Systems Engineering

MSc/PgDip/PgCert

Launching in January 2020, this brand new Systems Engineering MSc aims to prepare students for the professional practice of Systems Engineering roles in multi-disciplinary teams across a range of industries.

The Centre for Systems Engineering has been at the forefront of developing systems engineering education for the past fifteen years, blending the breadth of systems thinking with the rigour of systems engineering and closely integrating this within acquisition management.

The course has been set-up to enable student's better understanding to focus content and delivery on Systems Engineering professionals working in distributed, agile, teams using shared models and flexible working approaches, with an emphasis on professional skills such as leadership, team working, communication, data management and ethics.

This part-time course meets the requirements of the Level 7 System Engineering Maters Apprenticeship Programme. Eligible organisations will be able to use up to £21,000 of their Apprenticeship Levy to cover the cost of the course tuition fees.

Course structure

The course is modular and you will accumulate credits for each module you successfully complete - 10 credits per module. The Thesis is worth 80 credits.

The course structure has been devised to give the maximum amount of flexibility for you to create your own learning pathway whilst ensuring that the fundamental principles of systems engineering are compulsory.

Individual project

The Individual Project provides you with an opportunity to undertake an in-depth study of an area of particular interest to you or your sponsor which is written up as a thesis or dissertation. The study might include, for example:

• Application of Systems Engineering tools and techniques to a real world problem
• Analysis of underpinning Systems Engineering theory and practice
• Development of new or tailored Systems Engineering processes.

Future career

Takes you on to impressive career prospects across a range of roles commensurate with your experience. This includes membership of multidisciplinary teams in acquisition, supply or research organisations. This could be in both general systems engineering roles or as a focal point for specific skills such as availability, reliability and maintenance (ARM), human factors, requirements, architecture test and evaluation, etc. It is also applicable to key roles in acquisition such as Project Team leader, capability manager and requirements manager.

Example modules

Modules form only part of the course, with the project(s) and theses making up the balance. Please see the course structure for details.

The list below shows the modules offered in the 2019-20 academic year, to give you an idea of course content. To keep our courses relevant and up-to-date, modules are subject to change – please see the webpage for the latest information.

Compulsory:

• Dependability and Resilience,
• Enterprise Management,
• Human Systems Engineering,
• Introduction to Systems and Systems Engineering,
• Megaproject Systems,
• Problem Analysis and System Definition Workshop,
• Problem Analysis and System Definition,
• Simulation in the Systems Engineering Lifecycle,
• Software and Cyber Systems Engineering,
• System Design and Realisation Workshop,
• System Design and Realisation.

Duration:
MSc: Up to five years part-time.
PgDip : Up to four years part-time.
PgCert: Up to three years part-time.

Start date:
October and January.

Location:
Cranfield.

Entry requirements:
A first or second class Honours degree or equivalent in science, engineering or mathematics. Alternatively, a lesser qualification together with appropriate work experience may be acceptable.

Contact details

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For further information please visit
www.cranfield.ac.uk/systemsengineering