GRADUATE SCHOOL OF ENGINEERING & MANAGEMENT

WRIGHT-PATTERSON AFB, OH
The Graduate School of Engineering and Management of the Air Force Institute of Technology (AFIT) is a Carnegie-classified academic institution providing graduate degrees in engineering, applied science, mathematics and management. The defense-focused, research-based Graduate School currently offers 23 STEM master’s degree programs, 14 Ph.D. programs and 8 graduate certificate programs. These degree programs serve military and civilian students across the U.S. Air Force, Department of Defense (DoD), other government agencies, and government contractors.

AFIT’s Graduate School provides students with several significant advantages, including a more personalized educational experience, with a student-to-faculty ratio of approximately 6:1 in master’s degree programs; academic programs with a defense-related focus; and research on high-priority defense problems.

The Graduate School maintains a strong applied-research focus through AFIT’s seven multi-disciplinary research centers. The AFIT campus is located at Wright-Patterson Air Force Base and is part of the world-class research community that includes the Air Force Research Laboratory (AFRL) and the National Air and Space Intelligence Center. The Graduate School’s partnering relationship with AFRL allows faculty and students access to some of the most superb laboratories and equipment facilities in the world.

All Graduate School academic and research programs are judiciously designed to be in direct alignment with Air Force and DoD priorities, which results in a significant, positive impact on the Air Force and Department of Defense. AFIT’s innovative education, research and outreach programs are even more important and relevant today as the Air Force takes on the challenges of a complex and dynamic national security environment. The Graduate School of Engineering and Management is proud to continue providing world-class education, research and consultation necessary to sustain the technological supremacy of the United States Air Force.

The Graduate School of Engineering & Management is a Carnegie classified and U.S. News & World Report ranked institution.

AFIT’s highly-automated online admissions process usually renders an admission decision within 21 days.

Graduate School of Engineering & Management faculty have been awarded over 55 patents since 2001.
**By the Numbers**

**Research Expenditures**
- **AY 2018-2019**
- **$21.9M** Research Sponsorship Expenditures
- **$0.7M** Education-Related Proposal Expenditures

**Student Enrollment**
- **AY 2019-2020**
- **623** Master’s Degree Students
- **141** Doctoral Degree Students
- **203** Certificate Degree Students
- **89** Non-Degree Students
- **71%** In-Residence Students
- **29%** Distance Learning Students

**AFIT Graduates Statistics**
- **435** Degrees Awarded
- **AFIT Graduate Degrees Granted Since 1956**
- **21,000+**
- **55+** Patents Awarded Since 2001
The Graduate School of Engineering and Management offers defense-focused, advanced STEM-related degrees from six academic departments.

**AERONAUTICS & ASTRONAUTICS**
Aircraft and spacecraft play a crucial role in the Air Force’s defense of our nation. The faculty and staff in the Department of Aeronautics & Astronautics are all dedicated to producing graduates and research that will assure the future aircraft and spacecraft needs of the Air Force will continue to be met. The department conducts basic and applied research in: low and high speed aerodynamics, propulsion, structural mechanics, materials science, and dynamics and control as they pertain to aircraft and spacecraft.

**ELECTRICAL & COMPUTER ENGINEERING**
From low observable technology to guidance, navigation, and control, to the forefront of cyber operations, the faculty, staff, and graduate students in the Department of Electrical and Computer Engineering are dedicated to the advancement of science and engineering in support of the Air Force mission.

**ENGINEERING PHYSICS**
The Department of Engineering Physics is focused on basic science and applied technologies for the Department of Defense. The department offers courses, degrees, and research in applied physical sciences and nuclear engineering. Graduate programs emphasize practical research and its transition into operations within the U.S. Air Force, DoD, and other government agencies.

**MATHEMATICS & STATISTICS**
The Department of Mathematics & Statistics offers graduate programs leading to the degrees Master of Science (MS) and Doctor of Philosophy (Ph.D.). Specialization can be in any of a wide range of areas in mathematical analysis or statistics. Department faculty, consisting of half civilian and half military, publish research articles and present their research at major conferences and symposia. They also teach graduate classes for practically every program in the Institute. The Department of Mathematics & Statistics also hosts an active colloquium series featuring speakers from a wide spectrum of universities and research laboratories as well as the defense department.
OPERATIONAL SCIENCES
The Department of Operational Sciences offers world-class graduate programs in Operations Research, Logistics & Supply Chain Management, and Operations Management. Department faculty is comprised of experts in all major areas of operations research and logistics management. Their research has been substantially funded by the DoD, government, and industry sources. Members of the department hold Ph.D.’s, and are recognized leaders in the advancement of the methodology and application of operations research and logistics management.

SYSTEMS ENGINEERING & MANAGEMENT
Department of Systems Engineering & Management faculty possess a diverse set of expertise across multiple disciplines including engineering, management, environmental science, information sciences, and finance. The department’s mission is to provide defense-focused graduate education and engage in interdisciplinary research to achieve integrated solutions to 21st-century Air Force challenges and enhance the interface between technology and human resources by focusing on systems, processes, and management.

The Department of Systems Engineering & Management focuses on three major thrust areas: Environmental Engineering & Science, Engineering Management, and Systems Engineering. Additionally, the department has established the Systems Engineering Research & Analysis Group (SERAG) to provide a cohesive linkage of academic theory and practical implementation of systems engineering tools and techniques across these thrust areas.

Did You Know?
In addition to AFIT’s HLC accreditation, the Engineering Accreditation Commission of ABET accredits the following master’s degree programs in the Graduate School of Engineering and Management: Aeronautical Engineering, Astronautical Engineering, Computer Engineering, Electrical Engineering, Nuclear Engineering, Environmental Engineering and Science, Engineering Management, and Systems Engineering.

Additionally, the Industrial Hygiene master’s degree program is accredited by the Applied and Natural Science Accreditation Commission of ABET.

OFFICE OF ADMISSIONS
- Distance Learning
- Eligibility
- Tuition
- Scholarships
- Required Documents
www.afit.edu/ADMISSIONS

OFFICE OF THE REGISTRAR
- School Catalog
- Registration
- Transcript Forms
- Class Schedules
- Academic Calendars
www.afit.edu/ENER
Research programs at the Air Force Institute of Technology (AFIT) are aligned with national defense priorities and provide valuable technical and management experiences that enhance the graduates’ performance throughout their careers. AFIT works closely with research sponsors from many U.S. Air Force and Department of Defense organizations to identify high interest problems that match our faculty expertise and educational requirements to maximize value.

AFIT’s seven dedicated research centers and other research groups serve as focal points for many of our research initiatives. Emerging research groups are addressing game-changing technologies including hypersonics, human-machine systems, data sciences, digital engineering, artificial intelligence and developing defense-related additive manufacturing applications. AFIT advises over 40 major acquisition programs through the Scientific Test & Analysis Techniques Center of Excellence to achieve maximum effectiveness of test resources. New consultation efforts include exploration of multi-domain approaches to the U.S. Air Force’s core missions.

AFIT has strategic partnerships with the Air Force Research Laboratory, the National Air and Space Intelligence Center, the Air Force Life Cycle Management Center, the United States Transportation Command, and many other organizations and operational communities to maximize the contributions of our research programs to national defense needs. Our faculty and students also engage in collaborations with researchers at universities throughout the nation.
Autonomy & Navigation Technology Center

The Autonomy and Navigation Technology (ANT) Center is a forward-looking research center seeking to identify and solve tomorrow’s most challenging navigation and autonomous and cooperative control problems. The ANT Center’s goal is to develop navigation technology that ensures we can navigate anywhere, anytime, using anything. The ANT Center focuses on three research thrusts: autonomous and cooperative systems, non-GPS precision navigation, and robust GPS navigation/NAVWAR.

Center for Cyberspace Research

The Center for Cyberspace Research (CCR) conducts cyber security and cyber operations research at the Master’s and Ph.D. levels. CCR affiliated faculty teach and direct graduate research focusing on understanding and developing advanced cyber-related theories and technologies, such as critical infrastructure protection, cyber-physical systems, network intrusion detection and avoidance, insider threat mitigation, cyberspace situational awareness, malicious software detection and analysis, software protection, and anti-tamper technologies.

Center for Directed Energy

The Center for Directed Energy (CDE) supports U.S. Air Force and DoD agencies in transitioning Directed Energy weapons, such as high energy lasers (HELs), to the battlefield through vigorous scientific experiments, engineering research and diverse consulting activities, in conjunction with educational programs offered through the Department of Engineering Physics.

Center for Operational Analysis

The Center for Operational Analysis (COA) directly supports DoD strategic objectives and is uniquely qualified in its ability to apply rigorous quantitative and qualitative tools, methodologies and approaches to identify, analyze and solve complex operations and supply chain problems. COA research analysts hold advanced degrees and certificates from many of the most respected Industrial Engineering, Operations Research and Supply Chain Management programs in the United States.

Center for Space Research & Assurance

The Center for Space Research and Assurance (CSRA) develops the technical space cadre through world-class research and immersive hands-on graduate education. It performs research into novel highly-valued resilient, responsive and reliable space capabilities for the DoD and Intelligence Community. The CSRA executes leading-edge space technology development, science, and space experiments in collaboration with government organizations to meet the challenges of tomorrow.

Center for Technical Intelligence Studies & Research

The AFIT Center for Technical Intelligence Studies and Research (CTISR) is focused on the U.S. Air Force, DoD and Intelligence Community’s scientific, technical and operational activities through graduate research programs. Activities are directed on improving technical intelligence gathering via remote sensing. Current research is focused on signature measurement, phenomenological understanding, and algorithm development for target detection and tracking, battle space combustion characterization, event classification, and material identification.

Nuclear Event Analysis & Testing Center for Specialized Research

The Nuclear Event Analysis and Testing Center for Specialized Research (NEAT CSR) was established with three primary functions: research, education, and human capital development. The objective of the NEAT CSR is to tie together the disparate technological areas and disciplines to be at the cutting edge of present and future nuclear technologies while providing nuclear expertise to educational initiatives at all levels and to all other centers housed at AFIT. Partnering with sponsors, industry, and universities will expand graduate student research options and generate highly qualified nuclear researchers through strategic partnerships.

Scientific Test & Analysis Techniques Center of Excellence

The Scientific Test & Analysis Techniques Center of Excellence (STAT COE) consists of an interdisciplinary group of DoD T&E professionals that possess knowledge and experience of DoD T&E planning, execution and assessment, knowledge and experience in warfare areas, and statistical expertise. In addition to injecting more STAT into program test strategy planning, the STAT COE experts ensure the organic test and evaluation team gain a better understanding of STAT and how it should be executed within developing testing methodologies.

Did You Know?

- AFIT research teams have developed products that have gone up in experiments on the space shuttle and researchers have developed an organic satellite product that will feature in future defense programs in space.
- AFIT research centers have collaborated with a vast array of organizations, including NASA, the National Science Foundation, the Department of Homeland Security, and leading corporations in the aerospace industry.

AFIT: “Teaching what we research and researching what we teach.”