Part IIB guide

This document contains important information for Part IIB students which should be read in conjunction with the Part IIB Project Guide. Where appropriate, supplementary information will be issued throughout the year.

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Part II aims & objectives

Teaching aims

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

- specialise in considerable depth in a chosen area of engineering;
- acquire up-to-date knowledge and understanding of theory and practice in a chosen area of engineering, in an atmosphere informed by research;
- continue to develop skills in modelling, analysis and problem solving;
- develop creativity, synthesis and design skills, and the ability to create engineering design solutions;
- design and evaluate experiments and computer software;
- continue to develop communication, teamwork, management and leadership skills;
- develop an awareness of the international role of the engineer;
- develop the facility for independent learning, open-mindedness, and the spirit of critical enquiry;
- develop the ability to tackle unforeseen technical and management demands and to apply new technologies in novel situations with confidence and competence;
- develop their full potential as innovators and future leaders in industry, the professions, public service, academic teaching and research.

General objectives

At the end of Part II undergraduates should:

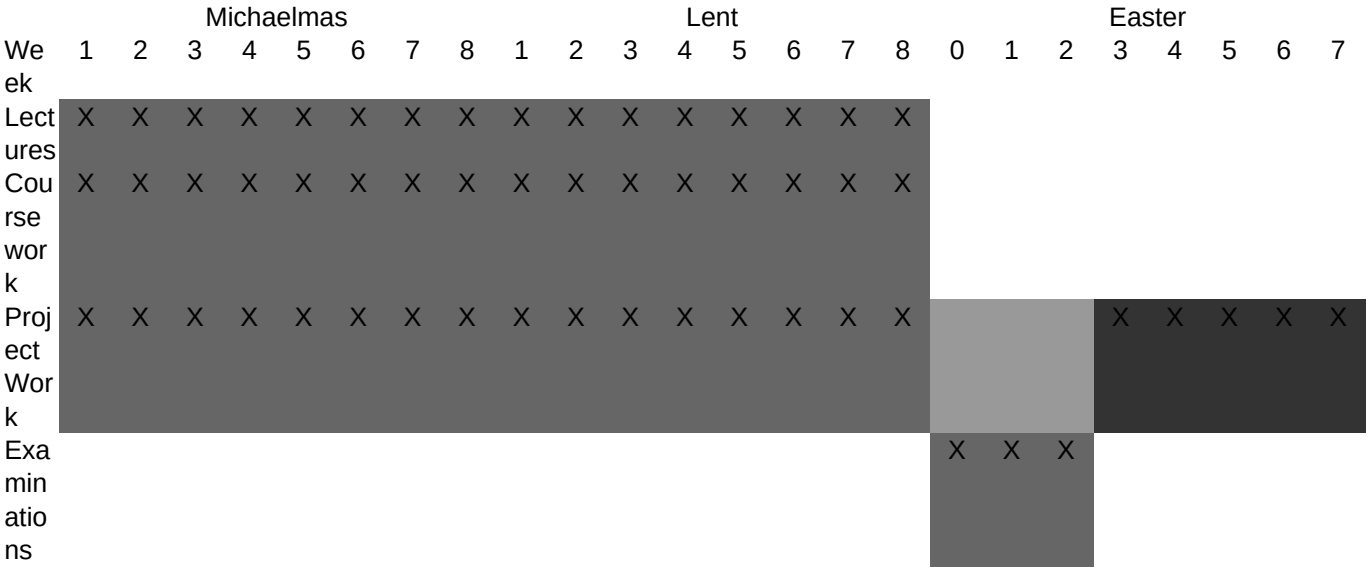
- by means of lecture courses, associated course requirements, examples papers and appropriate reading have gained an understanding in depth of engineering science in specialised areas;
- have progressed further with all but the first of the general objectives for Part I of the Engineering Tripos;
- by means of team projects have developed cooperative, management and communication skills as well as practical professional knowledge;

- by means of a major project in either design or research have developed creativity, innovation and a capacity for independent learning and enquiry.

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.

Detailed objectives for each element of the course are given with the syllabuses for each series of lectures and with the instruction sheets for coursework.

Balance of work



The following table supplements the Part IIB coursework and examination credit notice.

Modules

Introduction

Part IIB is based around a flexible modular scheme, in which strong specialisation is possible. About 75 modules are available, from which you choose eight. Most opt for four in each of the Michaelmas and Lent terms, but this is not a requirement. If you do wish to take an unbalanced selection, it is usually preferable to undertake the greater share in Michaelmas (e.g. 5:3), since past experience shows that project pressure tends to be higher in the Lent term. The decision is also influenced by the coursework load of your modules. You are advised to discuss your choice with your director of studies, particularly if it is not a balanced selection of 4 in each term.

Each module has 16 timetabled slots, in the Michaelmas or Lent term (with the exception of a small number of vacation modules). Exam-only use all 16, including examples classes; this is reduced to 12-14 slots for 25% coursework modules. Coursework modules use as many of the 16 slots as are appropriate to cover the course, including coursework briefing. All module examinations are held in the first three weeks of the Easter term.

Modules with Coursework

NB. There are **no supervisions** for Part IIB modules, only examples classes.

Coursework arrangements will usually be explained in the first lecture. Students may be required to sign up for experiments etc during the second lecture to be assured of a place.

Part IIB module coursework is marked anonymously, as far as this is practical. Coursework candidate numbers (CCN's) can be found on COMET. Students need to complete a coversheet and submit all coursework to the relevant Group Administrator. Marksheets will only show the CCN, and marked work will be returned via the Group Administrators.

Notes

- The default hand-in time for all coursework deadlines in 4pm on the given date.
- You need to know your CCN (available on COMET) – new this year is that this will be the same as your exam candidate number.
- The examiners or staff in charge of coursework may, at their discretion, interview candidates in connection with any element of coursework.

Requirements

The recommendation is that all coursework is submitted electronically on Moodle, if are asked to submit any coursework as hard copy ou are reminded that you will be required to submit it for scrutiny by the examiners at the end of the Easter term, so make sure that you retain it.

A coversheet will be issued that contains details of the procedure for coursework submission to External Examiners. The coversheet includes a declaration, which you must sign, that all coursework submitted is your own work. You will also be reminded of the importance of this declaration when you confirm your exam entries.

You must read the advice on cooperation and cheating and (if you have not done so already) will be required to complete a consent form for the possible use of the Turnitin text matching software (which checks electronic coursework submissions for plagiarism).

Assessment

Module assessment is of three types:

- 100% exam;
- 75% exam + 25% coursework;
- 100% coursework.

All Part IIB exams are of 1.5 hours duration and are held at the start of the Easter term. Dates for specific modules will be posted online during the Lent term.

See the information about marking & classing criteria for information about how Part IIB is classed.

Groups

The Faculty Board's list of modules & sets is published in May for the following academic year and is subdivided into Groups A to G, I and M, as in Part IIA, with the addition of Group R. The number of modules in each of Groups A-G will normally be not less than six and not more than ten, although the number and the topics covered will vary slightly from year to year.

The following Part II modules are considered management modules: modules in Group E, 4I1 and (for those qualifying for the civil engineering area) 3D9. You must complete at least two management modules during Part II (IIA and IIB). If you did not take two management modules in Part IIA you will be required to select one in IIB.

Note that the modules available may vary slightly from year to year.

Group A	Energy, fluid mechanics and turbomachinery
Group B	Electrical engineering
Group C	Mechanics, materials and design
Group D	Civil engineering
Group E	Management and manufacturing
Group F	Information engineering
Group G	Bioengineering
Group I	Imported modules *These modules are offered by other Departments or other courses within CUED.*
Group M	Multidisciplinary modules *This group includes the **mathematical modules**, and **foreign language modules** (which lead on from language skills developed in the Part IIA Easter term language projects).*
Group R	Research modules (available to students who have been classed with a First at Part IIA of the Tripos) *These modules are of interest principally to those wishing to pursue a career in research.*

Rules and restrictions

Engineering Areas

Guidance on module choices for students wishing to qualify in particular engineering areas can be found here. There are also conditions specific to professional institutions accreditation.

Modules may be further restricted as indicated in the 'Special Conditions' section at the top of the syllabus;

Timetable arrangements and sets

Please refer to the Faculty Board list of modules and sets for the definitive list .

Dissertation option

Regulations for the Engineering Tripos (S&O, pg327) permit a student to propose a dissertation of between 4,000 and 5,000 words in place of one module. Approval for a dissertation will not be given lightly; however a student may be granted permission to submit a dissertation on a subject in which he/she has a particular interest, but which is allied, rather than central, to the field of a module.

More information on this is available on the 4X1 moodle page:
https://www.vle.cam.ac.uk/course/view.php?id=124461

Students who are interested in taking the dissertation option should:

- identify a member of staff who can assess the dissertation and offer some mentoring and advice about the suitability of the subject (the Teaching Office can assist with identifying a mentor if necessary);
- seek approval from the Director of Undergraduate Education **before the Michaelmas COMET deadline**, so

that they can choose another Michaelmas Term module if their proposal is not approved;
- send a statement (about 600 words) giving the title and a short synopsis of the scope of the dissertation to the Secretary of the Faculty Board ***by Wednesday of week 2 of the Michaelmas term***, together with a note of their seven other modules. The statement should be signed by the Director of Undergraduate Education and the proposed dissertation assessor to indicate their support;
- comply with the word count and notes on referencing and formatting stipulated in regulation 29 for the Tripos;
- expect to commit the same amount of time to their dissertation as for any other Part IIB module.

The Faculty Board will decide whether to approve the student's proposal at its second meeting of the Michaelmas term (Monday of week 5).

[**Note:** completed dissertations must be submitted for marking via the 4X1 Moodle site by 4pm wednesday of week 1 of the Easter Term]

Language modules

Students who wish to take a language module in Part IIB must make a binding commitment to take 4M1 French, 4M2 German, 4M3 Spanish or 4M4 Japanese when they enter their preferences in COMET towards the end of the Easter term.

When COMET closes on the the last day of Full Term in June all language module selections will be locked. It will **not** be possible to change them either at the start of the Michaelmas term or at the start of the Lent term.

Ballots and special conditions

For modules where a ballot is normally needed, this information should be available to students on syllabuses and other documents. A ballot will be administered using COMET on the first day of lecture of the corresponding term.

The following modules are known to have limited places or are capped with ballots run in the first week of term. Please consult their syllabus page for more information.

- Module 4A4 (Aircraft stability and control)
- Module 4E1 (innovation and strategic management of intellectual property)
- Module 4M29 (Designed to lead)

If numbers are particularly high for any module, the need for a ballot will be announced at the first timetabled period.

Module selection on COMET

You are required to log on to COMET to make a provisional selection of your Part IIB modules in the last two weeks of the preceding Easter Term. You will be able to make changes to your selection at the start of the Michaelmas term (and further changes to Lent modules until January), except for 4M9 and any language options.

Your selection must be finalised each term by midnight on Wednesday of week one. Shortly after each deadline, you will confirm your selection for that term as a binding exam entry that may not subsequently be changed or discounted (i.e. after the Michaelmas deadline you will **not** then be able to discount any module for which you were entered in the Michaelmas Term).

Modules are offered subject to demand. If the numbers for any module are very low it may be withdrawn or given as a directed reading module rather than as a taught course.

Although you are not required to finalise your choice of modules straight away it is important, if at all possible, to attend the first timetabled period of any module of interest since it is then that the leader will give a general description of its content.

COMET will notify you if your module choices are invalid or do not fit into your chosen engineering area, in which case you must revise your selection.

Module administration

Queries about particular IIB modules should be addressed to the module leader in the first instance (as detailed in the syllabus).

Procedures regarding IIB coursework hand in (Coursework Candidate Numbers)

IIB coursework is marked anonymously wherever possible. The course syllabuses will indicate if certain coursework components are not assessed anonymously.

Each student is given an individual coursework candidate number (CCN). It is **your responsibility to enter your CCN onto the coversheet of anonymous coursework. Submissions on Moodle will preserve your anonymity where required.** You will be able to access this number on COMET when it becomes available (hopefully week 2).

Please ensure that your name does not appear anywhere on the coursework.

Coursework hand-in procedures and contacts

Procedures

All coursework is marked anonymously and each student has been allocated an individual coursework candidate number (CCN). **It is the responsibility of the student to enter their CCN onto the coversheet** and they will be able to find this number at: http://www3.eng.cam.ac.uk/comet/student/yr4

If submitting coursework via Moodle please ensure that you use the submission section for undergraduates which is clearly indicated on the relevant Moodle page.

All coursework for should be submitted via Moodle, if you have any queries please get in touch with the Divisional contact listed below.

4A…	Mr P Norman	
4B…	Mr K Barney	
4C…	Ms Liz Howard	
4D…	Mrs A Roche	
4E…	Ms A Gulczynska	
4F…	Mrs K Cole	
4G…	Mrs K Cole	
4I…	Ms A Gulczynska	

4M (language modules)	Mrs K De Silva	
4M (non-language modules)	Mr K Barney	

Related forms

- Coursework coversheet
- Submission form for external examiners

Lecture & lab start times

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 the Constance Tipper Lecture Theatre 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
- Fourth lecture 12.05-12.55

This schedule allows the Constance Tipper Lecture Theatre to empty and refill at 11am. Students should leave the lecture theatre 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.

Labs

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

Afternoon activities start on the hour.

Lateness penalties

For all IIB coursework submitted after the given deadline a penalty of 20% of maximum achievable marks per week or part week that the work is late will be applied.

There are a number of reasons why it may not be possible to submit on time, please refer to the policy on deadline extensions.

Projects

Each student must undertake a major individual design, research and/or computer project at a high technological level on a topic of practical relevance. A member of CUED staff will act as your project supervisor. Your project is a very important part of the final year and is expected to take up roughly half your working time throughout the whole of that year.

See the Part IIB Project Guide (second notice) for comprehensive information about the projects.

Information for Part IIA students about selecting projects is included in the Part IIB projects: first notice.

Good academic practice vs academic misconduct (including plagiarism)

The University provides guidance on Plagiarism and Academic Misconduct which can be found at https://www.plagiarism.admin.cam.ac.uk, where academic misconduct includes any practice that may unfairly advantage a student's academic assessment (which includes plagiarism).

Suspected cases of Plagiarism and Academic Misconduct will be handled by the Director of Undergraduate Education in conjunction with the relevant Chair of Examiners, which may result in the case being referred to the University's Office of Student Conduct, Complaints and Appeals for consideration under the disciplinary regulations.

You should read and ensure that you understand the Department's guidance on avoiding academic misconduct, which covers:

- definition of academic misconduct
- plagiarism avoidance: expectations of all students
- distinguishing between cooperation and cheating
- sources of guidance on academic integrity, record keeping & referencing

If you have any queries please speak to your DoS.

Exam information

See the practical exam information page for details of:

- the exam period, location & timetable
- preparing for exams
- documents & equipment allowed during exams
- the day of the exams
- after the exams

You may also be interested in:

- the Guidelines for Examiners and Assessors: Part IIA, Part IIB
- the Department's statement on assessment types for an explanation of the differences between formative and summative assessment activities and details of how you can expect to receive feedback on your performance throughout the course.

How to give feedback on the course

Your feedback is **essential** for informing the development of the Tripos. Staff take it very seriously and every year it leads to real changes, for example:

- the introduction of the Dyson Centre
- the redesign of the Department's Library
- extending the Part IB exam period
- introducing more practical Part I lab sessions
- more staff training on supporting students with mental health difficulties.

We appreciate that it can feel like you are being bombarded with requests to complete surveys see **our page on student surveys and giving feedback on the course** for details of the feedback mechanisms which the Department particularly values. These include the fast feedback facility, course-specific and national surveys and the best lecturers awards.

Please ensure that all comments comply with the Department's code of conduct for survey respondents.

Accreditation

At present the four-year MEng pathways with the exception of the 'Engineering Science' pathway offered by the Department of Engineering are accredited by one or more of the professional engineering institutions, depending on the engineering area studied.

Students are also strongly encouraged to become student or affiliate members of the professional institutions which particularly relate to their interests.

For further details of the accrediting bodies, membership benefits and contact officers within CUED see the Accreditation of the MEng.

Inclusive teaching

The Department's approach

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. The University has a Code of Practice on Reasonable Adjustments for Disabled Students and the Accessibility and 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 Director of Undergraduate Education.

Facuty Board recommendations

- Electronic versions of handouts should be made available online 24 hours 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 online after lectures, ideally within a week but certainly by the end of term.
- Recording lectures (audio) is often recommended to students as a learning aid. Students are permitted to use the recording only for their own personal study, and acknowledging IP and copyright. Lecturers are

asked to consent to their lectures being recorded under these conditions.
- In labs, instruction should be provided in both written and verbal form.
- Lecturers should remember to pay attention to 'signposting' e.g. statement a 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.

Sensus Access

Sensus Access is a free self-service facility which is designed to allow diabled students and staff (or those supporting them) to create accessible alternative formats of inaccessible digital documents. Further information is available on the Accessibility and Resource Centre's website.

Departmental facilities and rules

See the facilities and rules page for information about access to the Department, departmental rules and facilities such as the computer system and The Centre for Languages and Inter-Communication etc.

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.

For more information see 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:

https://www.finance.eng.cam.ac.uk/finance-purchasing/stores

Course material on Moodle

Most of the Department's courses 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.

The department makes a self enrollment key available for most courses so that students choosing courses in IIA and IIB can make a decision on course choices without having to be fully enrolled. Self enrollment is at the discretion of the course leader and may not be available for every course. Where available the key may also be used by students to access courses they are following where there are delays or issues with auto-enrollment. 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 a student's education is not allowed. The material should not be redistributed by students in any circumstances.

Where there is evidence of access to moodle for purposes which are not reasonably linked to a student's personal study on the course the department reserves the right to withdraw this facility on an individual or course basis.

The department explicitly forbids the use of automated tools to "scrape" courses. Access patterns indicative of the use of such tools will result in the removal of access to courses.

The "Archive" moodle should be used by students to review material from earlier in their course, the self-enrollment key is not provided for this purpose.

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

Enrolment key: cued_moodle_access

You may wish to look at our 'getting started' guide.

Source URL (modified on 24-08-23): https://teaching26-27.eng.cam.ac.uk/content/part-iib-guide