Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Department of Mechanical, Manufacturing & Biomedical Engineering

MSc in Mechanical Engineering & Zero-Carbon Technology Handbook (2026-2027)



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Welcome Message from the Course Director

Welcome to the MSc in Mechanical Engineering & Zero-Carbon Technology at Trinity College Dublin, and congratulations on securing your place on the programme. You have been selected from a highly competitive international applicant pool to join a talented and diverse group of students. Our aim is to equip you with the knowledge, skills, and experience needed to become a future leader in engineering. During your studies, you will engage with some of the most important challenges facing industry and society, from meeting future energy needs to developing more sustainable approaches to design and manufacturing.

Engineering involves more than calculations and technical problem-solving. It requires an understanding of how engineering challenges affect society and how the solutions we develop can shape its future. At a time of rapid technological, environmental, and industrial change, the need for highly qualified, creative, and innovative engineers has never been greater. You are part of the Department of Mechanical, Manufacturing and Biomedical Engineering, a vibrant academic community within Ireland's leading university. Our professors are recognised leaders in their fields, conducting internationally relevant research, collaborating with industry, and translating innovative ideas into practical applications.

This MSc programme draws on expertise in Advanced Materials and Manufacturing, Design, Fluid Mechanics, Noise and Vibration, Energy, Heat Transfer, Turbomachinery, Robotics, Instrumentation, and Nanotechnology. This breadth will allow you to expand your knowledge, explore new interests, and contribute to engineering solutions with real-world impact.

This handbook provides important information about modules, academic regulations, key contacts, and available sources of guidance and support. I encourage you to consult it regularly.

On behalf of our academic and professional staff, I wish you every success in the year ahead. We look forward to supporting you as you develop your expertise and contribute to a more sustainable future.

Professor Amir Pakdel
Course Director
MSc in Mechanical Engineering & Zero-Carbon Technology

Overview

The MSc in Mechanical Engineering is designed to provide a flexible route to a Masters qualification for students who have completed a Bachelor's degree. It addresses advanced topics over a wide range of Mechanical and Manufacturing Engineering subjects. Within the MSc, there are many module options to choose from and an excellent opportunity to engage in topical research with leading research groups within the School of Engineering, as an important part of this programme is a research project.

The MSc course consists of 90 ECTS Credits, of which 40 ECTS are dedicated to research: the research project (30 ECTS) & research programme definition (10 ECTS). The remaining 50 ECTS are for the taught modules. Modules typically count for 5 ECTS each (except for some which count for 10 ECTS).
A postgraduate diploma may be awarded where a student has completed 60 ECTS of modules but has not completed a research project.

Explanation of ECTS Weighting

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. 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.
1 credit represents 20-25 hours estimated student input, so a 10-credit module will be designed to require 200-250 hours of student input including class contact time, assessments and examinations. ECTS credits are awarded to a student only upon successful completion of the programme year. Students who fail a module will not obtain credit for that module even if they have passed certain components.
http://ec.europa.eu/education/resources/european-credit-transfer-accumulation-system_en

Assessment

1) The pass mark for all elements is 50%. The overall mark for the programme is the credit-weighted average of the mark awarded for each module. To pass the taught modules students must achieve an overall average mark on taught modules of at least 50% and pass taught modules amounting to 50 ECTS credits. In the event a student has failed up to 10 ECTS of taught modules it may be possible to "pass by compensation". To "pass by compensation" a student must (i) achieve an overall credit-weighted average mark of at least 50% AND (ii) achieve a pass mark in taught modules carrying a minimum of 40 credits AND (iii) obtain a module mark of at least 40% in any remaining module(s).
2) Students who have failed the taught modules (by virtue of not achieving the overall average mark of 50% and/or not passing taught modules amounting to 50 ECTS credits) may be reassessed within the academic year with the agreement of the course coordinator. Reassessment is only available for failed modules amounting to 20 ECTS where at most 15 ECTS of modules were failed in any one semester and none of these modules could have been compensated according to regulations in 1) above.
3) Different modalities of assessment are permitted in the reassessment session as determined by the programme. The same compensation regulations apply to reassessed modules as outlined in 1) above.
4) To qualify for the award of the MSc degree, students must submit a dissertation and achieve a pass mark in both the Dissertation module and the taught modules.
5) Those students who achieve an overall average mark of 70% or above in both the individual modules AND the research dissertation will be awarded a Distinction.
6) A distinction cannot be awarded if a candidate has failed any module during the course.
7) Candidates who do not proceed to the dissertation, or who have failed their dissertation but have passed all required modules, may, on the recommendation of the examiners, be awarded a Postgraduate Diploma in Mechanical Engineering, provided that they have passed individual modules amounting to 60 credits.
8) Students who fail more than 20 ECTS of the taught modules on the first sitting, where at most 15 ECTS occur in one semester, will not be eligible to submit the project report. Hence, they will not be eligible for the award of the MSc but may be eligible for the exit award of the P.Grad.Dip. upon completion of 60 ECTS.

9) In the event a student has failed up to 20 ECTS of taught modules it may be possible to "pass by compensation". To "pass by compensation" a student must (i) achieve an overall credit-weighted average mark of at least 50% AND (ii) achieve a pass mark in taught modules carrying a minimum of 40 ECTS AND (iii) obtain a module mark of at least 40% in any remaining module(s).

10) Both the examinations and the dissertation are subject to external moderation.

Lecture and Tutorial Timetable

Note: Attendance at lectures, laboratories and tutorials is compulsory. Failure to attend all taught elements may result in you being prevented from taking your examinations. The only valid reasons for being absent are medical problems and significant personal/family

The timetable for lectures is provided online. The schedules for tutorial and labs will be circulated at the start of each semester.

The most up to date timetable is always online at:
https://www.tcd.ie/engineering/current-students/undergraduate/engineering/year-five-mai/

You are advised to check the online timetable regularly as changes occur from time to time.

*Your Timetable will appear on your portal once you have registered for your modules.

Academic Year Structure

The University academic year structure, including the start and finish dates for the teaching semesters, examination periods etc, is available using the link below:
https://www.tcd.ie/calendar/academic-year-structure/

Useful Contacts

From time to time, you may find it both useful and, in some cases necessary to contact members of the teaching staff on the degree programme. When contact is made by email, messages should be polite and succinct, clearly indicating the nature of the query within both the subject title and body of the text.

Always consider the following when you have a query:

1. Is speaking with the member of staff the best way of resolving the issue?
2. Have you investigated any other methods of addressing the problem using your own initiative?
3. Is it a matter that might best be first addressed to someone other than this particular member of staff, e.g. class representative, college tutor, course coordinator/director, course administrator?

Please use the following general guidelines for staff contact:

- **Module Coordinator** (email addresses listed in module summaries): Contact the module coordinator directly for queries relating to a specific module. e.g. any issues with content and assessment of Module, blackboard/lecture material, attendance at practical's/tutorials, etc.
- **MSc Course Director:** Prof. Amir Pakdel (pakdela@tcd.ie). Any academic queries, e.g. those that could not be resolved by contacting the module coordinators. If you need in-person consultation, you should make an appointment via email several days in advance. Please respect the time allocated for consultations.
- **Zero-Carbon Technology Strand Co-Ordinator:** Prof. Charles Stuart (stuartch@tcd.ie) can be contacted for any queries related to the Zero-Carbon Technology strand.
- **Course Administrator:** Ms Melissa Caffrey (caffrem@tcd.ie) for all general queries and those relating to administrative matters such as fees, examination results.
- **Postgraduate Student Support Officer:** Martin McAndrew (postgrad.support@tcd.ie) acts as your College Tutor, there to help you with any personal problems that might affect your studies, such as financial or medical problems. More on Postgraduate Advisory Service: https://www.tcd.ie/seniortutor/students/postgraduate/

Academic Contacts:

Staff name (alphabetical order)	Email
Prof. Gareth Bennett	bennettg@tcd.ie
Prof. Michael Gibbons	michael.gibbons@tcd.ie
Prof. Kevin Kelly	kekelly@tcd.ie
Prof. John Kennedy	john.kennedy@tcd.ie
Prof. Rocco Lupoi	lupoir@tcd.ie
Prof. Conor Mc Ginn	c.mcginn@tcd.ie
Prof. Craig Meskell	cmeskell@tcd.ie
Prof. Garret O'Donnell	odonnege@tcd.ie
Prof. Kevin O'Kelly	okellyk@tcd.ie
Prof. Seamus O'Shaughnessy	oshaugse@tcd.ie
Prof. Amir Pakdel	pakdela@tcd.ie
Prof. Tim Persoons	persoont@tcd.ie
Prof. Anthony Robinson	arobins@tcd.ie
Prof. Amitesh Roy	royam@tcd.ie
Prof. Ciaran Simms	csimms@tcd.ie
Prof. Gursahib Singh Bhatia	bhatiag@tcd.ie
Prof. Stephen Spence	spences@tcd.ie
Prof. Charles Stuart	stuartch@tcd.ie
Prof. Daniel Trimble	dtrimble@tcd.ie
Prof. Shuo Yin	yins@tcd.ie
Prof. Siyuan Zhan	zhans@tcd.ie

Personal References

Members of staff are usually willing to act as referees. It is an important courtesy that each individual is asked before giving his/her name as a referee. Please allow adequate time for references to be prepared (1-2 weeks). Please provide a CV and personal statement and details of the reference required in your initial email to avoid unnecessary correspondence.

Thesis Guidelines

The research thesis is a major part of your MSc degree. It counts for almost half of the credits for the course so this should be reflected in the amount of time you spend on it during the year. It should be your own work, conducted independently, but you will be guided by a supervisor.

Submission Format and Deadline

Your thesis should be submitted in electronic copy through Blackboard in PDF format. These should be submitted no later than 12 noon on 3rd August 2027.

Thesis Outline

Detailed instructions on report writing are provided in the Research Methods in Mechanical Engineering Module. In general, reports should be divided into the following standard sections:

1. Title Page
2. Abstract (Summary)
3. Acknowledgements
4. Table of Contents Page
5. List of Tables
6. List of Figures
7. Introduction
8. Literature Review
9. Methods
10. Results
11. Discussion
12. References
13. Appendices

Occasionally the nature of the material may require a different format. Students should consult supervisors before deviating from the standard arrangement.

Length and Style

- There is a strict **60-page** limit on the length of the thesis excluding appendices and front matter, you will lose marks if the thesis is judged to be unnecessarily long and repetitive.
- You can write in the passive style (e.g. "some experiments were conducted…") or in a more direct style (e.g. "I conducted some experiments…" or "We conducted some experiments…"). The more direct style is recommended especially for those for whom English is not your first language, as writing in the passive style can cause confusion.
- The past tense should be used when describing the work you did, in the Abstract, Methods, Results and Discussion sections.
- You will lose marks for poor English (e.g. spelling mistakes) so check everything carefully before submission. It's a good idea to ask someone else to read your thesis, even someone who does not understand the science will notice the mistakes in the English.

Title Page

This page should include:

- Concise title (not more than 15 words). Should be informative. Abbreviations should be avoided
- Author's name
- Supervisors name
- Affiliation
- Date
- Degree for which thesis is being submitted

See below for an example title page.

Abstract

The abstract (maximum one A4 sheet) should be clearly written and readily comprehensible to a broad readership. The abstract should provide a concise summary of the objectives, methodology, key results, and major conclusions of the study. It should be written in complete sentences, without explicit subheadings.

Table of Contents

- This should include chapter headings and details of sections within chapters, with page numbers.

List of Tables

- This should include details of all tables with page numbers.

List of Figures

- This should include details of all figures with page numbers.

Acknowledgements

- Acknowledge all those who provided support to you and your project (e.g., organisation, funding body, supervisor, technicians).
- Work contributed by others to your project must be acknowledged. Such a situation would arise if, for example, stored samples generated by another researcher were used in the project or if the nature of specific experiments to be included in the project dictated that they must be carried out by an experienced researcher. The titles and names of such contributors and the precise nature of their contribution must be included in this section in a clear statement of acknowledgement. An omission of such an acknowledgement, where required, is plagiarism. Plagiarism, as outlined elsewhere in this Handbook, is regarded by College as a serious offence and the student concerned will be penalised.
- All the foregoing are 'preliminaries' and should not be numbered with the main body of the text. Instead, give preliminaries Roman numerals (i, ii etc.). The pages of the main text should be numbered using Arabic numerals (1, 2, etc).

Introduction

- This should introduce the background to the problem, giving a broad description of the general field and current problems in this field.

Literature Review

- A summary of the background literature is necessary. You should aim to produce a detailed overview of the current knowledge of the problem under study and outline a

theoretical framework or rationale as a basis for your study. It is important to critically analyse existing literature on your research project.

- A clear statement of the problem and the immediate background as well as the aims of the project and its relevance should be given.

Objectives

- A numbered list of statements giving the specific objectives of your research. This should be informed by the previous work in the field as described in the Literature Review. It should cover all the tasks which you subsequently carried out, e.g. "conduct experiments to measure…"; "develop a computer model of…". Later on in the Discussion you will tell us whether these objectives were achieved or not.

Methods

- A clear account of all the methods used, both experimental and theoretical (including computer modelling and statistical analyses). The test here is that someone reading this section should be able to reproduce all your work based on the information given here. It may be useful to clarify here the contribution of others to the practical work (see Acknowledgements).
- This section will provide a comprehensive explanation of the procedures used including details of the following:

Results

- A description and explanation of results using narrative, tables and figures as appropriate. It should deal with facts and findings only, without interpretation (which will be included in the Discussion).
- The reader must be led carefully through the results step by step. You should carefully consider the order of the figures to be presented, which may or may not follow the order the experiments were originally performed. You should consider which figures need to be presented. The objective is not to include all your figures to simply show how much work you have done, but to include those figures which are pertinent to the work. The main observations must be brought out; it is NOT sufficient to present figures or tables and then leave the reader to work out the conclusions (see later sections: *Figures* and *Tables*).

- *Presentation of Statistics.* If statistical analysis of your data is appropriate the results (means, SD's, parameters of statistical significance) should be included here.

Discussion

- This section should deal with discussion and interpretation of the data obtained and should include a critical assessment of the data in light of previous findings, speculation on the meaning of the results obtained, analysis of your objectives in the context of the findings, and an assessment of the limitations of the study. This should be concluded with a **Conclusions** section which briefly lists the things which can be concluded from your work, and a **Further Research** section giving suggests for research activities to continue on from where you finished.
- This section often presents students with the most problems. In particular, it is often difficult to decide what should go in the Discussion and what should go in the Results. A good guideline is 'When in doubt, put it in the Discussion', and leave the presentation of results as uncluttered as possible.
- The Discussion will include the following:
    - Interpretation of the significance of your results.
    - A comparison of results (not forgetting control values) with those in the literature.
    - A discussion of your results in context of the relevant literature.
    - A critical discussion of possible sources of error in the results. *Critical* means not only listing the sources of error but also saying how important they are likely to be.

This list is by no means exhaustive and the categories will often overlap, but it should be helpful at the planning stage.

References

- References (e.g. journal papers, books) should be cited in the text and listed in a References section near the end.
- You may use any standardized referencing system (e.g. the Harvard system) provided you are consistent throughout the thesis. If you have a large number of references it

is advisable to use software such as EndNote or the References tab within Microsoft Word to keep track of your citations.

- Any statement or any results which you have taken from another source must be accompanied by a citation, otherwise you will be guilty of plagiarism: this will be taken very seriously.

Appendices

- Use appendices for information which you feel should be in your thesis but which doesn't need to be in the main body of the work. For example if you have a lot of raw data which is quite repetitive you might include one or two examples in the Results and put the rest in an appendix. Another example would be the code of some software which you have written.

Figures and Tables

- These are a great deal of trouble to prepare and it is a pity to waste them for the sake of a little attention to detail. All Figures and Tables must be numbered and have a descriptive legend, so that each can be understood without reference to the text. It may be desirable to include the important observation or conclusion in the legend. All units of measurement and statistical parameters must be identified. Axes on graphs and columns in tables must be labelled so that it is clear what each point or value represents.
- Try to keep graphs uncluttered. Use conventional symbols of open and filled squares, triangles or circles. Shading aids clarity in histograms. Tables should be as simple as possible. Try not to put all your results in one huge Table because it is daunting for the reader.
- The most common fault is failure to integrate Figures and Tables with the text. The reader must be guided and the main points clearly brought out — even at the cost of some repetition of material between legend and text.
- All figures and tables must be cited in the text (e.g. "The results are shown in figure 6").

Type, Spacing and Margins

The type must be fully formed as in the output of a laser or ink jet printer. The output of dot matrix printers is not acceptable. The type must be black and not less than 11 point in the main text, 10 point in figures and tables. Line-spacing should be at one and a half.

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 https://libguides.tcd.ie/academic-integrity. 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 https://libguides.tcd.ie/academic-integrity

Plagiarism detection software such as 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.

The Supervisor and the Student

An outline of the role of the supervisor has been provided by the TCD Graduate Studies Office: The relationship between the supervisor and research student is a critical factor in determining the quality of the postgraduate experience. Best practice leads to a relationship that may be described as mentoring on the part of the supervisor and learning on the part of the student. For a successful collaboration between student and supervisor, both parties have to recognize their own separate responsibilities. Due to the diverse demands of different disciplines, it is not possible to legislate in detail across the whole academic range of college for the practices that supervisors and students should follow. However certain general principles should be clearly understood by all involved in postgraduate education. These are set out below.

Responsibilities of the supervisor

A postgraduate student is admitted by the Dean of Graduate Studies on the recommendation of the Director of Postgraduate Teaching and Learning and course coordinator all of whom sign to this effect. The course coordinator will assign each student to a supervisor for the duration of their project.

The supervisor has a reactive and proactive role. They must be reasonably accessible to the student for academic help and advice during progress of the research and particularly during preparation of the research thesis; they have a duty to be in touch with progress of the research student's work and inform the student of what is expected of them. In addition the supervisor should help the student in the latter's dealings with College officialdom and should be aware of College regulations as they affect postgraduates. Many of the cases of poor relationships between research students and their supervisors stem from a differing interpretation of what constitutes reasonable access. Supervisors need to recognize that the lack of adequate analysis of work submitted to them, undue delay in its return, and refusal to make, or inability to keep, appointments, damage the relationship with their students. Such inadequacies of supervision cannot be excused on the grounds of pressure of other work.

Responsibilities of the student

A research student must keep in contact with their supervisor and advise the latter on progress of research. They should submit written work or perform other academic exercises (for example contribute to seminars) when requested by supervisor. When seeking the academic services of a supervisor, a research student must acknowledge that the supervisor is likely to have other commitments and cannot be expected to drop everything to attend to their needs. This is particularly important during periods of preparation of research thesis; supervisor and student should devise a timetable, which can be adhered to on both sides.

Additional points

1. Contact your supervisor early in the writing process (2-3 months before submission) to discuss table of contents and structure and overall layout.
2. Do not expect your supervisor to read incomplete or multiple drafts of your work

Coursework: Policy on Submission and Marking

During the year you will be required to submit continuous assessment (CA) work of various kinds, such as assignments, lab reports, etc. Individual lectures will set deadlines for these submissions. The general policy in Trinity College is that reports on laboratory exercises should be submitted within 2 weeks of carrying out the lab. All CA work should be marked and returned to the student, with feedback as appropriate, within 2 weeks of submission.

University Rules and Regulations

Attendance requirements

Please note that attendance at lectures, tutorials and laboratory sessions is mandatory as is the submission of all work subject to continuous assessment. Should students fail to attend lectures, tutorial or laboratory sessions without permission from the module coordinator, they may be issued with a Non-Satisfactory form and asked to explain their poor attendance or performance. Students who do not provide a satisfactory explanation can be prevented from sitting the annual examinations or have their marks penalized.

Generative AI

Aligned with the Gen AI Hub - Centre for Academic Practice, Trinity Teaching & Learning | Trinity College Dublin, the use of GenAI is permitted unless otherwise stated. Where the output of GenAI is used to inform a student's document or work output, this usage should be acknowledged and appropriately cited, as per Library guidelines on acknowledging and referencing GenAI. From an academic integrity perspective, if a student generates content from a GenAI tool and submits it as his/her/their own work, it is considered plagiarism, which is defined as academic misconduct in accordance with College Academic Integrity Policy.

Examinations, Assessment and Results

The pass mark for all elements is 50%. The overall mark for the course is the credit-weighted average of the mark awarded for each module. To qualify for the award of the M.Sc. in Mechanical degree, students must achieve an overall average mark of at least 50%, achieve a pass mark in the dissertation AND either (i) pass individual modules amounting to 60 credits OR (ii) pass individual modules amounting to at least 50 credits and have a mark of not less than 40% in the failed modules.

Those students who achieve an overall average mark of 70% or above in both the individual modules (excluding Research Methods module) AND the research dissertation will be awarded a Distinction. A distinction cannot be awarded if a candidate has failed any module during the course. Candidates who do not proceed to the dissertation, or who have failed their dissertation but have passed all required modules, may, on the recommendation of the

examiners, be awarded a Postgraduate Diploma in Mechanical Engineering, provided that they have passed individual modules amounting to 60 credits. Candidates may be required to present their research thesis to the external examiner during a viva voce examination. Both the examinations and the dissertation are subject to external moderation.

Regulations for re-checking/re-marking

All graduate students have the right to discuss their examination, assessment and dissertation performance with the appropriate academic members of staff as arranged for by the Course Director.

Graduate students are entitled to view their scripts when discussing their performance.

Graduate students' examination performance cannot be discussed with them until after the publication of examination results.

To obtain access to the breakdown of their results, graduate students should make a request to their Course Director.

Having received information about their examination, assessment and dissertation results and having discussed these and their performance with the appropriate academic staff members, graduate students may request that their results be reconsidered, within four weeks of their publication, if they have reason to believe:

a. that the grade is incorrect because of an error in calculation of results or
b. that the examination paper specific to the graduate 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, assessment or dissertation.

In the cases (a) – (c) above, the request will be made in the first instance to the Course Director, who will discuss the request with the relevant parties and attempt to find a resolution; in the case of (a) above, the decision of the Director is final.

In the case of (b) and (c) above, if the Course Director does not grant the request, the student may ask that the relevant School committee consider their request. In submitting such a case for reconsideration of results, graduate students must state under which of (b) and/or (c) the request is being made. If the student is dissatisfied with the way in which his/her request was handled, he/she may write to the Dean of Graduate Studies clearly stating under which of (b) and/or (c) the request is being made. Once an examination result has been published, it cannot be amended without the permission of the Dean of Graduate Studies. The decision of the Dean of Graduate Studies is final.

Appeals process

Where a graduate student has failed a module, coursework component or dissertation and is dissatisfied with how the material was examined or feels that there are mitigating circumstances, he/she may appeal, in writing, to the Course Director. The reasons for the appeal must be clearly stated and supported where necessary by documentary evidence.

If the Programme Director refuses to grant the request, the student may make an appeal to the School's Director of Postgraduate Teaching and Learning who will, after determining if there are legitimate grounds for appeal, then convene the **School of Engineering Postgraduate Appeals Committee**. If this committee determines that there are valid grounds for the appeal to proceed, it will hear the appeal at a notifiable scheduled time. The student must attend and is entitled to present her/his own case and to be accompanied by an advisor from the Postgraduate Advisory Service or a representative from the Graduate Students' Union.

If the Postgraduate Appeals Committee refuses to grant the appeal or the student is not satisfied with the outcome of the appeal process, he or she may appeal the decision of the School in writing to the **Dean of Graduate Studies**, as outlined in Part III of the Calendar.

The onus is on the student to initiate the appeal, in the first instance to the Course Director, within **four weeks of notification** of the results being published. He/she is advised to liaise with the Postgraduate Student Support Officer (Senior Tutor) and/or the Graduate Students' Union in preparing the appeal.

The School of Engineering Postgraduate Committee is asked to note and approve this proposal for onward consideration by the School of Engineering Executive Committee.

Commendation for Projects

The Course Committee, in consultation with the External Examiner, may award a commendation for projects of exceptional merit. Should you have any queries regarding regulations and guidelines that apply to postgraduate students at Trinity, please consult the Graduate Studies website www.tcd.ie/Graduate_Studies/ or the University Calendar www.tcd.ie/calendar/. This Calendar contains all information concerning graduate studies in Trinity College, Dublin.

Aligned with the College Statement on Artificial Intelligence and Generative AI in Teaching, Learning, Assessment & Research (2024), the use of GenAI is permitted unless otherwise stated. Where the output of GenAI is used to inform a student's document or work output, this usage should be acknowledged and appropriately cited, as per Library guidelines on acknowledging and referencing GenAI. From an academic integrity perspective, if a student generates content from a GenAI tool and submits it as his/her/their own work, it is considered plagiarism, which is defined as academic misconduct in accordance with College Academic Integrity Policy.

Guidelines on Grades for Essays and Examination Answers

Grading Descriptors

The following Descriptors are given as a guide to the qualities that assessors are seeking in relation to the grades usually awarded. A grade is the anticipated degree class based on consistent performance at the level indicated by an individual answer. In addition to the criteria listed examiners will also give credit for evidence of critical discussion of facts or evidence.

Mark Range	Criteria
90-100	IDEAL ANSWER; showing insight and originality and wide knowledge. Logical, accurate and concise presentation. Evidence of reading and thought beyond course content. Contains particularly apt examples. Links materials from lectures, practicals and seminars where appropriate.
80-89	OUTSTANDING ANSWER; falls short of the 'ideal' answer either on aspects of presentation or on evidence of reading and thought beyond the course. Examples, layout and details are all sound.
70-79	MAINLY OUTSTANDING ANSWER; falls short on presentation and reading or thought beyond the course, but retains insight and originality typical of first class work.
65-69	COMPREHENSIVE ANSWER; good understanding of concepts supported by broad knowledge of subject. Notable for synthesis of information rather than originality. Sometimes with evidence of outside reading. Mostly accurate and logical with appropriate examples. Occasionally a lapse in detail.
60-64	LESS COMPREHENSIVE ANSWER; mostly confined to good recall of coursework. Some synthesis of information or ideas. Accurate and logical within a limited scope. Some lapses in detail tolerated.

55-59	SOUND BUT INCOMPLETE ANSWER / WEAK ANSWER; based on coursework alone but suffers from a significant omission, error or misunderstanding. Usually lacks synthesis of information or ideas. Mainly logical and accurate within its limited scope and with lapses in detail. May suffer from significant omissions, errors and misunderstandings, but still with understanding of main concepts and showing sound knowledge
50-54	INCOMPLETE / VERYWEAK ANSWER; limited understanding and knowledge of subject. Serious omissions, errors and misunderstandings, so that answer is no more than adequate.
45-49	MARGINAL FAIL; inadequate answer, with no substance or understanding, but with a vague knowledge relevant to the question.
40-44	CLEAR FAILURE; some attempt made to write something relevant to the question. Errors serious but not absurd. Could also be a sound answer to the misinterpretation of a question.
0-39	UTTER FAILURE; with little hint of knowledge. Errors serious and absurd. Could also be a trivial response to the misinterpretation of a question.

Guidelines on Marking for Project/Dissertation Assessment

Mark Range	Criteria
90-100	Exceptional project report showing broad understanding of the project area and exceptional knowledge of the relevant literature. Exemplary presentation and analysis of results, logical organisation and ability to critically evaluate and discuss results coupled with insight and novelty/originality. Overall an exemplary project report of publishable quality (e.g. peer reviewed scientific journal/patent application).
80-89	An excellent project report clearly showing evidence of wide reading far above that of an average student, with excellent presentation and in-depth analysis of results. Clearly demonstrates an ability to critically evaluate and discuss research findings in the context of relevant literature. Obvious demonstration of insight and novelty/originality. An excellently executed report overall of publishable quality (e.g. short peer reviewed conference paper such as IEEE) with very minor shortcomings in some aspects.
70-79	A very good project report showing evidence of wide reading, with clear presentation and thorough analysis of results and an ability to critically evaluate and discuss research findings in the context of relevant literature. Clear indication of some insight and novelty/originality. A very competent and well-presented report overall but falling short of excellence in some aspects. Sufficient quality and breadth of work similar to the requirements for an abstract at an international scientific conference.
60-69	A good project report which shows a reasonably good understanding of the problem and some knowledge of the relevant literature. Mostly sound presentation and analysis of results but with occasional lapses. Some relevant interpretation and critical evaluation of results, though somewhat limited in scope. General standard of presentation and organisation adequate to good.

50-59	An acceptable project report which shows some understanding of the problem but limited knowledge and appreciation of the relevant literature. Presentation, analysis and interpretation of the results at a basic level and showing little or no novelty/originality or critical evaluation. Insufficient attention to organisation and presentation of the report.
40-49	An unsatisfactory project report showing only limited understanding of the problem and superficial knowledge of the relevant literature. Results presented in a confused or inappropriate manner and incomplete or erroneous analysis. Discussion and interpretation of result severely limited, including some basic misapprehensions, and lacking any novelty/originality or critical evaluation. General standard of presentation poor.
20-39	An unsatisfactory project containing substantial errors and omissions. Very limited understanding, or in some cases misunderstanding of the problem and very restricted and superficial appreciation of the relevant literature. Very poor, confused and, in some cases, incomplete presentation of the results and limited analysis of the results including some serious errors. Severely limited discussion and interpretation of the results revealing little or no ability to relate experimental results to the existing literature. Very poor overall standard of presentation.
0-19	A very poor project report containing every conceivable error and fault. Showing virtually no understanding or appreciation of the problem and of the literature pertaining to it. Chaotic presentation of results, and in some cases incompletely presented and virtually non-existent or inappropriate or plainly wrong analysis. Discussion and interpretation seriously confused or wholly erroneous revealing basic misapprehensions.

Commencements

All registered postgraduate students expecting to be conferred with a higher degree in the current academic year, are annually invited by email, to make application to the Proctors' Office. The invitation includes provision of all the information necessary to make application. Candidates are advised that closing dates are very strictly adhered to, and late applicants will not be admitted to the selected ceremony; however, they may be admitted to the next available commencement session. Commencement ceremony will take place in April 2022 for the MSc Mechanical Engineering. Further information about the application process is available at www.tcd.ie/academicregistry/graduation/

Recommended Reading Material

All recommended reading material will be listed in the module descriptors. Normally, text books for modules are available in the library.

Student Representation

Student – Staff Committee

The student – staff committee was established as a formal channel of communication between students, researchers and staff and to enhance the experience for researchers and students in the Centre. It is an opportunity for students to express their views and opinions on matters such as facilities in TBSI, resources, teaching etc.

Members of the committee will be elected at the beginning of each academic year for a term of one full academic year and will consist of two staff members, two student members and a secretary. The secretary, will be responsible for convening meetings, drawing up agendas and acting as meeting secretary. You should liaise with the committee members if you would like an issue raised at the Committee.

The Class Rep

A class rep should be appointed by all the class members at the beginning of the academic year. The role of the class rep is to primarily act as a contact point for the class in urgent matters.

Academically, the main tasks of class rep are as follows:

- to create a contact list for class members in case there is a need to contact the whole class or individual class members
- to act as a first contact point for the class should course director need to urgently contact the whole class
- to relay any comments from class to course director and vice versa
- organise social events for the class, although normally shared by all in the class.

College Information and Student Support

Academic Registry

To contact Academic Registry all enquiries should be directed through one of the 4 channels:

- Log an enquiry via ASK AR on the my.tcd.ie portal
- Via email at 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

Postgraduate Advisory Service

The Postgraduate Advisory Service is a unique and confidential service available to **all** registered postgraduate students at Trinity College. It offers a comprehensive range of academic, pastoral, and professional supports dedicated to enhancing your student experience.

If you require specific advice, or would like to arrange a confidential meeting with the dedicated Student Support Officer, you can make an appointment by phoning 353 1 896 1417, or by e-mail at pgsupp@tcd.ie

Graduate Students' Union/Aontas na N-iarchéimithe

Trinity's Graduate Students' Union (GSU) established in 1973 is the representative body for all postgraduate students in Trinity College Dublin, the University of Dublin. The two sabbatical officers of the GSU work full-time and represent postgraduate students on all major committees including Board, Council, Student Life, Graduate Studies committee and Research Committee. The Union's executive committee which includes representatives from all faculties convene on a monthly basis and more often when required. The objective of the Union is to effectively represent postgraduate students within the University, advocate on behalf of Union members on issues that impact your education internally and nationally; and to protect the interests of our union members during their studies. Activities of the Union

include: providing social and recreational facilities for postgraduate students; monitoring and developing the study and recreational facilities of the 1937 Postgraduate Reading Room; providing a Graduate common room for postgraduate students (located in house 7) and to provide and manage lockers for students in the 1937 Reading Room (rental is organised through the front office in house 6).

The GSU produces an academic and peer reviewed journal on an annual basis, the Trinity Postgraduate Review (http://trinitypostgradrev.wixsite.com/tcd-ie), and a literary magazine, College Green (www.collegegreenmagazine.com/). It also produces a postgraduate handbook for students with information on supports and services available to postgraduate students.

The GSU President works in the area of policy and strategy. The GSU Vice-President acts as the Welfare and Education Officer for postgraduates in TCD and provides confidential one-to-one advice, advocacy and support in areas such as student supervisor relationships and financial hardship. The GSU Communications Officer informs you on a weekly basis of information, postgrad events and updates from the university and the wider metropolitan community through the medium of a digital newsletter titled Postgrad News.

The GSU website www.tcdgsu.ie provides the latest updates from the Union, information on elections, campaigns and connections to the Union's social media platforms. Students can arrange meetings with the sabbatical officers via emailing either the GSU President Shane Collins at president@tcdgsu.ie or the GSU Vice-President Madhav Bhargav at vicepresident@tcdgsu.ie or by contacting the office landline at (01) 896 1169.

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. 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. Login will 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.

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 (http://student2student.tcd.ie)

E-mail: student2student@tcd.ie, Phone: + 353 1 896 2438

Safety

The University has a duty to ensure, so far as is reasonably practicable, the health, safety, and welfare of its students. In turn, students are expected to actively co-operate in maintaining a safe environment by:

- Taking reasonable care of their own health and safety, as well as that of others who may be affected by their actions or omissions.
- Following all instructions, procedures, and guidelines related to safe practices.
- Refraining from intentionally or recklessly interfering with or misusing any equipment, materials, or systems provided in the interest of health, safety, and welfare.

Failure to comply with these responsibilities or with any established safety procedures may result in disciplinary action by the College.

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

https://www.tcd.ie/mecheng/safety/safety-statement/

Please read the MMBE Safety Statement and complete the online Safety Statement Acknowledgement Form before you begin your experimental work or if you plan to use the PC labs in Parsons out-of-hours. Out-of-hours access to the PC labs in Parsons is 5pm – 9pm on weekdays and 9am – 5pm at weekends and holidays. The use of the SafeZone app is mandatory when working out-of-hours in MMBE https://www.tcd.ie/safetyoffice/safezone/

Experimental work is not permitted out-of-hours.

For information on Risk Assessments and other safety related items, please refer to:

- MMBE Safety https://www.tcd.ie/mecheng/safety/
  Or
- University Safety Office https://www.tcd.ie/safetyoffice/

MMBE Safety Officer
Mr. Gordon O'Brien
Tel: 01 8964908
gordon.obrien@tcd.ie

MMBE Chief Technical Officer
Mr. Mark Jordan
Tel: 01 8961557
Jordanm7@tcd.ie

In the event of an incident requiring emergency assistance, contact TCD Security 01 896199

If you are working in Trinity Centre for Bioengineering Laboratories in Trinity Biomedical Sciences Institute, please contact Dr. Simon Carroll, Senior Technical Officer Specialist 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.

Careers Advisory Service

Postgraduate study opens the doors to many opportunities, but the market is competitive and you will need to differentiate yourself clearly from other candidates.

Resources:

The Careers Advisory Service (CAS) provides a wide range of resources and services to help you make and implement informed choices about your future career direction.

The Careers Information Centre at 7-9 South Leinster Street contains a range of free, career-related booklets and employer materials for you to take away. Online, the resources section of the website (www.tcd.ie/Careers/resources) provides useful information on a range of topics from career choice and planning, to working abroad, taking a year out and everything in between.

Services:

Individual appointments to meet a Careers Consultant are also available. They work with you to identify how best to approach the next step in your career. They can also review your CV/LinkedIn profile and provide coaching to ensure maximum impact at interview.

Job opportunities from employers currently recruiting Trinity graduates as well as postgraduate courses and funding are available online.

CAS also offers a wide range of seminars; workshops and employer presentations, including postgrad specific events, throughout the year that will help you explore where your postgraduate study can take you.

My Career:

An online service that you can use to:

- Apply for opportunities which match your preferences - vacancies including research options
- Search opportunities- postgraduate courses and funding
- View and book onto employer and CAS events

- Submit your career queries to the CAS team
- Book an appointment with your Careers Consultant: Simply login to MyCareer using your Trinity username and password and personalise your profile.

Careers Advisory Service

Trinity College Dublin, 7-9 South Leinster Street, Dublin 2

01 896 1705/1721 | Submit a career query through MyCareer

MyCareer: mycareerconnect.tcd.ie

TCD.Careers.Service

TCDCareers

www.tcd.ie/Careers/students/postgraduate/

@TCDCareers

tinyurl.com/LinkedIn-TCD-Connecting

Opening Hours

During term: 9.30am - 5.00pm, Monday - Friday

Out of Term: 9.30am - 12.30pm & 2.15 - 5.00pm, Monday - Friday

Campus Maps

For a large and printable campus maps, please visit: https://www.tcd.ie/Maps/

