



Military Electronic Systems Engineering

MSc/PgDip/PgCert

This course provides education and training in selected military electronic systems. It is particularly suitable for those who will be involved with the specification, analysis, development, technical management or operation of military radar, electro-optics, communications, sonar or information systems, where the emphasis will be on an Electronic Warfare environment. The course is intended for officers of the armed forces and for scientists and technical officers in government defence establishments and the defence industry. It is particularly suitable for those who, in their subsequent careers, will be involved with the specification, analysis, development, technical management or operation of military radar, electro-optics, communications, sonar or information systems, where the emphasis will be on an Electronic Warfare environment. A Military Electronic Systems Engineering graduate achieves a high level of understanding and detailed knowledge of military communications and sensor systems with particular regard to electronic warfare. In addition, the MSc course enables the student to carry out an in-depth investigation into an area of electronic warfare to further enhance their analytical capability.

Course structure

MSc students must complete a taught phase consisting of 12 core and elective modules, followed by an individual dissertation in a relevant topic. PgDip students must complete a taught phase consisting of 12 modules. PgCert students must complete a taught phase consisting of six specified modules.

Individual project

The project aim is for the student to undertake an extensive analytical research project using appropriate research methodology, involving simulation and modelling, measurements, experimentation, data collection and analysis. This will enable students to develop and demonstrate their technical expertise, independent learning abilities and critical research skills in a specialist subject area.

Future career

This course is typically a requirement for progression for certain engineering and technical posts within UK MOD. Successful graduates of this course should be fully equipped for roles in defence intelligence, systems development and acquisition, involving the specification and analysis of such systems, working individually or as part of a team either in the military or in the defence industry.

Example modules

Modules form only part of the course, with the project(s) and these 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:

- Communications Principles,
- Communications Systems,
- Electromagnetic Propagation and Devices,
- Electro-Optics and Infrared Systems 1,
- Radar Principles,
- Signal Processing, Statistics and Analysis.

Elective (choose six):

- Advanced Radar,
- Advanced Sensor Data Processing,
- Communications Electronic Warfare,
- Electro-optics and Infrared Systems 2,
- Foundations of Modelling and Simulation,
- Information Networks,
- Radar Electronic Warfare.

Duration:

Full-time pgCert/PgDip/MSc: one year registration.
Part-time PgCert: up to three years registration period.
Part-time PgDip: up to four years registration period.
Part-time MSc: up to five years registration period.

Start date:

September.

Location:

Shrivenham.

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

International students must provide evidence of English proficiency through an English language test. We accept IELTS, TOEFL, Pearson PTE Academic or Cambridge English Scale. The latest requirements can be found on the course webpage on the webaddress at the top of this page.

Contact details

T: +44 (0)1793 785220

E: cadsadmissionsoffice@cranfield.ac.uk

For further information please visit

www.cranfield.ac.uk/mese