Developing and managing technology

The Technology Management Group of UCL’s Mullard Space Science Laboratory and UCL Centre for Systems Engineering (UCLse) have pooled expertise in spacecraft engineering, project management and systems engineering to develop an exciting new MSc (masters) programme in Technology Management.

It is our philosophy that the realisation of large, complex technology projects is a combination of good engineering practice, strategic planning, project management and systems thinking.

Our teaching instils a multi-level, long-term view of technology development and takes the view that organisations involved in such projects should be proactive in dealing with the dynamics of the modern business environment.

With nearly fifty years of experience of developing cutting-edge spacecraft technology, we have developed five guiding principles that we know to help deliver successful technology projects:

1. Principles govern process
2. Seek alternative systems perspectives
3. Understand the enterprise context
4. Integrate systems engineering and project management
5. Invest in the early stages of projects

Underlying these principles is a will to anticipate and respond to a changing environment with a focus on achieving long-term value for the enterprise. These principles are embedded in this MSc programme and in our wider teaching and professional training programme.

Preparing for a career in industry

UCLse has strong links with companies in the aerospace, communications, construction, energy, transport and defence sectors. Our Industrial Advisory Board ensures relevance to industry and provides ideas for research projects. The Technology Management MSc is ideal for motivated students that want to build on a good first degree to prepare for a career in engineering management or technology management.

Benefits to the student

Our MSc will enable students to:

• Understand technology development lifecycle options and processes
• Select the best technologies and find the right balance between novelty and risk
• Be aware of the context within which technology is developed including the economic and organisational constraints
• Develop key management skills such as leadership, decision-making and communication
• Understand important concepts such as value, strategy, innovation and intellectual property
• Produce compelling business plans for new technology
• Forecast how new technology will develop using scenarios and technology roadmaps
• Create reliable and resilient systems
• Develop an integrated, systems view of technology, covering issues associated with its development, deployment, maintenance, upgrade and disposal
• Conduct novel research in areas of interest through extensive projects
**CORE MODULES**

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<thead>
<tr>
<th>Module</th>
<th>Notes</th>
<th>Credit</th>
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<tr>
<td>Technology Strategy</td>
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<td>15</td>
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<tr>
<td>Lifecycle Management</td>
<td></td>
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<tr>
<td>Risk, Reliability, Resilience</td>
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<td>The Business Environment</td>
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<td>Research Project Concept</td>
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<td>Research Project</td>
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<td>Emerging Technology Review</td>
<td>a</td>
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**OPTIONAL MODULES**

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<tr>
<th>Module</th>
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<tr>
<td>Systems Design</td>
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<td>Project Management</td>
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<td>Defence Systems</td>
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<td>Spacecraft Systems</td>
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<td>Rail Systems</td>
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<td>Systems, Society and Sustainability</td>
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<td>Environmental Systems</td>
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**TOTAL COURSE CREDITS**

| Total Course Credits | e     | 180    |

Notes:
- Assessment: Each module is separately assessed through a combination of course work and a written examination. The project is assessed through written dissertation and subsequent oral examination. Delegates are required to pass all modules and the project. Candidates who perform well in all elements of the course may be awarded an MSc with Merit or Distinction.
- a. The Research Project is an individual project with an industrial context, including a dissertation. The scope of this work will be developed by the student in conjunction with their academic supervisor (and industrial supervisor for sponsored students). The Research Project Concept is a foundation for the Research Project. The Emerging Technology Review is a group project.
- b. Not all optional modules are timetabled in all years. Two optional modules are required to complete the MSc degree.
- c. Module accredited by the Association for Project Management.
- d. Delivered by UCL’s Department of Civil, Environmental and Geomatic Engineering in ten half-day sessions over the course of a term instead of the usual intensive ‘block week’ format.
- e. 1 credit represents approximately 10 hours learning time, in the form of lectures, discussion sessions, workshop activity, revision, independent study, project work or other activities. Each module has its own mixture of learning activities, but most will include a week-long block of intensive lectures.

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**Studies at UCL**

UCL is a world-leading university, appearing fourth in the last two QS World University Rankings (2012 and 2013). Based in the heart of one of the world’s great cities, it offers an unrivalled student experience.

To live in London is to experience one of the great cities of the world. Students at UCL benefit from our location in the centre of the capital, the hub of culture, arts, politics, government, the media, the law and the great financial institutions of the City of London. The capital also offers a scene and status unrivalled by any other city.

UCL has the best academic to student ratio in the UK (1:10), enabling small class sizes and outstanding individual support (Times 2013).

UCL provides an environment that encourages students to be ambitious - to want to change the world for the better. In 2011–2012 alone, UCL supported the creation of 34 new student businesses, and nearly half all students volunteered on community projects.

Above all, when it comes to entering the careers market, London graduates start with a real advantage, with so many of the country’s leading employers in the worlds of law, finance, business, media and communications on their doorstep.

**Examples of organisations we have worked with**


**Our programme**

The MSc is a full-time, one-year programme starting in September. 180-credits must be obtained by completing four core taught modules (60 credits), two optional taught modules (30 credits) and three research elements (90 credits).

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**Contact**

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