

Purdue University

Founded as a land grant institution in 1869, Purdue University is a leading public research institution developing practical solutions to today's toughest societal challenges. Purdue is a leader in defense innovation through its work with the Purdue Energetics Research Center (PERC), the Purdue Military Research Initiative (PMRI), and the Institute for Global Security and Defense Innovation (i-GSDI).

Cranfield University, UK

Cranfield Defence and Security is at the forefront of providing research solutions and offering diverse instruction across topics in defense and security science, engineering and technology. They are a unique partner in offering defense education that makes a real difference to the lives of military, security and civilian personnel.

Contact Information

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Purdue University
and
Cranfield University
Dual
Graduate
Degree Program
in
Defense
Engineering
and
Technology

Dual MS in Defense Engineering and Technology

Purdue University and Cranfield University have partnered to develop and deliver a unique interdisciplinary, inter-institutional educational program.

The leadership at Crane Naval Surface Warfare Center in southern Indiana was a natural partner to launch the program in 2019. Then commanding officer of NSWC Crane US Navy Captain Mark Oesterreich, stated, “This partnership demonstrates how expertise in Defense Technology education can be leveraged in direct support of our mission, with the added benefit of investing in our current and future workforce. Net result will be quick results and better solutions.”

The partnership between Purdue, Cranfield and NSWC Crane is a unique opportunity for military personnel and civilians in the scientific, engineering and technology communities affiliated with the Department of Defense to study for graduate degrees in defense engineering.

Our goal is to introduce students to the critical issues and constraints associated with expeditionary warfare.

At Purdue, this one-of-a-kind interdisciplinary program does not live in any one academic college. It draws on Purdue’s internationally recognized strengths in defense from units and programs across campus. Similarly, Cranfield University draws upon its historical leadership in defence and security science, engineering and technology to deliver a comprehensive array of defence-related coursework. Dr. Stephen Beaudoin, professor of chemical engineering and director of the Purdue Energetics Research Center, is the academic director of the program at Purdue, while Dr. Amer Hameed, professor in Defence Engineering, is the coordinator for the program at Cranfield.



Instruction is hosted at WestGate Academy in Odon, IN.

The program requires completion of a total of thirteen courses, including six courses offered by Purdue and six by Cranfield. A thirteenth course is a sixteen week research course, which is mentored by either a Purdue or Cranfield faculty member, upon mutual agreement of the faculty and student.

All instruction is delivered face-to-face at Purdue@WestGate. Students receive instruction over a five-day period, involving roughly eight hours of instruction each day. At the end

of the instruction period, the students are mentored by the instructing faculty as they complete eight weeks of homework and project work.

Current Courses

- Big Data Analytics
- Science and Engineering of Energetic Materials
- Foundations of Cybersecurity
- Introduction to Energy Storage Systems
- Psychophysics
- Data Mining
- Communication Networks
- Communication Engineering 1 & 2
- Fundamentals of Ballistics
- Electro-optics Systems for Expeditionary Warfare 1 & 2
- Naval Weapons—Control and Guidance
- Military Autonomous Vehicles
- Fighting Vehicle Design
- Modelling, Simulation and Control for Defense Engineering
- Expeditionary Warfare Systems Design Study
- Light Weapon Design
- Naval Weapon Structures, Aeroelasticity, and Propulsion
- Naval Weapons Warheads, Explosives and Propellants
- Weapon Systems Technology
- Military Vehicle Propulsion
- Military Vehicle Dynamics
- Radar Sensing and EW
- Microwave Systems Engineering for Expeditionary Warfare
- Data Processing for Expeditionary Warfare