MET: Creating future leaders

The Manufacturing Engineering Tripos is a unique two-year programme that combines engineering, technology, theory, practical application and professional development to prepare you for leadership roles in manufacturing and engineering. The course will develop your understanding of how the engineering, financial, organisational and human aspects of firms work. Starting with the design of new products we look at materials, production technologies and industrial engineering, going through organisational and human aspects to marketing, business strategy and operations management.

When students finish the course, they are much sought-after for a wide range of demanding jobs, not only in industry, but also in other branches of engineering, consultancy or commerce. Students are well placed to start their own companies, having not only gained a thorough understanding of how business works, but also having a sense of empowerment and strong entrepreneurial drive.

The MET course is based in the Institute for Manufacturing (IfM) at the West Cambridge site. Our building has dedicated MET lecture rooms, a design studio, a student study room, workshop facilities and a robot laboratory, all for use by the MET students. Students are treated professionally and use the large common room space equally with other members of staff, academics and researchers.

For full details of the course, go to www.ifm.eng.cam.ac.uk/met/
e-mail: met-admin@eng.cam.ac.uk

MET students are always happy to provide a student view of the course. You can talk with them at the recruitment lunch at Trumpington Street on 1-2pm Thursday 26 February or at the MET Open Day at IfM on Wednesday 13 May. If you'd like to be put in direct contact with some current MET students, e-mail met-admin@eng.cam.ac.uk

Application and Selection

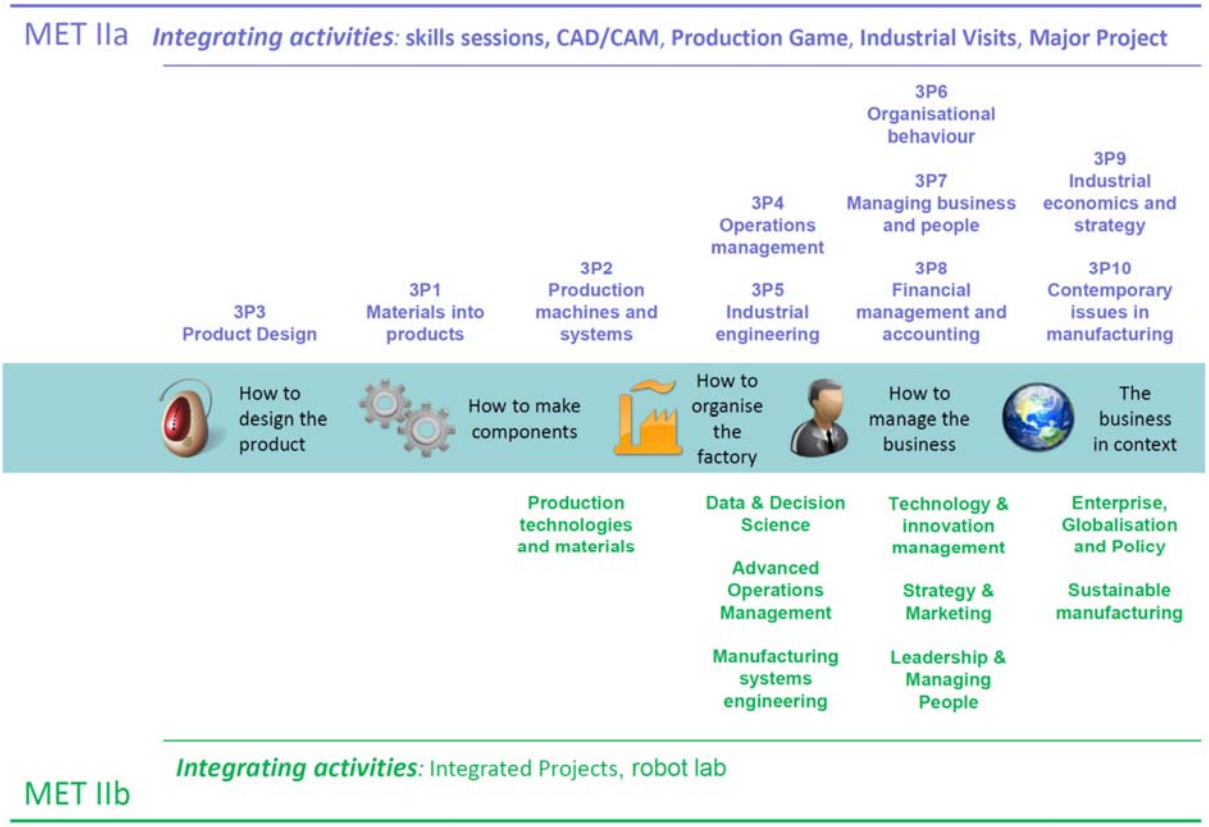
Selection for MET is based on your potential to thrive on the course. The qualities being sought include:

- **Technical knowledge and abilities**: materials, design, production methods
- **Personal skills**: enthusiasm, communication, organisation, teamwork, and an ability to work to tight deadlines
- **Leadership potential**: in industry, management, manufacturing and commerce

All candidates must complete an application form and we will also look at your academic track record and a reference from your Director of Studies. All candidates will be invited for a short interview. If you are interested in applying, please complete the application form and return it to the IfM Teaching Office met-admin@eng.cam.ac.uk by **Monday 1 June 2026** at the latest. Engineering students should also put down MET on their COMET entry. Interviews will be held week commencing **15 June 2026**; other times by arrangement. We will let you know the result of your application soon after the IB examination results are known. The application form is available here: http://www.ifm.eng.cam.ac.uk/education/met/application/

Academic structure of the course

MET is very different to other Engineering options. The integrated course provides a sound theoretical basis in manufacturing technology, manufacturing engineering and business management, coupled with the repeated experience of putting theory into practice via a series of projects. MET students develop valuable skills in leadership, problem solving, team working, communication and are known for 'making things happen' – ensuring they are highly prized by employers. MET demands hard work, teamwork and initiative. The course generates a high level of esprit de corps and an ethos of self reliance, resulting in a strong sense of group identity - and a lot of fun! The graphic below aims to summarise the core content of both MET IIA and MET IIB.



3rd Year: MET IIA

The first year of the course is Cambridge-based and consists of ten modules with integrated coursework. The modules reflect the range of technical, managerial and contextual issues relevant in modern manufacturing firms and are summarised below.

A distinctive feature of the course is the Business Skills Development Programme which includes visits to leading firms, master-classes (e.g. in industrial design, patents and Intellectual Property), and personal skills development (e.g. team-working, presentation skills, time-management).

The course follows normal Cambridge terms, and has the standard undergraduate structure of supervisions. You will be based at the Alan Reece building for at least half of each week. Some blocks of lectures will take place at Trumpington Street, allowing easy access to central facilities such as libraries. Students are also offered the opportunity to gain workshop experience.

3rd Year modules:

Module number	Module Title	Module Scope
3P1	Materials into Products	From microstructure to mechanical property: manufacturing process optimisation for all classes of solids
3P2	Production Machines and Systems	The specification, operation and management of production machines and systems
3P3	Design	Integrating engineering and industrial design in the creation of new products.
3P4	Operations Management	The management of material and information flow in the supply chain
3P5	Industrial Engineering	The design of production flows and operations in manufacturing
3P6	Organisational Behaviour	An introduction to the theory of organisational behaviour
3P7	Managing Business and People	An introduction to the processes involved in starting and running a business.
3P8	Financial and Management Accounting	An introduction to the principles and practice of financial and management accounting.
3P9	Industrial Economics, Strategy and Governance	An introduction to the principles and practice of industrial economics, strategy and corporate governance.
3P10	Contemporary Issues in Manufacturing	Lectures to introduce current topics.

Integrated coursework: Major design project

The integrated coursework seeks to bring together issues from across the modules, and apply them in a practical way. This includes a major design project, a production simulation and a CAD/CAM and manufacturing exercise.

The major design project is a group project that lasts through the whole year. Groups design a new product and develop a comprehensive business plan. Professional advice is provided on how to set up and finance a small company. Some of the student groups have turned their project into reality, setting up their own companies and going into production. Projects have included the design of a pod for autistic children, a device to enable blind people to sense their environment, a water filtration system for the 3rd world, an ergonomic pipette, a novel water pistol, a 3D cinema system for the home and a device to enable deaf people to perform with music. Students are encouraged to build working prototypes to demonstrate the feasibility of their designs. The major design project concludes with a Design Show, featuring all the projects, and attended by industrialists, entrepreneurs and designers. For many students, this is the highlight of the year.

Industrial visits

Throughout Michaelmas and Lent terms, students visit 6 companies, representing a diverse section of manufacturing in the UK. This will include: primary processes, automotive, aerospace, electro-mechanical, specialised processes (e.g. Electronics and bio-tech) and FMCG (e.g. Food and consumer goods).

Business skills development programme

The skills development programme is a structured series of practical workshops designed to develop some of the personal skills critical for success in industry and related employment.

4th Year: MET IIB

The structure of the final year of the course is very different from a standard undergraduate course. Teaching is organised in intensive modules, interspersed with **periods in industry** normally outside Cambridge doing real industrial projects. Terms are a little longer than standard Cambridge teaching terms, and learning is achieved through seminar-style sessions and practical experience, rather than from formal lectures. MET IIB operates entirely from the IfM building at West Cambridge.

4th Year Modules

The modules cover the full range of manufacturing industry, including core modules on practical and operational aspects of manufacturing technologies and operations; operations management at the enterprise level and human resources and management. The lectures are strongly practically-oriented, and are often delivered by leading industrialists. There is also an extended exercise involving the design and build of an automated system to carry out simple assembly tasks.

Module	Scope	Duration
Enterprise, globalisation and policy	Understanding the international context in which manufacturing businesses work	1 day
Production technologies and materials	Current and future practice in selecting and using materials and production technologies	2 weeks
Manufacturing systems engineering	Understanding the operation of automated manufacturing systems	1 week
Sustainable manufacturing	Issues in managing a sustainable global business.	1 week
Advanced Operations Management	How an organisation manages its physical assets to enable service provision	1 week
Data and Decision Science	Appreciate the complex nature of business decision-making and develop a suitable approach to model decisions	1 week
Technology and innovation management	Understand the processes of innovation and technology management	1 week
Strategy and marketing	Marketing, brand and business strategies	1 week
Leadership and Managing People	The nature of leadership, change management and organising for innovation	1 week

Industrial projects

Students undertake industrial projects based in leading UK manufacturing firms, which allows students to apply material studied in the modules. In Michaelmas term, pairs or small groups of students undertake a three-day, then a two-week project in industry, normally away from Cambridge, working on a real problem for a company. In Lent term, students are away for 4 weeks working on more substantial projects in industry. In the Easter term, students have the chance to design and run their own 'Long project' that can be based in Cambridge, elsewhere in the UK, or even overseas. Support and guidance are provided throughout all projects, and the Cambridge supervisor keeps in close contact and visits the students in their company. However, it is expected that students will use their own initiative and skills. At the end of each project, the students make a presentation of their findings

to the company, to an audience that may include senior managers and shop-floor workers. The full written report is completed a few days later.

Examples of some recent projects are summarised below.

Examples of recent industrial projects

Company	Project
Coty	Yield improvement in cosmetics manufacture
Rolls Royce	Optimised assembly for Trent XWB aircraft engine
Sea France, Dover	Design of a system for holding motorcycles on ferries
Airbus	Long-term manufacturing strategy for tooling
Mercedes	Design of battery cell production facility.
Linx Printing Technologies, St Ives.	e-commerce feasibility study.
Fitzwilliam Museum, Cambridge	Design of a new coin cabinet for conservators
Holotag, Cambridge Science Park.	Analysis of competitors: Israel and Germany.
Amman, Jordan	PET bottle recycling

Automation laboratory

The automation laboratory is a practical team exercise, supporting the Manufacturing Systems Engineering module. The module aims to provide the theoretical background and underpinning to the practical session. In the laboratory, students apply the principles of planning automation, CAM/CNC, programming logic controllers, robotics, sensors, pneumatics and mechatronics.

For more information

For more information, please come to our recruitment events. There is a lunchtime information session (with lunch) in LR4 at Trumpington Street, 1-2pm on Thursday 26 February. There is also an Open Day at IfM on **Wednesday 13 May 2026.** This will be an opportunity to tour the MET building (IfM, 17 Charles Babbage Road, West Cambridge CB3 0FS) and meet staff who teach the course. The event is from 1pm-2.30pm, with a MET talk at 1.15pm followed by a tour of the building.

For further details, please check out our MET Recruitment Moodle page - https://www.vle.cam.ac.uk/course/view.php?id=194761
Our web pages https://www.ifm.eng.cam.ac.uk/education/met/ include a summary of the course.

IfM teaching Office:
The MET Administrator is Shane Strawson, and she can be contacted via met-admin@eng.cam.ac.uk
Prof Alexandra Brintrup: MET IIA Course Director (ab702@cam.ac.uk)
Dr Letizia Mortara: MET IIB Course Director (lm367@cam.ac.uk)