

Part IA guide

The Engineering Tripos comprises a two-year Part I followed by a two-year Part II. All CUED undergraduates study the same subjects for their first five terms. There is an element of choice in the sixth term, and in Part II students specialise in a chosen engineering area.

NB. Throughout this guide 'week' refers to Thursday to Wednesday of the normal teaching term.

Table of contents

- [Aims & objectives](#)
- [Part IA structure](#)
- [Part IA coursework & labs overview](#)
- [Coursework credit](#)
- [Lecture & lab start times & lateness penalties](#)
- [Part I labs & coursework: general info](#)
- [Lab safety instructions](#)
- [Rearranging coursework & allowances: general rules](#)
- [Guidelines for Examiners and Assessors: Part IB supplement](#)
- [Progression through the Engineering Tripos](#)
- [Distinguishing between cooperation & cheating](#)
- [Online surveys](#)
- [Best lecturer award](#)
- [Fast feedback facility](#)
- [Inclusive teaching](#)
- [Departmental rules](#)
- [Access to the Department](#)
- [Dyson Centre](#)
- [Course material on Moodle](#)

Aims & objectives

Teaching aims

The aims of Part I of the Engineering Tripos are to encourage and enable students to:

- develop a sound understanding of the fundamentals of engineering science across a broad range of engineering disciplines;
- acquire basic skills in modelling and analysis and the ability to solve straightforward technical problems;
- acquire basic design skills and the ability to create simple engineering designs using a multi-disciplinary approach;
- develop an awareness of the responsibilities of engineers in economic, social and environmental matters;
- develop practical skills and the ability to conduct and evaluate experiments;
- learn to create, use and evaluate computer software;
- develop communication skills, both oral and written;
- develop cooperative skills through group and teamwork activities;
- acquire basic study skills and develop independence of learning;
- develop a responsible and professional attitude.

General objectives

At the end of the Part I course students should:

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- by means of lecture courses, associated examples papers and appropriate reading have learnt the fundamental principles of engineering science;
- by means of laboratory courses have witnessed phenomena associated with the material in the lecture courses, have gained an understanding of experimental methods and have experience of experimental techniques;
- by means of practical computing courses be able to create and evaluate software;
- by means of projects have been introduced to research and design;
- by means of a course in exposition and subsequent practice have developed powers of presentation both orally and in writing;
- by means of lecture courses, occasional lectures, essay assignments and industrial experience have gained an introduction to manufacturing, management and the economic, environmental and social responsibilities of engineers.

The progress of each undergraduate is measured by Tripos examinations and by assessed coursework. Tripos classes and details of marks are notified to undergraduates through CamSIS or by their Colleges, and progress with coursework is communicated by staff marking individual coursework activities.

Achievement of the general objectives is dependent on an undergraduate reaching detailed objectives set for individual activities of the course. These are listed in the syllabuses for each series of lectures and the instruction sheets for coursework.

Part IA structure

Lectures

Lectures are timetabled throughout the Michaelmas and Lent terms, and the first four weeks of the Easter term.

All students take the same four 3-hour examinations at the end of their first year. These papers and the lecture courses examined in them are:

| | | |
|---------|--------------------------------------|--|
| Paper 1 | Mechanical engineering | Mechanics (16 lectures) Mechanical vibrations (12 lectures) Thermofluid mechanics (24 lectures) |
| Paper 2 | Structures & materials | Structural mechanics (24 lectures) Materials (20 lectures) |
| Paper 3 | Electrical & information engineering | Physical principles of electronics, electromagnetics (12 lectures) Linear circuits and devices, AC power (22 lectures) Digital circuits and information processing (16 lectures) |
| Paper 4 | Mathematical methods | Mathematics (40 or 32 lectures)* Computing (2 lectures + coursework lectures) |

*Note on the fast & standard mathematics courses

The Michaelmas term mathematics course is given in two different versions: a standard course (three lectures per week) and a fast course (two lectures per week). Both will cover the same syllabus, and will use the same examples papers.

The **fast course** is aimed primarily at those who have taken maths and further maths at A-level and have good mathematical fluency, so they may already have seen some of this material. The **standard course** aims to cater for those with less prior training in mathematics, especially those with only single mathematics A-level. The lecturers will endeavour to keep in step, so that it will be possible to swap courses for particular broad topics. Attend the first lecture which most suits your background, and the lecturer will explain the arrangements in more detail.

Engineering applications (8 lectures)

These sessions illustrate the applications of engineering principles in the widest possible context over a broad range of technologies.

Examples papers

One examples paper is issued for about every four lectures, on Wednesdays according to the termly schedule. The material is followed up in examples classes (see lecture timetable) and College supervisions. Solutions (cribs) of each examples paper will be made available to students online after the corresponding examples class.

Coursework

Important engineering skills are developed in a wide variety of coursework exercises. The Michaelmas term includes induction activities which lay foundations for the rest of the course.

Part IA coursework & labs overview

Introduction

Outlines of the Part IA coursework activities and experiments are given below, together with the number of timetabled sessions allocated to them.

Also see the [general information about Part I labs & coursework](#).

Lego Mindstorms

Part IA coursework starts with an intensive, hands-on activity using [Lego Mindstorms](#). For the first week, students work in groups of three to design and build a simple electro-mechanical device, based around a number of sensors and actuators. The exercise is open-ended and fun, giving an immediate awareness of the integrated nature of real-world engineering, involving software, mechanical and electrical components, teamwork, and communication skills.

There are ten timetabled hours in the [lab & coursework schedule](#), but students may wish to allow extra time during the evenings and weekend. Team allocations will be posted on Moodle on Wednesday 6 October 2016. The Lego lab handout (issued at the introductory lecture) includes instructions on how to sign on to Moodle. All students should do this, and browse the project documentation on the Moodle site, during the afternoon of Wednesday 6 October 2016. All groups present their devices, with prizes for the best systems, demonstrated to the whole year at the end of week 2.

Drawing

Each timetabled drawing session, both morning and afternoon, begins with a lecture to outline the material that will be covered in the following practical class. The Michaelmas term exercises introduce the basic principles of projection theory. The interpretation and making of mechanical drawings, including CAD, are practised in the Lent and Easter terms.

Students are expected to attend both the lecture and the following practical class. Work set for each drawing class **must** be handed in at the end of each session. Students should avoid commitment to other afternoon activities on the one day a fortnight when they are scheduled to attend drawing classes (see the lab & coursework schedules). Supervisions should be timetabled to avoid afternoon lab sessions.

Most of the equipment required for the practical drawing sessions is provided. See [additional course costs](#) for details of the drawing equipment that students are expected to have.

Exposition

The communication of technical information is developed through the [exposition course](#) which aims to improve students' presentation, discussion and writing skills. Students' lab reports on the **statics experiment** are critically reviewed during these sessions. In addition, each student is required to give a short (10-15 minute) talk on technical material and to take part in a debate on a current technical topic, or other appropriate activity. The topics chosen are at the discretion of the group leader. The good practice initiated during the exposition exercises is developed throughout the course, whenever students write laboratory or project reports, essays or give oral presentations on their project work.

Engineer in society, principles of design, product design project and dimensional analysis

Eight lectures are given on the role of the [engineer in society](#), in which the wider issues that influence technical decision making are discussed. Students' assimilation of the lecture material and their reading around the subject is assessed through a report. There are also eight lectures on the principles of design, assessed through the [product design project](#). The principles of [dimensional analysis](#) are covered in four lectures at the start of term followed by two experiments (and questions may be set on this topic in the Part IA examinations).

NB. Attendance at **all** these lectures is necessary for students to complete their coursework satisfactorily.

Computing and microprocessors

The Michaelmas Term part of the course involves 12 activities for self-study, and each activity has exercises to be completed. All the material and documentation for the course will be made available online, through the course Moodle page. Support sessions in the DPO will run on Mondays and Tuesdays of week 2, 3, 5 and 6. Students can sign-up to these sessions from the course Moodle page (or simply go the DPO during the sessions and see if there is an available slot). The exercises for *at least* the first six activities must be completed by week 4 and will be checked at a sign-up *assessment* session, and the remainder must be completed by the second *assessment* sign-up session in week 7. In each assessment session, all students are required to book (as a lab group) a slot for a 15-minute long session. Students will be asked to demonstrate their code and answer a few questions to make sure they understand the course content.

The Lent Term activity is a group exercise, with students working in pairs. Each student takes charge of writing part of a software solution. A modular design and unit testing are required to ensure that the two parts work together correctly.

Microprocessors and learning how to program them are introduced through a series of labs in the Easter term.

The computing course is examined in Paper 4 Mathematical Methods. An open-ended long vacation exercise (the "**Mars lander**") aims to keep computing skills fresh for Part IB.

Structural design project

Creative thinking and synthesis are fostered in design projects. All students undertake a Structural Design Project. Working in pairs, they design, manufacture and test a metal structure to carry given loads at minimum cost. The structures are tested to destruction in ascending order of 'cost'. After the test, recommendations are made on how the design might be improved. Assessment is by the quality of the tested product, the quality of the drawings and the individual reports.

Integrated electrical project

In the integrated electrical project, students work in pairs to design, build and test an AM radio. This project brings

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together design software and working with electrical components to integrate many topics in the lecture courses on linear circuits and electronics. The project begins with a timetabled lecture for all students towards the end of Michaelmas term, and has a concentrated period of laboratory activity in the Lent Term.

Product design exercise

The students' assimilation of the material covered in the eight lectures on the principles of design is tested through a product design project where they are asked to design a device to meet a specified need. In addition to a brief report, students present their solutions in person to an audience which includes a designer from industry.

Outline of coursework activities

| Term | Coursework | No. of timetabled 2-hour (morning) lab sessions + afternoons |
|-----------------------------|--|--|
| Michaelmas | Lego Mindstorms Dimensional analysis Statics experiment Exposition Computing | 5 (2 or 3 in afternoons) 2 1 8 Support sessions mornings and afternoons in weeks 2, 3, 5 and 6. Assessment sign-up sessions in weeks 4 and 7. |
| Christmas Vacation | Report on 'the engineer in society' | |
| Michaelmas, Lent and Easter | Drawing Structural design project Integrated electrical project | 9 + 9 afternoons 5 + 5 afternoons 5 + 4 afternoons |
| Lent and Easter | Microprocessors Computing Experiments | 2 + 1 afternoon 2 + 2 afternoons 13 |
| Easter Vacation | Product design project | |

Outline of experiments (Lent/Easter terms)

Students undertake 13 experiments during the Lent term and the first three weeks of the Easter term. The topics on which these experiments are based are listed below. Some experiments are 'short'. These straightforward experiments aim to give students experience of important techniques and phenomena. Each task is completed and signed up in the two-hour morning period assigned to it. 'Long' experiments normally require two hours in the laboratory to complete the investigation and record the results, with an extra two hours on writing-up and drawing conclusions, and a subsequent sign-up session.

| Associated paper | Experiment number and title | Long or short |
|------------------|---|---------------|
| Mechanics: | 1. Kinematics of plane mechanism 7. Vibration 8. Energy and power | L S S |

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| Associated paper | Experiment number and title | Long or short |
|-----------------------------|--|------------------|
| Thermofluids: | 2. Gas engine 9. Turbocharger 10. Inviscid fluid flow | L S S |
| Structures: | 3. Elastic beams | L |
| Materials: | 4. Plasticity and fracture 11. Non-destructive testing | L S |
| Electrical and information: | 12. Iron-cored transformer 13. AC Power 14. Combinational logic 15. Sequential logic, memory and counting | S S S S |

Coursework credit

Coursework in Engineering includes lab work and projects, plus a number of other marked assignments.

Coursework for standard credit at Part I

In Parts IA and IB, all coursework is for standard credit, which means that once students achieve a satisfactory standard in the various groups of activities the associated marks are capped at the qualifying level. Students who fail to reach the qualifying marks, or who fail to attend or hand in certain coursework, will have the shortfall deducted from their total in the Tripos. The marks available and qualifying marks are shown in the Faculty Board [Part IA](#) and [Part IB](#) coursework credit notices.

The standard credit scheme has been designed to encourage students to attend coursework sessions punctually, to complete each laboratory-based activity within an appropriate time to a satisfactory standard so as to achieve the main objectives of the activity, and to submit any written work for marking within a specified timescale.

The system aims to help students by discouraging them from spending an inordinately long time on any one coursework activity, at the expense of other aspects of their study. It also encourages innovation in design work, as there is not an undue loss of marks for a less successful outcome.

The majority of students are expected to gain the qualifying standard.

Lecture & lab start times & lateness penalties

Lectures

Lectures run from five minutes past the hour to five minutes to the hour, with the following exception:

Part IA and IB lectures in LT0 will start promptly at 9am and 10am. Lecturers will start lecturing at precisely 9am in order to fit in the full 50 minutes of teaching that they need to deliver:

- First lecture 09.00-09.50 (non-standard)
 - Second lecture 10.00-10.50 (non-standard)
 - Third lecture 11.05-11.55
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- Fourth lecture 12.05-12.55

This schedule allows LT0 to empty and refill at 11am. Students should leave LT0 by the doors at the front and on the North side at the back (leading to the roadway), allowing students to enter from the foyer and the courtyard.

Lab times and lateness penalties

Morning laboratory/coursework sessions begin at 5 minutes past the hour.

Afternoon activities start on the hour.

1. Students arriving up to 10 minutes late will be penalised 1 mark for late arrival, but may be excluded entirely at the discretion of the demonstrator in charge.
2. Students arriving more than 10 minutes late, will be automatically excluded from any laboratory experiment. For other coursework activities (e.g. computing, drawing, IEP etc.) the student may, at the discretion of the demonstrator, be allowed to take part in the activity, but will be penalised for late arrival.
3. Students who arrive late due to circumstances beyond their control should first try to rearrange the coursework activity. If this is not possible they may make an application for recovery of marks using the standard allowance procedure.

Part I labs & coursework: general info

General guidelines

- **Charts** in the individual lab expand the lab/coursework schedule into particular activities. Check beforehand that you know the location of your next exercise.
- **Penalties** apply for students arriving late to labs.
- Be aware of the procedure for [rearranging missed coursework sessions](#).
- Read the [note on safety](#) and observe any special instructions on safety in individual labs. You should bring safety glasses, issued at the start of the year, for all materials labs (in the Lent and Easter terms) and for the structural design course practical work. You may be excluded from labs if you do not bring them.
- Students are advised to read the handout for the experiment online before attending the lab session. Printed copies of the handout will be available at the start of each lab.
- For much of the Part I lab work in the Lent and Easter terms you will need to use your **lab book** for recording data and taking notes during laboratory experiments. You are encouraged to word-process lab reports, which should be glued or stapled into your lab book.
- Experiments are classified as either **short** or **long**:
 - A short experiment occupies on 2-hour period and is completed and signed-up in that time.
 - A long experiment occupies 2 hours in the lab and is then written up as a report.
- Any urgent **problems** with an experiment or exercise should be reported to a demonstrator or the lab leader in charge of the laboratory.
- The report for each long lab should be set out in the lab notebook provided at the start of the year. Your report, together with that of your partner, will be **marked** by a demonstrator at a signing session. This must take place within 15 days of the date of the experiment.
- **Signing** sessions should be booked during the blank periods on the lab schedule. Demonstrators will give guidance on the form and content of the report expected for a particular experiment. It is important that you bring your lab notebook with you to each long experiment.
- **Credit** for the satisfactory performance of a short experiment is 2 marks. Credit for a long experiment is on the scale 0-6, with 4 marks for completion of the experiment and minimally acceptable work, 5 marks for satisfactory work and 6 for exceptional work. Late submission of a report incurs a deduction of 1 mark for each week, or part of a week, after the due date.

See the guidance on [lab start times](#) and [allowances](#).

The lab record and long report

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It is essential that you bring your lab notebook with you whenever you are timetabled to perform a long experiment. The notebook should be used to record all the readings, observations and calculations that you make, unless the instruction sheet specifically states otherwise. Do not use loose sheets of paper: these are easily misplaced. Charts and other records should be glued or stapled into your notebook.

Your lab record should start on a new page for each experiment performed. It should follow good professional practice and be correctly headed and dated. When there are several readings to enter, arrange these in tabular form, and make sure that the column headings show the quantity measured and the units used. Decide on how many columns you need and set out the table before you start taking readings. Whenever feasible, plot graphs as the experiment proceeds so that serious divergence from the expected behaviour can be checked there and then. Label the axes of the graphs and, where appropriate, indicate the accuracy of the data points on the graph.

The "[report writing guide](#)" covers all aspects of report writing in the Engineering Tripos. Specific sections are introduced via IA Exposition classes. For experiments and reports in Part I, you are referred in particular to the following sections:

- Report writing in the Engineering Tripos: [long lab records and reports](#)
- Introduction to technical writing: [integrity, record-keeping, plagiarism and referencing](#)

Difficulties with the lab report

If you need advice on a particular aspect of your report or you are otherwise held up on some point, then seek help. You can obtain help from a demonstrator in the laboratory or your supervisor. Do this in good time and you will not be rushed into producing an unsatisfactory report.

Copying the work of others is unacceptable. However, discussing your work with colleagues, supervisors or demonstrators is encouraged and can bring about improvements to the standard of the report you submit. The report itself must be your work, written in your own words. Students who submit the work of others as their own will have their reports referred to the appropriate authorities.

Feedback on labs & experiments

If you have comments about any experiment, please tell us about them using the [fast feedback facility](#). Urgent problems with an experiment should be reported immediately to a demonstrator or senior technician in the lab, or contact the member of staff in charge of the lab. Please be constructive in your comments and suggestions.

Finally please complete the coursework section of the [online survey](#) during the year.

Lab safety instructions

1. No eating, drinking or smoking is allowed in the labs or drawing or computing areas.
2. You should always comply with the safety instructions either issued by a demonstrator or displayed on notices alongside equipment.
3. You should bring your safety glasses to all labs and wear them when needed.
4. Do not put scarves, coats, etc., on the benches or stools; hang them up on the racks provided.
5. Do not put books, cases, etc., on top of electrical equipment; overheating with consequent damage may result.
6. Do not wear loose clothing or scarves near rotating machinery.
7. Do not take leads, components or equipment from other lab locations. All the apparatus you need should be present; if it is not ask a demonstrator.
8. At the conclusion of an experiment leave the apparatus as you found it. Report any faults in the equipment which you use. If all faults are speedily reported you should seldom find faulty equipment.

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9. Observe special instructions on safety which are posted in the individual labs.
 10. Finally, if you run into difficulties, don't waste time, ask a demonstrator.
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Rearranging coursework & allowances: general rules

Introduction

The Faculty Board of Engineering has issued the following guidelines about the circumstances under which coursework activities may be rearranged or allowances granted. The Head of Department delegates all the responsibilities mentioned in this document to the Director of Undergraduate Education. All forms are processed via the [Teaching Office](#).

In Parts IA and IB students' coursework assignments are set by the lab rotas issued by the Teaching Office. In Parts IIA and IIB students are to a great extent responsible for setting their own coursework timetables by signing up for lab experiments etc. associated with the modules they are doing.

Main rules

1. Students should make **all reasonable efforts** to complete any missed exercises at a later date and so must first try and make rearrangements with the lab leader.
2. Applications should be made at the time rearrangement proves not to be possible, and at latest by the end of the relevant term.
3. Any application for an allowance must be made on the [standard form](#). This form must be completed in full by both student and Tutor. The Tutor may be required to submit supporting medical evidence (e.g. if the period affected is over 7 days).
4. Forms should be submitted as soon as it is clear that an allowance may be required. **No forms will be accepted after the deadlines.**
5. A total allowance of more than four weeks coursework will not normally be given, in any year.

Types of allowance

The granting of an allowance implies either:

1. an **extension** of the scheduled period for completion and submission of an activity (applicable to both standard credit and positive credit activities); or
2. the **allocation of a number of marks** for the activity missed, if it proves impossible to rearrange or catch up the activity. For standard credit activities, the mark allocated will normally be the qualifying mark for the activity. For positive credit exercises, any mark allocated will depend upon the student's performance in related assessed activities.

In all cases, the Director of Undergraduate Education will consider the allowance form submitted by the student and Tutor, and decide upon the type and extent of any allowance to be made. These are incorporated in the final coursework marks sent to the Chairmen of Examiners. The Teaching Office will notify the Tutor and the student of the outcome of any application.

Allowances for individual activities are described in more detail for each Part:

- [Parts IA and IB](#)
- [Part IIA](#)
- [Part IIB](#)
- [MET Parts IIA and IIB](#)

Reasons for arranging coursework

Reasons for seeking to rearrange course work fall into one of the following five categories:

Illness

Educationally it is always preferable to rearrange coursework missed through illness, and this should be attempted wherever practicable. If rearrangement is not possible, then students should apply for the appropriate allowance.

'Illness' is defined as any illness, injury or other grave cause which, in the opinion of both the student's tutor and the Director of Undergraduate Education, prevents the student from completing their scheduled coursework activities on time, or in some cases at all.

Compassionate or religious grounds

Students will, wherever practicable, be allowed to rearrange coursework on compassionate or religious grounds (for instance, to enable them to attend a funeral, or because the coursework is scheduled on the day of a religious festival). The student concerned should try to rearrange the coursework in advance. If rearrangement proves impossible, then an application for an allowance may be made with the support of the student's tutor.

Interviews

When applying for jobs, work placements or sponsorship, students may be invited for interview on days that conflict with coursework activities. Students should in the first instance seek to rearrange the interview rather than the coursework. If this proves impossible, then the student should try to rearrange the coursework. Allowances are not normally given for coursework missed through interviews.

Sporting commitments

Coursework may **not** be rearranged to accommodate **College** sporting commitments. Students will, wherever practicable, be allowed to rearrange coursework that conflicts with **University** sporting competitions (i.e. representing the University of Cambridge in a competitive event) but not for training sessions.

NB. Allowances are not normally available if such rearrangement is possible.

Other reasons

If a student wishes to seek to rearrange coursework for any reason not covered by the four categories above, they should discuss the matter with the [Director of Undergraduate Education](#).

How to rearrange coursework

Part I coursework

For Part I coursework (including sign-up sessions) students should identify an appropriate replacement slot in the timetable, in discussion with the appropriate chief technician, and then clear this with the lab leader in charge of the activity.

Contact details of lab technicians are available online: [IA](#), [IB](#).

Part II coursework

For Part II coursework, students should contact the staff member in charge of the coursework activity (e.g. lab/EAA leader or module leader). Wherever possible, arrangements should be made in advance – failure to do so when the need for rearrangement was foreseeable may result in the request being refused. In some cases, it may be

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necessary to apply for an extension to a deadline to allow coursework to be completed.

Guidelines for Examiners and Assessors: Part IB supplement

Character of the examinations

The four papers should be set and marked in accordance with the view that the examination is to be a straightforward test of basic principles. The rubric for papers 1–4 should require candidates to answer **all** questions. Where appropriate a paper should be divided into two or three sections corresponding to the main subject areas examined in the paper. The number of questions in the section should reflect the number of lectures in the corresponding subject areas. The Chairman for Part IA has discretion to decide how the questions should be divided among the sections of each paper.

The Part IA examinations shall each comprise eight straightforward questions carrying 10 marks each, and four searching questions carrying 30 marks each. The straightforward questions should be labeled “short” on the exam paper, and should be set such that a fully correct solution could be obtained by an average candidate within 9 minutes, if that candidate has tackled the associated examples papers during the year. The searching questions should be labeled “long” and should begin with a straightforward part that introduces the topic of the question, with later parts requiring synthesis of knowledge or problem-solving in less familiar circumstances.

Target average

At the setting stage, Examiners should aim for a target average on the written paper of 60-65%. When coursework marks are included the overall average can be expected to increase by c.4%.

Additional information

[Advice on good practice in examining](#)

[Practical information about Part I exams](#)

[Part IA Coursework and Exam Credit notice](#)

[Marking & classing criteria](#)

[Exam data retention policy](#)

[Regulations for the Engineering Tripos](#)

There is no form and conduct notice for Part IA in 2016-17.

Progression through the Engineering Tripos

A summary of the results that students must obtain to continue with the next part of the course is available [at this link](#). Formal and detailed information about progression requirements is contained in [Statutes and Ordinances](#).

Distinguishing between cooperation & cheating

Coursework marks contribute significantly to your overall Tripos mark. Because this work is not carried out under

examination conditions, the distinction between beneficial cooperation and deliberate cheating should be clearly understood.

The following information applies to **all students**. There is also supplementary information for [Part IIB students](#).

Cooperation

It is perfectly acceptable to discuss continuously assessed work with other students, or with demonstrators or supervisors. Such discussions are beneficial and are to be encouraged. Effective use of such discussions can lead to higher marks, always provided that the student has made the main contribution to the work submitted and understands all of it.

Cheating

Cooperation can go too far, however, especially if one student is effectively carried by another or by the demonstrators. For example, while it may well be beneficial for students to discuss a problem in computing, it is unacceptable for two students to submit effectively identical programs. The named author must have made the main contribution to the work submitted and the report must be in his or her own words.

Electronic exchange of lab work is likewise acceptable up to a point. Results obtained jointly in the lab may have only been recorded by one student in a pair, due to time constraints, and it may be more practical to pass these on in electronic format (e.g. for a word-processed report). But analysis of the data, or production of graphs for the write-up, and all written sections of the report **must** be done individually, and may not be exchanged electronically.

Further information about distinguishing between [Plagiarism, cooperation and cheating](#)

Any deliberate attempt to pass off the work of others as being produced by the named author is cheating. Students suspected to have cheated will be reported to the Director of Undergraduate Education, and interviewed by an appropriate member of staff. For each coursework submission found to have been even partially copied, a mark penalty will be imposed and the student's Director of Studies informed. The examiners may be informed and might take further action. Serious cheating will be referred to the University proctors.

Online surveys

Giving feedback on your course

This year's course surveys are available [online](#).

The web-based survey for all years is open until the end of the Easter term. Students are able to update their survey entries at any point while the survey is running. If a question is answered and then, at a later point in the year, the answer is changed, only the later response will count.

To use the survey system from a machine in the DPO either (i) type "survey" at the teaching system prompt, or (ii) click on the "survey" icon on the desktop or (iii) from within a web browser click on the "online survey" link on the CUED local web page. Option (iii) also allows you to use the survey system from elsewhere in Cambridge (eg from your College).

Answers to the survey questions will be kept completely anonymous and no reference to the computer user will be made in any output from the survey program.

Please remember to do the survey. This is your chance to let us know how you feel about the course, and we take the results very seriously. Surveys provide valuable feedback for lecturers, which helps us to improve the course. If you have any problems with the survey, please contact [Director of Undergraduate Education](#)

For all years, lecturers sometimes also issue a short questionnaire during lectures to obtain some running feedback

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on how their courses are going. Part IIA students also have their own survey and fast feedback facility for supervisions.

[Archives of past survey results](#)

Best lecturer award

Undergraduates in all years are encouraged to [vote online for their 'best' lecturer](#). Don't worry about what we mean by 'best' – it could be the most inspirational, clear, funny etc... whatever... you decide. The Teaching Office will just count up the votes and see who wins, and give them a prize at Prize Day. Voting closes at the end of Easter Term.

Fast feedback facility

The fast feedback facility can be used to send rapid messages to warn teaching staff of problems as they arise (or to complement teaching staff on a job well done). These messages are automatically anonymised (email addresses are hidden). In order for the system to work, it is necessary to specify the general topic area of each feedback comment using the menus at the top of the comment window. Note that all fast feedback traffic is monitored (before anonymisation) by the Director of Undergraduate Education in the Teaching Office.

To use the fast feedback facility for a machine in the DPO either (i) type "feedback" at the teaching system prompt, or (ii) click on the "fast feedback" icon on the desktop. To access the facility from elsewhere: click on the "fast feedback" link on the CUED local web page, which takes you to <http://www.eng.cam.ac.uk/teaching/apps/FFF/>. If you have any problems with the fast feedback facility please contact the [Director of Undergraduate Education](#).

Inclusive teaching

The Equality Act (2010) requires higher education institutions to take positive steps to make their education accessible to disabled students and to make 'reasonable adjustments' to provision to ensure that disabled students are not disadvantaged. Disabilities may include physical or mental impairments: the majority of these students have specific learning difficulty (SpLD) in the form of dyslexia. Cambridge University Disability Resource Centre has some standard recommendations for appropriate academic support for such students. Further provision may be required in particular cases.

In an organisation of our size and complexity, individual variations in provision are potentially disruptive. However, many of the suggested adjustments are just good educational practice, so represent things we should be doing anyway as a Department that takes pride in the excellence of its teaching. Indeed, we already follow many of the recommendations (e.g. provision of cribs). The approach we have adopted is therefore to aim to have inclusive standard procedures for all teaching activities. Students are expected to make use of available resources to suit their needs, and to contact staff themselves (e.g. lecturers, lab leaders) if additional material is required.

The syllabus pages will give you lecturer details for part [IA](#) and part [IB](#) lecturers. Lab leader details can be found here for [IA](#) and [IB](#).

Contact details of part II lecturers can be found on the relevant syllabus pages.

Any enquiries should be addressed to the [CUED Director of Undergraduate Education](#).

The following recommendations have been agreed by the Faculty Board (12 November 2012):

Part IA guide

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- Electronic versions of handouts should be made available on-line 24h in advance of lectures or other teaching sessions (e.g. labs). [This allows students who do have special requirements to produce their own customised hard copy if they wish: e.g. single-sided; large format; non-white background].
- Filled-in versions of notes should be made available on-line after lectures.
- Recording lectures (audio) is often recommended to students as a learning aid. They must sign an agreement to use the recording only for their own personal study, and acknowledging IP and copyright. The agreement form can be found [here](#), and students are asked to provide the Teaching Office with a copy. Lecturers are asked to consent to their lectures being recorded under these conditions. A list of students who have completed agreement forms can be made available on request.
- In labs, instruction should be provided in both written and verbal form.
- Lecturers should remember to pay attention to 'signposting' e.g. statement at start of each lecture of what is being covered; tracking progression throughout lecture; summary of main teaching points at end.
- All staff should make particular effort to put new vocabulary into context and explain new concepts. It is helpful to provide some repetition.

In 2016-2017, the department is trialing a lecture capture system for IA and IB. More information will be added to this guide in due course.

Departmental rules

Food and drink in lecture theatres

In response to a request from the SSJC, students are now permitted to take bottled water into CUED lecture theatres. Food, canned drinks, hot beverages etc will **not** be permitted. Please take your empty bottles away with you or dispose of them in the bins provided.

Food and drink in the DPO

The DPO is a centre for student project work and academic interaction, and students are permitted to eat and drink in the DPO provided they show appropriate consideration for the teaching, the equipment and their peers. In particular, it is inappropriate to eat or drink in a:

- formal lab session (unless the lab leader and demonstrators give explicit permission);
- crowded area (because of the spillage risk);
- way that gets in the way of your neighbour;
- unhygienic way (please use the wipes and handwash where appropriate);
- way that leaves a mess (please always put any waste in the bins).

Student notices and posters

Students are not allowed to put posters up in the Department without permission, except on the designated noticeboard in the Inglis corridor. Students who wish to display items in areas other than this should contact reception in the first instance.

Smoking

There is a total ban on smoking on Departmental sites.

Access to the Department

ID cards

Part IA guide

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All students should have been issued with a University ID card by their College. If you have any problems with access in the Department, please take your card to the CUED Security Office between 9am and 1pm. Students are advised that they may be challenged at any time when in the Department and asked to produce identification unless they are displaying their ID card.

If you lose your card, please report its loss immediately to the Security Office (or email security-admin@eng.cam.ac.uk), but note that replacements for lost cards should be ordered through your College.

General access to the Department

The Department's central site is open 7am – 10pm seven days a week. Further to this, the Baker building, including Library and DPO, remains open to students until 11pm. Access to the Department after 5pm will be through the foyer entrance to the Baker Building. Students must be carrying their University card at all time.

Access to the Department between 11pm and 7am

Only students who have attended a safety briefing are permitted to be present in the building outside the hours of 7am - 11pm. Access to the Department between 11pm and 7am requires an authorised Late Working Permit. This is available to download below or a hard copy is available from Reception.

N.B. At no time may any undergraduate work unsupervised in laboratory areas, including those with a Late Working Permit.

Access to the DPO

Drawing equipment and computer workstations and printers are available for private study except when there are timetabled classes or during periods when certain groups have priority. Normal [IT helpdesk](#) hours in full term are 8.30 am - 6.00 pm Monday to Friday. Any DPO equipment problems should be reported to the IT Helpdesk, either in person or by [email](#).

Dyson Centre

Private engineering project space, training and student team space

The Dyson Centre for Engineering Design (not to be confused with the James Dyson Building) is your space as Engineering Undergraduates, where you can undertake your own private engineering projects and experiments, and a space in which engineering students teams can operate.

The area offers training in use of a variety of machines including lathes, milling machines, laser cutters, and there are also selfservice 3D printers which you can learn how to use.

Various funding sources are available to help you kick start your project and the staff are on hand to offer help and advice with all aspects of engineering theory, development and design.

More details on www.dysoncentre.eng.cam.ac.uk

Also of note is Engineering Stores, where a vast range of engineering materials and components are held in stock for immediate purchase, details are available on:

<http://www.dysoncentre.eng.cam.ac.uk/stores>

Course material on Moodle

Most courses in the department have a page on the [University's Virtual Learning Environment Moodle](#).

These pages are maintained by course lecturers. Students registered to these courses are automatically enrolled at the start of the course and can engage in the course activities, including coursework submission when appropriate.

Other members of the University, staff or students, can self-enroll as observer and gain access to handouts and other documents made available to the students by the lecturers. This access is provided to students so that they can make an informed decision regarding their course selection. There might be copyright restrictions to the course material; any use of the course content that is not related to students education is not allowed. The material should not be redistributed by the students in any circumstances.

A key is needed to self-enroll on any course. By using this key, you indicate that you agree with the condition above.

Enrolment key: `cued_moodle_access`

NB. If you wish to unenrol yourself from a page that you have enrolled yourself on, please look for the Administration block within the course (usually lower down the page on the left) and click 'unenrol me'.

Source URL (modified on 26-09-16): <https://teaching16-17.eng.cam.ac.uk/content/part-ia-guide>