



**Trinity College Dublin**

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

Mechanical & Manufacturing Engineering

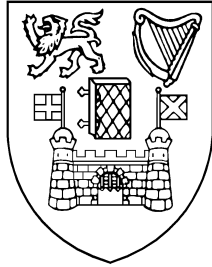
**Engineering with Management**

**B.Sc. (Ing.)**

**Junior Freshman Handbook**

**2015-2016**





**Discipline of Mechanical & Manufacturing Engineering  
Faculty of Engineering and Systems Sciences  
Trinity College Dublin**

**Junior Freshman Handbook  
2015/2016**

***Honours degree programme in***

**Engineering with Management  
B.Sc. (Ing.)**

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# 1 Introduction

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## Welcome

On behalf of all the staff and students of the *Department of Mechanical & Manufacturing Engineering* we would like to welcome you to Trinity College Dublin, but more particularly as a student of this department on the degree programme in *Engineering with Management*.

The department has 19 academic, 10 technical, three administrative staff, approximately 220 undergraduate students in 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year of the BAI/MAI, approximately 80 students in the five years of the B.Sc./MAI programme, and 50 postgraduate students. As a department we have a well-deserved reputation for good teaching and research, but above all we take particular pride in being student friendly and in maintaining a good working atmosphere. So if you should experience any difficulties whether personal or academic, particularly in your first few weeks at TCD, do not hesitate to contact either of us, or indeed any other member of the academic staff.

The intake of students into a degree programme is a very significant event for any department. You are therefore a special and unique group of students who along with your lecturers will experience exciting changes over the next few years. Technology is changing at an ever increasing pace and this is particularly so within the field of manufacturing engineering. Consequently over the next few years you will cover a course of study that will provide you with the knowledge to understand the fundamentals of engineering, science, and management, but more importantly you will develop skills that will enable you to use this knowledge in the rapidly changing environment of manufacturing engineering.

This degree programme is one of two accredited engineering degrees provided in TCD, and a lot of hard work has gone in, and continues to go in, to ensure its continued success. We have no doubt that if you work hard, yet become involved and enjoy College life, you too will succeed. For our part, we will do our very best to assist you.

Enjoy the next 5 years!

Professor Darina Murray

Head of Department

September, 2015.

Prof. Kevin Kelly

Academic Director

Engineering with

Management

## A Few Wise Words

Everybody says college is different from school. Of course, in lots of obvious ways it is different, and no doubt you'll enjoy finding out just what those differences are. In not-so-obvious ways though, college is *very* different from school, and in this section we concentrate on how the academic side of university life is different and what you need to do about it.

1. You're not at school. We want you to do more than simply reproduce what you are told in lectures. You need to get a good *command* of the material. In engineering-related disciplines, the best way to do this (and the best way to know that you have really learned something) is to apply your new knowledge to solving new problems – not just repeating the examples done in class, but to similar (and more difficult) problems you'll find in textbooks or elsewhere. As a professional engineer, you will have to apply your knowledge and skills to problems you have never seen before; now is a good time to start!
2. Expect the material to be covered much faster than at school. Lecture time is at a premium, so it must be used efficiently. You cannot be taught everything in lectures and tutorials. It is your responsibility to learn the *course* material not just the lecture material. Most of this learning will take place outside of the classroom, and you must be willing to put in the study time necessary to ensure that this learning takes place. If you do fall behind in a course – that is, if you can't continue to understand the lectures as they are given, then you really need to make an effort to catch up right away. Don't be tempted to think that you can somehow catch up at the end of the year – it's almost impossible.
3. A lecturer's job is primarily to provide you with a framework, with *some* of the particulars, to guide you in doing your learning of the concepts and methods that comprise the material of the course. It is not to 'program' you with isolated facts and problem types or to monitor your progress. Your job is to fill out that framework with a thorough understanding of the material. Evaluations are based on your understanding of the material, not your ability to recite the lecturer's notes and examples.
4. You are expected to read any recommended textbooks for comprehension. They will provide a broader and more detailed account of the material of the course. Don't read the textbook like a novel. Skimming to get the 'overall picture' is tempting but not very helpful. Attention to detail is the key and this means that reading is often slow-going. Frequently you'll need to use a pencil and paper to work through the examples for yourself. Patience, repetition, and attention to detail are the best ways to genuinely master the material.
5. As for *when* to read the textbooks, it's a good idea to read the appropriate section ahead of the lecture. This way, although you may not fully understand it, you'll be prepared for the lecture, and you will have a good idea what areas to ask questions about. If you haven't looked at the book beforehand, pick up what you can in the lecture (absorb the general

idea and/or take thorough notes) and count on sorting it out later while studying the textbook and transcribing your notes.

6. Practical's and tutorials are far more important than the marks you might get for them, because they give you a chance to develop your understanding of the subject. They are also a good 'reality check' for you to see just how much you really understand. Tutorials, in particular, are a great opportunity to ask for clarification of a lecture or topic. This is what they are for and what the tutorial leader expects - use them to your advantage!
7. In examinations, the examiners set out to probe your mastery of the material in the course. Primarily, they will be looking for your command of the material, as noted above. You'll probably have to solve problems you have never seen before or ones that are presented in a different manner. Hence, preparing for examinations by memorizing types of questions simply won't work – you must demonstrate your *understanding* of the material.
8. Engineering is about co-operation, but also individual effort. The everyday fruits of engineering, such as a jet aircraft or suspensions bridge or a microchip have been designed a built by teams of hundreds, even thousands of engineers working together. These engineers exchange ideas and ultimately co-ordinate their efforts to achieve the overall project goal. However, each component of even the largest project is the result of one individual's engineering skill and imagination.
9. During your time in college, you will be asked to work both individually and in groups. In the first case you should collaborate but ultimately produce your own work. For example, for a computing exercise, discuss the task with your classmates, swap ideas on how to solve the problem, but at the end of the day, design and implement your own solution and write your own report. In those situations when you are asked to work in a group and submit a single project, divide the project into tasks to be carried out by the individuals. Meet and share the results in order to assemble and present the final report.

(Adapted from "Teaching at University Level" by Steven Zucker in *Notices of the AMS*, August 1996.)



## **5<sup>th</sup> Year Options**

Students graduating after 2012 will require a Masters degree to be directly eligible for Chartered status. Therefore the School offers several options for a 5<sup>th</sup> year leading to a Masters degree (MAI).

### ***MAI (Domestic)***

This entails spending the 4<sup>th</sup> and 5<sup>th</sup> year in Trinity College, undertaking additional modules in the specialisation as well as a group project in 4<sup>th</sup> year and a significant individual project in 5<sup>th</sup> year.

### ***MAI (International – Option 1)***

This is offered in collaboration with the European CLUSTER Programme, a consortium of 12 universities. The student spends their 4<sup>th</sup> year abroad and returns to complete their 5<sup>th</sup> year at TCD. The other partner universities are: Technical University of Catalonia, Barcelona; Technische Universität Darmstadt; Technische Universiteit Eindhoven; Institut polytechnique de Grenoble; Instituto Superior Técnico Lisbon; Katholieke Universiteit Leuven/Université Catholique de Louvain; Helsinki University of Technology; Karlsruhe Institute of Technology; Ecole Polytechnique Fédérale de Lausanne; Politecnico di Torino; KTH Royal Institute of Technology Stockholm.

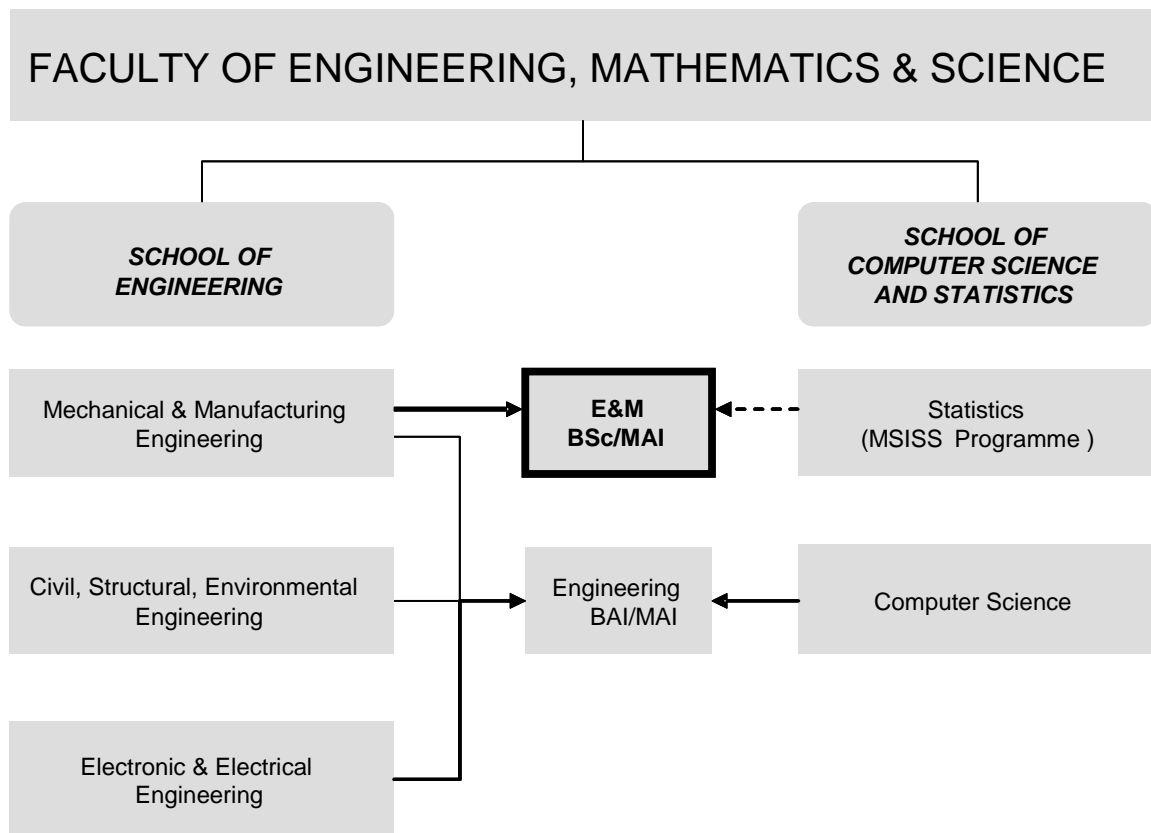
### ***MAI (International – Option 2)***

This is offered in collaboration with the UNITECH Programme, a consortium of 9 universities and 15 multinational corporate partners. Students will spend one semester in a partner university followed by a six month internship with one of the corporate partners.

Partner universities: Chalmers University of Technology, Gothenburg; École Centrale Paris; ETH Zurich; Loughborough University; Politecnico di Milano; RWTH Aachen University; University of Technology Delft; Universitat Politècnica de Catalunya, Barcelona.

## Faculty Structure

The E&M degree programme is run by the Department of Mechanical & Manufacturing Engineering. The department is part of the School of Engineering which forms part of the Faculty of Engineering & Systems Sciences. A significant contribution is made by the Management Science and Information Systems Studies programme of the Department of Statistics. The structure of the faculty is shown below:



## Junior Freshman Year

The first year is designed to introduce you to the fundamental tools of engineering and basic concepts of manufacturing and management science. Most of the engineering and science courses are taken together with the general engineering students. The website has all the course information, timetables, and this handbook.

### Courses

As will all engineering programmes, the first year comprises courses that introduce the basic analytical tools required for subsequent technical courses. Three of these focus on manufacturing and management science topics while the others cover mathematics, computer science, physics, chemistry, and engineering science as shown in Table 1.

1MEMS1	Introduction to Manufacturing	5 credits
1MEMS4	Introduction to Computing	5 credits
ST1004	Introduction to Management Science	10 credits
1E1	Engineering Mathematics I	5 credits
1E2	Engineering Mathematics II	5 credits
1E4	Physics	5 credits
1E5	Chemistry	5 credits
1E6	Electrical Engineering	5 credits
1E7	Mechanics	5 credits
1E10	Engineering Design II: Project	10 credits



## **KEY DATES**

### **Semester 1 (Michaelmas Term)**

12 weeks      Monday, 28 September to Friday 18 December 2015.

### **Semester 2 (Hilary Term)**

12 weeks      Monday, 18 January to Friday 8 April 2016.

### **Revision/Examinations/Results (Trinity Term)**

Annual Examinations commence Monday, 02 May 2016 and finish at the latest on Friday 27 May 2016.

### **Lecture/tutorial/laboratory timetables**

Lecturers assume that you carry out a significant amount of personal study and expect you to be able to understand aspects of the subject not explicitly covered in lectures, tutorials, and laboratories.

The timetable for lectures, tutorials, and laboratories is attached at the end of this handbook. The assignment of students to the numbered laboratory groups will take place after registration. Every effort has been made to create a schedule that leaves significant blocks of time available to you to facilitate library and study time. There is an average of 30 scheduled hours per week. The expectation is that you will spend at least an additional 15 hours/week carrying out personal study (e.g. reading, problem sets, projects, lab reports).

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# Helpful Hints

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## **Location of Rooms and Labs**

The Engineering School is accommodated in a number of buildings located in various parts of the college campus – see the map in Appendix F. Most first year lectures are in the Arts Building, the Hamilton Building, the Physics Department and the Chemistry Department. Computer Science practical's take place in the Engineering Computer Laboratory in Parsons Building. The EM courses are taught in the Parsons Building and the Arts Block. A map of College is shown on the following page.

## **Libraries**

There are many libraries in the College. The main library for the School of Engineering is located in the Hamilton Building at the East end of College. This library houses all the lending and reference materials that will be recommended to the students. The library is open 9.30 a.m. – 10.00 p.m. Monday to Friday and 9.30 a.m. – 1.00 p.m. Saturday throughout the academic year.

The Engineering Librarian is Lorna Flannery (ext. 1805). Should you have any difficulty finding books, or need assistance of any sort, do remember that the library staffs are there to help you and will be very happy to do so.

## **E-mail and Internet Access**

All students are issued with an e-mail name and address on arrival in College. Increasingly, messages for individual students and general messages for the class are sent via e-mail. It is essential that you get into the habit of checking your e-mail regularly. Internet access is provided from computers in the public access computer rooms. Information Systems Services (ISS) issues a handbook to all students describing the use of the public access computer rooms. The Department of Mechanical & Manufacturing Engineering and the Department of Statistics also have computer rooms available for use by EM students. Internet access from these computers is subject to individual department policy.

## **STUDENT INFORMATION SYSTEM (SITS) – ACCESS VIA [my.tcd.ie](http://my.tcd.ie)**

All communications from College will be sent to you via your online portal which will give you access to an ‘in tray’ of your messages. You will also be able to view your timetables online, both for your teaching and for your examinations. All fee invoices/payments, student levies and commencement fees will be issued online and all payments will be carried out online. You will be able to view your personal details in the new system – some sections of which you will be able to edit yourself. Up until 2013, all examination results were published online by the Examinations Office at <http://www.tcd.ie/vpcao/examinations.php> – from now on, your results will also be communicated to you via the online portal. Future plans for the new system include online module registration and ongoing provision of module assessment results.

### **Contacting Academic Registry**

All enquiries should be directed through one of the 4 channels:

- Log an enquiry via ASK AR on the [my.tcd.ie](http://my.tcd.ie) portal
- Via email at [academic.registry@tcd.ie](mailto:academic.registry@tcd.ie)
- Via phone at #4500 [students] or #4501 [staff]

From there they will be answered directly or escalated to the correct team.

**ACADEMIC YEAR STRUCTURE  
2015 / 2016**

Cal. Wk	Dates 2015/16 (week beginning)	Outline Structure of Academic Year 2015/16	Notes
1	31-Aug-15	Supplemental Examinations	Statutory Term (Michaelmas) begins
2	07-Sep-15		
3	14-Sep-15		
4	21-Sep-15	Freshers' Week/Undergraduate Orientation Week	
5	28-Sep-15	Teaching Week 1	Michaelmas Lecture term begins
6	05-Oct-15	Teaching Week 2	
7	12-Oct-15	Teaching Week 3	
8	19-Oct-15	Teaching Week 4	
9	26-Oct-15	Teaching Week 5 (Monday, Public Holiday)	
10	02-Nov-15	Teaching Week 6	
11	09-Nov-15	Teaching Week 7 - Study Week	
12	16-Nov-15	Teaching Week 8	
13	23-Nov-15	Teaching Week 9	
14	30-Nov-15	Teaching Week 10	
15	07-Dec-15	Teaching Week 11	
16	14-Dec-15	Teaching Week 12	← Michaelmas term ends Friday 18 December 2015
17	21-Dec-15	Christmas Period (College closed 24 December 2015 to 3 January 2016, inclusive)	
18	28-Dec-15		
19	04-Jan-16		
20	11-Jan-16	Foundation Scholarship Examinations	Note: It may be necessary to hold some exams in the preceding week.
21	18-Jan-16	Teaching Week 1	Hilary Term begins
22	25-Jan-16	Teaching Week 2	
23	01-Feb-16	Teaching Week 3	
24	08-Feb-16	Teaching Week 4	
25	15-Feb-16	Teaching Week 5	
26	22-Feb-16	Teaching Week 6	
27	29-Feb-16	Teaching Week 7 - Study Week	
28	07-Mar-16	Teaching Week 8	
29	14-Mar-16	Teaching Week 9 (Thursday, Public Holiday)	
30	21-Mar-16	Teaching Week 10 (Friday, Good Friday)	
31	28-Mar-16	Teaching Week 11 (Monday, Easter Monday)	
32	04-Apr-16	Teaching Week 12	← Hilary Term ends Friday 8 April 2016
33	11-Apr-16	Revision Trinity Week (Monday, Trinity Monday)	Trinity Term begins
34	18-Apr-16	Revision	
35	25-Apr-16	Revision	
36	02-May-16	Annual Examinations 1 (Monday, Public Holiday)	Annual Examination period: Four weeks followed by five weeks for marking, examiners' meetings, publication of results, Courts of First Appeal and Academic Appeals.
37	09-May-16	Annual Examinations 2	
38	16-May-16	Annual Examinations 3	
39	23-May-16	Annual Examinations 4	
40	30-May-16	Marking/Courts of Examiners/Results	
41	06-Jun-16	Marking/Courts of Examiners/Results (Monday, Public Holiday)	
42	13-Jun-16	Marking/Courts of Examiners/Results	
43	20-Jun-16	Marking/Courts of Examiners/Results/Courts of First Appeal	
44	27-Jun-16	Courts of First Appeal/Academic Appeals	← Statutory (Trinity) Term ends Friday 1 July 2016
45 to 52	04 Jul 2016 - 22 Aug 2016	Postgraduate dissertations/theses/Research 1-8	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. ← Ends Friday 26 August 2016

## Details of Junior Freshman Courses

**Module Title:** 1MEMS1 Introduction to Manufacturing

**Code:** ME1M01

**Level:** Junior Freshman

**Credits:** 5

**Lecturer(s):** Prof. Rocco Lupoi ([Lupoir@tcd.ie](mailto:Lupoir@tcd.ie))

**Semester:** 2

<http://www.tcd.ie/mecheng/engman/assets/pdf/JFBScHandbook15-16.pdf>

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**Module Title:** 1MEMS4 Introduction to Computing

**Code:** ME1M04

**Level:** Junior Freshman

**Credits:** 5

**Lecturer(s):** Prof. Kevin Kelly ([kevin.kelly@tcd.ie](mailto:kevin.kelly@tcd.ie))  
Mr. Michael Cullinan ([cullinmf@tcd.ie](mailto:cullinmf@tcd.ie))

**Semester:** 1

<http://www.tcd.ie/mecheng/engman/assets/pdf/JFBScHandbook15-16.pdf>

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**Module Title:** ST1004 Introduction to Management Science

**Code:** ST1004

**Level:** Junior Freshman

**Credits:** 10

**Lecturer(s):** Prof. Arthur Hughes  
Prof. Mary Sharp

**Semester:** 1 & 2

<http://www.tcd.ie/mecheng/engman/assets/pdf/JFBScHandbook15-16.pdf>

<https://www.scss.tcd.ie/undergraduate/msiss/jf/#ST1004>

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**Module Title:** 1E1 Engineering Mathematics I  
**Code:** MA1E01  
**Level:** Junior Freshman  
**Credits:** 5  
**Lecturer(s):** Prof. Andrei Parnachev ([parnachev@maths.tcd.ie](mailto:parnachev@maths.tcd.ie))  
**Semester:** 1

<https://www.tcd.ie/Engineering/undergraduate/baiyear1/modules/1E1.pdf>

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**Module Title:** 1E2 Engineering Mathematics II  
**Code:** MA1E02  
**Level:** Junior Freshman  
**Credits:** 5  
**Lecturer(s):** Assistant Prof. Manuela Kulaxizi ([manuela@maths.tcd.ie](mailto:manuela@maths.tcd.ie))  
**Semester:** 2

<https://www.tcd.ie/Engineering/undergraduate/baiyear1/modules/1E2.pdf>

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**Module Title:** 1E4 Physics  
**Code:** PY1E04  
**Level:** Junior Freshman  
**Credits:** 5  
**Lecturer(s):** Prof. Shane Bergin ([berginsd@tcd.ie](mailto:berginsd@tcd.ie))  
Prof. Hongzhou Zhang ([hongzhou.zhang@tcd.ie](mailto:hongzhou.zhang@tcd.ie))  
**Semester:** 1

<https://www.tcd.ie/Engineering/undergraduate/baiyear1/modules/1E4.pdf>

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**Module Title:** 1E5 Chemistry  
**Code:** CH1E05  
**Level:** Junior Freshman  
**Credits:** 5  
**Lecturer(s):** Prof. Michael Bridge ([mbridge@tcd.ie](mailto:mbridge@tcd.ie))  
Prof. Paula Colavita ([colavitp@tcd.ie](mailto:colavitp@tcd.ie))  
**Semester:** 1

<https://www.tcd.ie/Engineering/undergraduate/baiyear1/modules/1E5.pdf>

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**Module Title:** 1E6 Electrical Engineering  
**Code:** EE1E06  
**Level:** Junior Freshman  
**Credits:** 5  
**Lecturer(s):** Prof. Frank Boland ([fboland@tcd.ie](mailto:fboland@tcd.ie))  
**Semester:** 2

<https://www.tcd.ie/Engineering/undergraduate/baiyear1/modules/1E6.pdf>

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**Module Title:** 1E7 Mechanics  
**Code:** MA1E07  
**Level:** Junior Freshman  
**Credits:** 5  
**Lecturer(s):** Professor Henry Rice ([hrice@tcd.ie](mailto:hrice@tcd.ie)) – Overall Coordinator  
Professor Dermot O'Dwyer ([dwodwyer@tcd.ie](mailto:dwodwyer@tcd.ie))  
**Semester:** 2

<https://www.tcd.ie/Engineering/undergraduate/baiyear1/modules/1E7.pdf>

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**Module Title:** 1E10 Engineering Design Project II  
**Code:** MA1E10  
**Level:** Junior Freshman  
**Credits:** 10  
**Lecturer(s):** Professor Gareth Bennett ([gareth.bennett@tcd.ie](mailto:gareth.bennett@tcd.ie))  
**Semester:** 1

<http://www.tcd.ie/Engineering/undergraduate/baiyear1/modules/1E10.pdf>

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# Regulations and Assessment

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## ***College Regulations***

College regulations are set out in the University Calendar, which may be consulted in any College Library, the Enquiries Office, any academic or administrative office or online – [www.tcd.ie/calendar/](http://www.tcd.ie/calendar/). You are expected to be aware of the various regulations - ignorance of the regulations is not a valid reason for failure to comply.

## ***Collaboration, Plagiarism and Individual Work***

Engineering is about co-operation, but also individual effort. The everyday fruits of engineering, such as jet aircraft, suspension bridges, microprocessors or software systems, have been designed and built by teams of hundreds, even thousands, of engineers working together. These engineers exchange ideas and ultimately co-ordinate their efforts to achieve the overall project goal. However, each component of even the largest project is the result of one individual's engineering skill and imagination. If you want to become a successful engineer, you must develop your own ability to analyse problems. This means that, while it is useful to work as a team initially, you must ultimately produce your own work. For example, for a computing exercise, discuss the task with your classmates, swap ideas on how to solve the problem, but at the end of the day, implement your own solution. The examinations will test your ability rather than just your knowledge and the only way to develop your ability for engineering analysis is to complete the laboratory and tutorial exercises yourself.

## ***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.

### ***Attendance, non-satisfactory attendance, course work***

For professional reasons lecture and tutorial attendance in all years is compulsory in the School of Engineering. For more on this, See Part II, Academic Progress Section (25) of the College Calendar <http://www.tcd.ie/calendar/1415-2/part-2-undergraduate-courses-and-other-general-information/general-regulations-and-information/academic-progress/>

All students must fulfil the course requirements of the school or department, as appropriate, with regard to attendance and course work. Students may be deemed non-satisfactory if they miss more than a third of their course of study or fail to submit a third of the required course work in any term. **Therefore, a minimum 75% attendance rate at lectures, Laboratories and Tutorials is required.**

At the end of the teaching term, students who have not satisfied the school or department requirements may be reported as non-satisfactory for that term. Students reported as non-satisfactory for the Michaelmas and Hilary terms of a given year may be refused permission to take their annual examinations and may be required by the Senior Lecturer to repeat their year.

Further details of procedures for reporting a student as non-satisfactory are given on the College website at:

<http://www.tcd.ie/undergraduate-studies/academic-progress/attendance-course-work.php>

## ***Assessment***

The overall result for the year is the weighted average of the individual module results. The weighting is based on the credits associated with each module. Students are obliged to be present and make a serious attempt at all their examinations. You are advised to read the examination regulations on the [School Website](#). Particular attention should be given to the College Regulations concerning medical certificates in the case of missed examinations. Further information is available in [Part II, Academic Progress Section \(35\) of the College Calendar](#) .

Examination timetables are published on your personal TCD portal page some weeks before the examinations take place. It is your responsibility to note these carefully – you will be informed that timetables have been published but you must check them continuously, as examination details may change.

## ***Course Regulations***

### **Assignment deadlines**

Many E&M courses include an element of continuous assessment. Different departments have their own rules on continuous assessment and homework. You should make sure you are familiar with these rules and that you understand them. The Department of Mechanical and Manufacturing Engineering rules are summarised below:

1. The lecturer must notify the students of:
  - the deadline
  - where and how the assignment is to be handed in
  - the penalties for late submission
  - the procedure for granting permission for late submissions.

Otherwise the default rules, as set out below, will apply.

2. The deadline for all continuous assessment work will be 5pm on the day specified.
3. The work must be handed in to the Department Secretary who will stamp it with the date and time and record the submission in a log. The submission must be clearly labelled and must show the student's name, the assignment title, the course number, and the lecturer's name.
4. Penalties for late submission are as follows: material submitted late will be marked down 20% of the mark that would otherwise have been awarded for each day (or

part thereof) that it is late. Work submitted after 5pm of the fifth day after the deadline will receive a mark of zero.

5. Extensions are normally granted if you can present a good reason for not being able to submit on time. If you need an extension, you should speak to your tutor, not your lecturer. Lecturers will normally grant an extension following a letter from a tutor. Keep in mind that valid reasons are those that could not have been foreseen.
6. Sometimes, where there is a general problem, a Lecturer may award an extension to the entire class. This will be posted (and optionally e-mailed to all students). Penalties will apply as stated above from the revised deadline.

Students are obliged to be present and make a serious attempt at all their examinations. You are advised to read the Examination Regulations (included in this Section 5 of this booklet). Particular attention should be given to the College Regulations concerning medical certificates.

Examination timetables are placed on the notice board some weeks before the examinations take place. It is *your* responsibility to note these carefully.

## **DESCRIPTION OF THE EUROPEAN CREDIT TRANSFER SYSTEM (ECTS)**

**The European Credit Transfer and Accumulation System (ECTS)** is an academic credit system based on the estimated student workload required to achieve the objectives of a module or programme of study. It is designed to enable academic recognition for periods of study, to facilitate student mobility and credit accumulation and transfer. The ECTS is the recommended credit system for higher education in Ireland and across the European Higher Education Area.

The ECTS weighting for a module is a **measure of the student input or workload** required for that module, based on factors such as the number of contact hours, the number and length of written or verbally presented assessment exercises, class preparation and private study time, laboratory classes, examinations, clinical attendance, professional training placements, and so on as appropriate. There is no intrinsic relationship between the credit volume of a module and its level of difficulty.

The European **norm for full-time study over one academic year is 60 credits**.

**ECTS credits are awarded to a student only upon successful completion of the module year.** Progression from one year to the next is determined by the module regulations. Students who fail a year of their module will not obtain credit for that year even if they have passed certain component modules. Exceptions to this rule are one-year and part-year visiting students, who are awarded credit for individual modules successfully completed.

## EXAMINATION RULES

### FRESHMAN AND JUNIOR SOPHISTER

A full set of Examination Rules can be found on the School of Engineering website:  
[http://www.tcd.ie/Engineering/undergraduate/pdf/ExaminationRules\\_1415.pdf](http://www.tcd.ie/Engineering/undergraduate/pdf/ExaminationRules_1415.pdf)

The full set of overall grades is set out below;

<i>Description</i>	<i>Grade</i>	<i>Criterion</i>
First Class Honors	<b>I</b>	mark greater than or equal to 70%
Second Class Honors, First Division	<b>II.1</b>	mark greater than or equal to 60% and less than 70%
Second Class Honors, Second Division	<b>II.2</b>	mark greater than or equal to 50% and less than 60%
Third Class Honors	<b>III</b>	mark greater than or equal to 40% and less than 50%
Fail	<b>F</b>	the candidate has failed to satisfy the criteria listed above
Exclude	<b>EX</b>	the candidate has not made a serious attempt at the examinations <u>or</u> the candidate has not passed the year within eighteen months from that date on which they first became eligible <u>or</u> the candidate has at least one unexplained absence
Deferred	<b>D</b>	the candidate was absent with permission due to medical or other grounds and the result is incomplete
ERASMUS Awaiting Result	<b>ER</b>	Applies to Erasmus / International Exchange students
Result Withheld	<b>RW</b>	it may be necessary for academic or administrative reasons to withhold a result (e.g. unpaid fees or fines)
Withdrawn	<b>WD</b>	the candidate has withdrawn from the course
Repeat year	<b>R</b>	the candidates is given permission to repeat the year IN FULL (applies at SUPPLEMENTAL examinations ONLY)



Pass	<b>P</b>	the candidate may rise to the next year of the degree programme (applies at SUPPLEMENTAL examinations ONLY)
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After the Court of Examiners' meeting, ANNUAL and SUPPLEMENTAL examination results are published anonymously in student number order.

### Individual module results

All individual module results are published anonymously by student number on the College notice boards, on the local School of Engineering website - <http://www.tcd.ie/Engineering/Results/> (students will need their College username and password) and on the College's Examinations Office website - <http://www.tcd.ie/Examinations/Results/>

Where a mark is not reported for a module the following codes apply where appropriate:

<b>f</b>	=	mark is less than 25%;
<b>a</b>	=	absent with permission/explained absence – may take a SUPPLEMENTAL examination;
<b>A</b>	=	absent without permission or explanation – <b>automatic exclusion</b> ;
<b>mc</b>	=	medical certificate supplied to and accepted by the Senior Lecturer;
<b>cr</b>	=	credit for subject e.g. candidate is exempt on the basis of their performance in the Foundation Scholarship examination;
<b>gw</b>	=	grade withheld (e.g. unpaid fees or fines).
<b>p</b>	=	credit for subject passed on previous occasion.

### Repeating the year

Candidates must repeat the year IN FULL which includes all continuous assessment requirements and laboratory experiments.

### Publication of Results

Examination results are published on the Department Notice board in Parsons Building. The examination results of candidates are published on the notice board in order of the candidates' student numbers. Candidates' names are not listed. Anyone seeking a candidates' result must have their student number. Tutors can also be contacted regarding your examination results.

## **Re-checking/Re-marking of Examination Scripts**

Extract from [Part II, Academic Progress Section \(52\) of the College Calendar](#):

- (i) All students have a right to discuss their examination and assessment performance with the appropriate members of staff as arranged for by the director of teaching and learning (undergraduate) or the head of department as appropriate. This right is basic to the educational process.*
- (ii) Students are entitled to view their scripts when discussing their examinations and assessment performance.*
- (iii) Students' examination performance cannot be discussed with them until after the publication of the examination results.*
- (iv) To obtain access to the breakdown of results, a student or his/her tutor should make a request to the director of teaching and learning (undergraduate), course co-ordinator or appropriate member of staff.*
- (v) Examination scripts are retained by schools and departments for thirteen months from the date of the meeting of the court of examiners which moderates the marks in question and may not be available for consultation after this time period.*

### **“52 Re-check/re-mark of examination scripts**

*(i) Having received information about their results and having discussed these and their performance with the director of teaching and learning (undergraduate) or the head of department and/or the appropriate staff, students may ask that their results be reconsidered if they have reason to believe:*

- (a) that the grade is incorrect because of an error in calculation of results;*
  - (b) that the examination paper specific to the student's course contained questions on subjects which were not part of the course prescribed for the examination; or*
  - (c) that bias was shown by an examiner in marking the script.*
- (ii) In the case of (a) above, the request should be made through the student's tutor to the director of teaching and learning (undergraduate) or course co-ordinator as appropriate.*
- (iii) In the case of (b) and/or (c) above, the request should be made through the student's tutor to the Senior Lecturer. In submitting such a case for reconsideration of results, students should state under which of (b) and/or (c) the request is being made. (Details of the procedures relating to the re-check/re-mark of examination scripts*

are available on the College website  
at <https://www.tcd.ie/academicregistry/exams/results/recheck/>)

(iv) Once an examination result has been published it cannot be amended without the permission of the Senior Lecturer.

(v) Requests for re-check or re-mark should be made as soon as possible after discussion of results and performance and no later than twelve months from the date of the meeting of the court of examiners which moderated the marks in question.

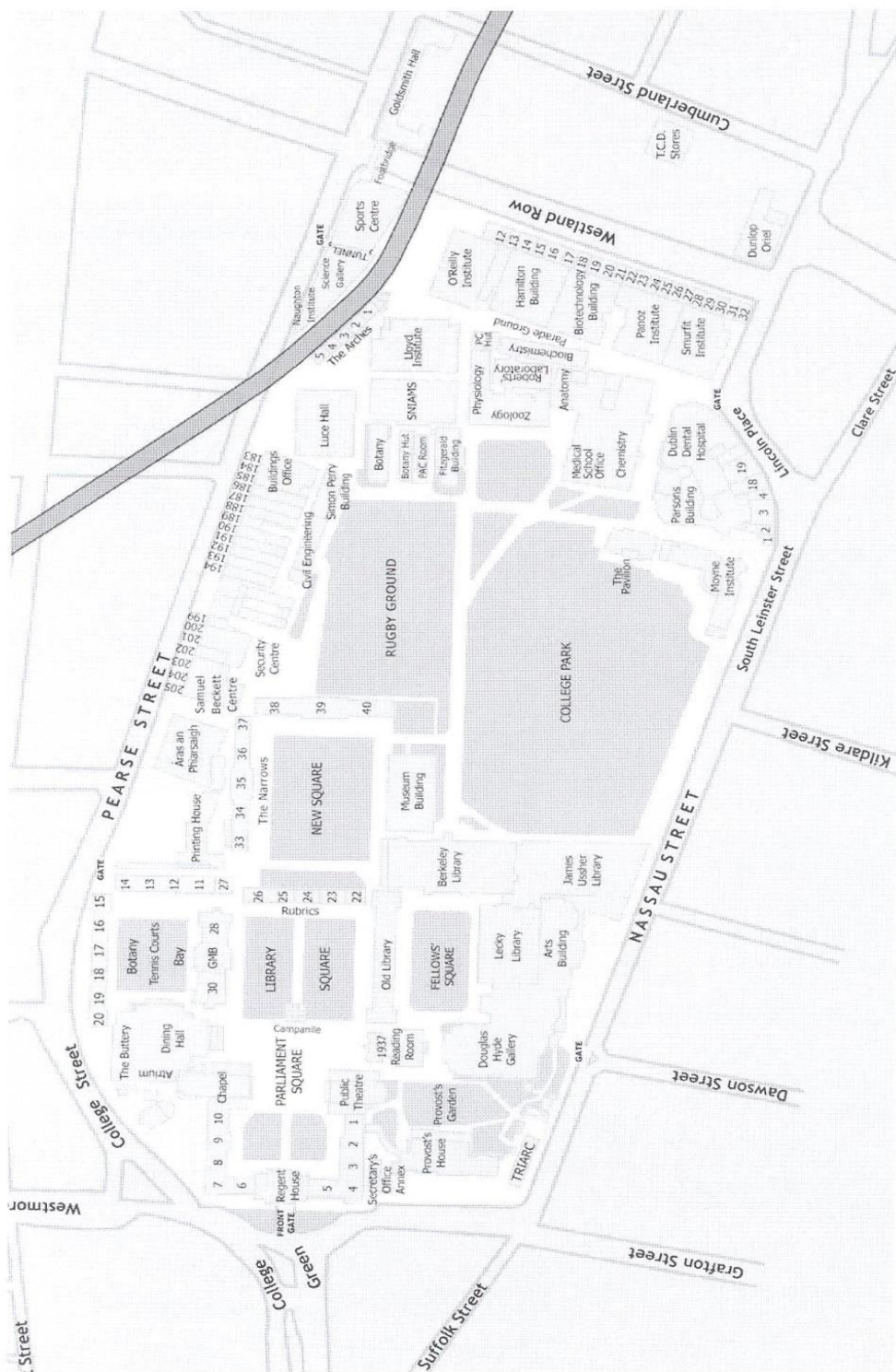
(vi) Any student who makes a request for re-check or re-mark that could have implications for their degree result is advised not to proceed with degree conferral until the outcome of the request has been confirmed”.

## **Appeals**

Extract from [Part II, Academic Progress Section \(53\) of the College Calendar](#):

”53 A student may appeal a decision of the court of examiners relating to academic progress to a Court of First Appeal. (Details of procedures relating to Courts of First Appeal are available on the College website at <https://www.tcd.ie/undergraduate-studies/academic-progress/appeals.php> and from relevant course offices) Appeals should be made in writing by a student’s tutor or, if the tutor is unwilling or unable to act, by the Senior Tutor or his/her nominee who shall be another tutor. Students may request a representative of the Students’ Union to represent them as an alternative to their tutor or the Senior Tutor. Tutors or Students’ Union representatives who are filing an appeal must use the procedural form, must indicate the precise grounds upon which the appeal is being made (see Academic Appeals Committee §54 below for applicable grounds) and what the appeal is attempting to achieve on the student’s behalf, e.g. permission to repeat the year, special examination etc. The attention of those bringing an appeal is directed to the assistance offered by the school or course administrators and the undergraduate studies staff in Trinity Teaching and Learning in helping them to complete their records, provide copies of medical certificates and other appropriate documents. The Court of First Appeal shall not hear requests for re-checking/re-marking of examinations and assessments which should be processed according to the regulations as set out in §52 above. The recommendations of the Court of First Appeal are forwarded to the Senior Lecturer who may approve or reject or vary any such recommendations. As a consequence recommendations of a Court of First Appeal are not binding and shall not have a formal effect unless and until they have been considered and approved by the Senior Lecturer. In particular, pursuant to §37, the Senior Lecturer will approve a recommendation that a student be permitted to sit a special examination, outside of the annual and supplemental sessions, as set out in the Almanack, only in exceptional circumstances. (This power is exercised by the Senior Lecturer by delegation from the University

*Council, and the principles of delegation set out in Part 3 of the Introduction Chapter of the 2010 Statutes shall apply.) A student may appeal such decisions of the Senior Lecturer, whether approved or rejected or varied, to the Academic Appeals Committee.*



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# Heath & Safety

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## **Safety in the Department**

Dear Student,

The Department of Mechanical & Manufacturing Engineering operates 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 the departmental facilities. Thus safety is also your personal responsibility and it is your duty to work in a safe manner when within the department. By adopting safe practices you ensure both your own safety and the safety of others.

Please read the Safety Document on the Departmental website:  
<http://www.mme.tcd.ie/> and comply with the instructions given within. Failure to behave in a safe manner may result in your being refused the use of departmental facilities.

Mr. Gerry Byrne

Departmental Safety Officer

## **Student Disability Services**

If you have a disability or a specific learning disability (such as dyslexia) you may want to register with Student Disability Services.

Do you know what supports are available to you in College if you have a disability or a specific learning disability? Further information on our services can be found at [www.tcd.ie/disability](http://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](mailto:disab@tcd.ie).

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### **College Health Service, House No 47**

Trinity College, Dublin 2.

Tel. 01 8968555 / 8961556 / 8961591

The Clinical staff in the College Health Service:

Medical Director:

Assistant Medical Director/Psychiatrist:

Doctors:

Dr. David McGrath

Dr. Niamh Farrelly

Dr. Niamh Murphy

Dr. Mary Sheridan

Dr. Aisling Waters

Dr. Colette Horgan

Ms. Karita Cullen

Physiotherapist:

Health Promotion Officer:

Ms. Martina Mullin



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# Student Supports

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## ***Academic Concerns: Sources of Assistance***

- Other students in the class;
- Course lecturer;
- Engineering class representatives;
- your personal tutor (or any other tutor if you cannot find yours), or the Senior Tutor;
- Head of Department,
- Head of School or Director of Teaching and Learning (Undergraduate), Assistant Prof. Ciaran Simms (csimms@tcd.ie);
- Students' Union Education Officer ([education@tcdsu.org](mailto:education@tcdsu.org))

## ***Student Learning Development***

Student Learning Development is here to help you develop and master the academic skills to succeed at Trinity. The supports available include:

- Free workshops throughout the year on a variety of topics for students from all departments.
- A Blackboard module featuring a range of resources, including podcasts and interactive workshops that provide academic support to students. Topics include:
- Time management
- Presentation skills (incl poster presentations)
- Procrastination and Concentration
- Effective study skills
- Writing skills
- Exam skills
- Individual consultations – meet with a learning advisor to discuss your study issues

For more information please visit <http://student-learning.tcd.ie>

## **Other supports for learning in College include:**

- The Maths Help Room, which provides informal help from Trinity students. It is located in the Maths Seminar Room, 2nd Floor, 18 Westland Row and is open on Monday-Friday, from 1-2pm

- The Programming Support Centre is available to all computer science and engineering students taking programming courses. See [www.scss.tcd.ie/misc/psc](http://www.scss.tcd.ie/misc/psc)
- Peer Learning is available in several of the modern language departments. It involves working with other students to get the most from your course to improve performance. E-mail us for further information: [student.learning@tcd.ie](mailto:student.learning@tcd.ie)

### **S2S Peer Support**

S2S Peer Support is all about one student listening to another student and providing information and assistance. Peer Supporters are available for any student in the College and are there for anything you might want to talk through with them. You don't need to be in distress or crisis to talk to a Peer Supporter, but they can help with the larger problems as well as the smaller things. Our volunteers are highly trained, confidential and professional, but they're also fellow students who can offer some genuine empathy and a friendly ear.

If anything is on your mind and you'd like to share it with a good listener then a Peer Supporter would love to help. You can email us directly at [student2student@tcd.ie](mailto:student2student@tcd.ie) or request a meet-up with a Peer Supporter by calling 01 896 2438 or filling out an online form.

S2S website: <http://student2student.tcd.ie>

## ***Tutors***

The tutors responsible for engineering students are:

<b><i>TUTOR</i></b>	<b><i>OFFICE LOCATION</i></b>	<b><i>EXTN.</i></b>
Kevin Kelly	Mechanical Engineering, Parsons Building	1465
Bruce Murphy	Mechanical Engineering, Parsons Building	8503
David Taylor	Mechanical Engineering, Parsons Building	1703
Henry Rice	Mechanical Engineering, Parsons Building ( <b>Erasmus only</b> )	1996
Trevor Orr	Civil Engineering, Museum Building	1204
Bidisha Ghosh	Civil Engineering, Museum Building	3646
Brian Caulfield	Civil Engineering, Museum Building	2534
Aonghus McNabola	Civil Engineering, Museum Building	3837
Laurence Gill	Civil Engineering, Museum Building	1047
Dermot O'Dwyer	Civil Engineering, Museum Building	2532
Alan O'Connor	Civil Engineering, Museum Building	1822
Liwen Xiao	Civil Engineering, Museum Building	3741
Sarah McCormack	Civil Engineering, Museum Building	3321
Francesco Pilla	Civil Engineering, Museum Building	1638
Naomi Harte	Electronic and Electrical Engineering, Printing House	1861
Edmund Lalor	Electronic and Electrical Engineering, Printing House	1743
<i>Senior Tutor</i>		
Dr Claire Laudet	Senior Tutor's Office, House 27	2004