society for Engineering and Medicine (ESEM: www.esem.org)

The mission of ESEM is to establish a platform of cooperation between medicine and engineering on a European basis. Such a bridge between medicine and engineering is vital in today’s highly technological multi-disciplinary health care. Without this, medical doctors cannot keep up with rapidly developing health care technology and cannot provide their patients with state-of-the-art medical diagnosis and treatment. Equally, without close contact with medical doctors, engineers cannot focus their efforts upon the most pressing medical problems.

ESEM’s mission brings benefits to medicine, to engineering and hence to the community, by supporting and identifying to medical doctors current and developing engineering contributions and technical developments in medicine; and by identifying for engineers specific medical problems which need to be solved by appropriate technological means.

The basic objectives of ESEM are the following:

- To promote cultural and scientific exchanges at a European level between engineers (of all disciplines), related industries, and the medical profession.
- To encourage the creation of European research and clinical networks.
- To reinforce (by wider dissemination of information) European potentialities in engineering and medicine.
- To contribute to the promotion of European Union programmes in the fields of Engineering and Medicine.
- To participate in specific education and training courses for European engineers and European medical and health care workers.
- To cooperate closely with other relevant international and national organisations concerned with engineering and/or medicine.

The student subscription to ESEM is €20 per year.

Engineers Ireland

(www.engineersireland.ie/Groups/Dviiions/Biomedical.aspx)

With almost 24,000 members from every discipline of engineering, Engineers Ireland is the voice of the engineering profession in Ireland. 1600 engineers are estimated to be working in the biomedical industry in Ireland. This industry accounts for approximately 8% of Ireland’s GNP.

The mission of Engineers Ireland is to provide a professional and social network for learning and developing potential businesses in the thriving field.

The student membership to Engineers Ireland is free.
Information on Electronic Engineering Labs

Introduction:

The programme of Electronic Engineering Laboratories is intended to complement and enhance the material covered in lectures for the wide range of subjects in the Junior Sophister year. Marks awarded for these laboratories will contribute to the overall mark for the particular subject at Annual and Supplemental Examinations. Each laboratory will require a properly structured report to be written up and submitted by each individual student, which will then be marked by the laboratory demonstrator and returned to the student.

Attendance:

Attendance at the laboratories is compulsory and will be monitored throughout the year. Any report submitted by a student who has not attended the corresponding laboratory will not be marked. If a laboratory is missed due to illness or participation in an official College activity this should be certified and arrangements will be made where possible for the laboratory to be undertaken at a later stage. Casual or unexplained absences will not be facilitated. Please also note that laboratories not completed during the teaching semesters cannot be repeated during the summer vacation for supplemental examinations and existing marks will be carried forward to the supplemental results.

Reports:

You are required to write up a properly structured report on each laboratory undertaken. You may also be requested by the demonstrator to save or print out some electronic files from computer simulations as part of the submission. The report may be typed or handwritten. If it is handwritten it must be clearly legible to the demonstrator. The structure of the report should include:

Name: The student’s name and ID number.

Title: The code and name of the laboratory.

Date: Date on which laboratory was undertaken.

Aims: The specific intentions and objectives of the laboratory

Experimental Set-up: Details of the equipment used and the experimental set-up. If the laboratory is a simulation type the name and function of the software packages used should be given.

Procedure: An account of the steps involved in carrying out the experiment. A summarised version of the more detailed instructions given in the laboratory handout will suffice.

Results: A clear and accurate record of the results obtained. This should include tables of experimental data, numerical parameters, printouts of simulation waveforms or other appropriate forms of results. It should be possible from the results for a reader to get a complete understanding of the outcome of the laboratory.

Discussion: A detailed analysis and criticism of the results obtained. You should discuss the accuracy of the results, any limitations and their significance. You should relate them to the material covered in the lectures where possible. You should indicate what you have learned from the laboratory that is important in your discipline.
**Conclusion**: You should consider the importance and implications of the experiment you have carried out in the wider context of Electronic Engineering. You should give your opinions on what is good or bad practice concerning the topic covered by the laboratory and any professional ethical issues you feel are important.

**Submission**: The deadline for handing up your report is 1 week after completion of the lab unless otherwise stated by the relevant lecturer. Reports are submitted by placing them in the marked box in the PC Lab on the first floor of the printing house. The box will be emptied once a week and you will receive an email acknowledgement of your submission.

**Note**: Please keep a copy of your report for your records
COLLEGE RULES AND REGULATIONS


PLAGIARISM

In the academic world, the principal currency is ideas. As a consequence, you can see that plagiarism – i.e. passing off other people’s ideas as your own– is tantamount to theft. It is important to be aware the plagiarism can occur knowingly or unknowingly, and the offence is in the action not the intent.

Plagiarism is a serious offence within College and the College’s policy on plagiarism is set out in a central online repository hosted by the Library which is located at http://tcd-ie.libguides.com/plagiarism. This repository contains information on what plagiarism is and how to avoid it, the College Calendar entry on plagiarism and a matrix explaining the different levels of plagiarism outlined in the Calendar entry and the sanctions applied.

Undergraduate and postgraduate new entrants and existing students, are required to complete the online tutorial ‘Ready, Steady, Write’. Linked to this requirement, all cover sheets which students must complete when submitting assessed work, must contain the following declaration:

I have read and I understand the plagiarism provisions in the General Regulations of the University Calendar for the current year, found at: http://www.tcd.ie/calendar

I have also completed the Online Tutorial on avoiding plagiarism ‘Ready, Steady, Write’, located at http://tcd-ie.libguides.com/plagiarism/ready-steady-write

Plagiarism detection software such as “Turnitin” and Blackboard’s “SafeAssign” may be used to assist in automatic plagiarism detection. Students are encouraged to assess their own work for plagiarism prior to submission using this or other software.
COLLEGE INFORMATION

Student Disability Services

Do you know what supports are available to you in College if you have a disability or a specific learning disability? If you have a disability or a specific learning disability (such as dyslexia) you may want to register with Student Disability Services. Further information on our services can be found at www.tcd.ie/disability.

Declan Reilly and Alison Doyle are the Disability Officers in College. You can make an appointment to see them by phoning 6083111, or emailing them at:  disab@tcd.ie.

Skills4Study Campus (S4SC)

Skills4studycampus (S4SC) is a fully interactive e-learning resource, which helps students to develop study skills and is suitable for students on all modules and in any year of study.

Published by Palgrave Macmillan, core skills are developed through personalized interactive activities, tests and assessments. Utilised by HEIs in UK and in ROI includes UCC and UCD.

In 2011 – 2012 piloted to all JF students in School of Nursing and Midwifery, Social Work and Social Policy, Drama and Theatre Studies, TAP, Mature and disability students.

Feedback from staff has been very encouraging. Fully embedded by School of Nursing (module handbook, skills module) and end of year analysis of academic performance indicates positive correlation with S4SC usage / module completion.

Study skills can be provided ‘anytime, anywhere’, fully accessible to students living outside of Dublin, or who commute long distances, have family or work commitments, extensive off campus placements, or heavy timetables.

Due to the large number of students it is not possible to provide this via the Blackboard Learn, the College Disability Service will fund access to S4SC for all TCD undergraduate students and academic staff for AY 2012 – 2013. Login will continue to be provided via the link on www.tcd.ie/local, additional links should be added on Student Homepage, Orientation website and the new student portal my.tcd.ie.

A key factor is engagement and support from academic staff and embedding of resource within module materials. The College Disability Service proposes to present S4SC to all Directors of Undergraduate Teaching and Learning at the beginning of the next academic year.

The first module ‘Getting ready for academic study’ is a free open resource. It is suggested that a link is added to the registration email issued to all prospective students via GeneSIS. This will identify this resource at the point of pre-entry so that students have already been familiarised with its structure and content.

Student 2 Student

S2S offers trained Peer Supporters if you want to talk confidentially to another student or just to meet a friendly face for a coffee and a chat. Peer Supporters are there to assist with everything from giving you the space to talk about things to helping you access resources and services in the College. You can email us directly to request a meet-up with a Peer Supporter or can pop in to the Parlour to talk directly to one of our volunteers and arrange a meeting.

S2S is supported by the Senior Tutor’s Office and the Student Counselling Service.
Safety

We operate a ‘safe working environment’ policy and we take all practical precautions to ensure that hazards or accidents do not occur. We maintain safety whilst giving you the student very open access to facilities. Thus safety is also your personal responsibility and it is your duty to work in a safe manner. By adopting safe practices you ensure both your own safety and the safety of others.

Please read the following Safety Documents for working practices in the Departments of Mechanical and Manufacturing Engineering and in the Department of Electronic and Electrical Engineering:

http://www.mme.tcd.ie/ (bottom left tab)


If you are working in Trinity Centre for Bioengineering Laboratories in Trinity Biomedical Sciences Institute, please contact Mr Simon Carroll, Senior Technical Officer at scarrol6@tcd.ie to complete necessary Health and Safety paperwork prior to completing any laboratory work.

Please ensure you comply with the instructions given in these important documents. Failure to behave in a safe manner may result in your being refused the use of departmental facilities.

Staff/Student Committee

The Staff/Student Committee meets once a semester to discuss matters of interest and concern to students and staff. It comprises class representatives from each year.

Facilities

All modules in the Sophister years are supplemented by a full programme of laboratory work. The Junior Sophister laboratory timetable is co-ordinated by Dr. Seamus O’Shaughnessy in the Department of Mechanical and Manufacturing Engineering and Dr. David Corrigan in the Department of Electronic and Electrical Engineering. The laboratories are well equipped for undergraduate work and, in addition, we have extensive research facilities, which are available for projects. The Department of Mechanical and Manufacturing Engineering has its own well-equipped workshops which are managed by Mr. Mick Reilly. The Computer Applications Laboratories are administered by Mr. John Gaynor and we have state of the art work stations which are used extensively in both the Design Module in third year and for the Project work in fourth and fifth years as appropriate. Students are encouraged to make use of these facilities.

The department of electronic and electrical engineering has an undergraduate experimental laboratory on the ground floor of the printing house with bench facilities and equipment for approximately 50 students. It also houses a computer laboratory with provision of state of the art PC’s for 30 students. There is also a project laboratory shared by Senior Sophister students. Teaching facilities in Áras an Phiarsaigh include a 20 seat laboratory containing music technology application hardware and software, a smaller teaching laboratory as well as a small recording studio and an audio/video editing facility. The Microelectronics Technology Laboratory located in the Sami Nasr building has a class 1,000 area which contains a wet bench and two furnaces where undergraduate students can carry out experiments in the integrated circuit fabrication process under close supervision. A mask aligner, Micromanipulator test probe set-up and various microscopes are also available.
Location of the TRINITY CENTRE FOR BIOENGINEERING (TCBE) and SCHOOL OF MEDICINE
Contacts:

Course administration: Melissa Caffrey
Tel: +353-1-8963393
Email: bioeng@tcd.ie

Course coordinator: Prof Daniel Kelly
Email: kellyd9@tcd.ie

JS Year Tutor: Prof Caitriona Lally
Email: lallyca@tcd.ie

Global Officer: Deirbhle O'Reilly
Email: InternationalEng@tcd.ie