

# NAVAL POSTGRADUATE SCHOOL

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NAVAL  
POSTGRADUATE  
SCHOOL



# Graduate Certificate in Robotics Engineering

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# Overview

- Graduate certificate
- Focus on NR&DE relevant topics in Unmanned Systems
- Four technical courses, nominally one year
- Hybrid delivery:
  - Remote classroom/assignments
  - Two, one-week lab residencies
- Summer entry point  
30 March application deadline

Department of Mechanical and  
Aerospace Engineering



GRADUATE CERTIFICATE  
in

**ROBOTICS  
ENGINEERING**

REAL-TIME AND FLEXIBLE-TIME  
DISTANCE LEARNING PROGRAM



*Advance your skills in one  
of the fastest trending,  
in-demand, and defense  
relevant technology sectors.*

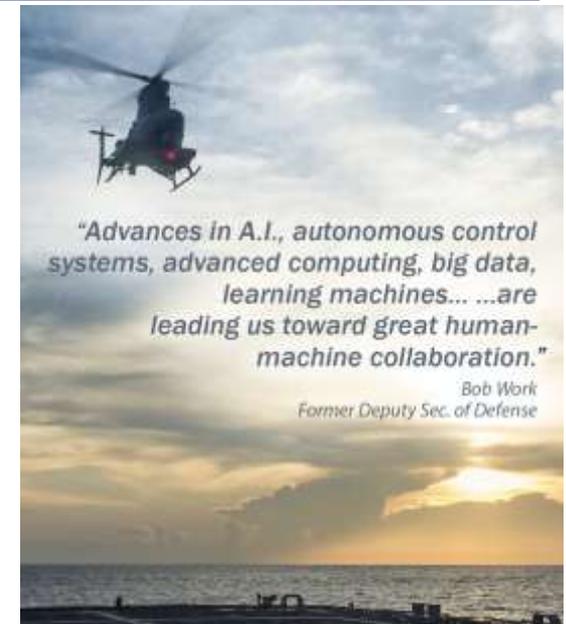




# Robotics Engineering Certificate

## Four Graduate Courses

- Foundations
  - ME3420 Computational Foundations for Robotics (MATLAB)
  - EC4310 Fundamentals of Robotics
- Applications / Electives
  - PH3014 Sensor Integration and Situational Awareness
  - AE4820 Robotic Multibody Systems / ME4823 Multiple Robot Cooperative Control
- A variety of other courses across campus may be substituted for the “Applications” courses based on teaching schedules and customer demand. E.g., ME4800: Machine Learning for Autonomous Operations.





# Educational Objectives

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- Designed for a practicing engineers with a STEM undergraduate degree
- Provide foundational knowledge to begin working on NR&DE topics in robotics and autonomous systems
- Uniquely relevant defense (NAVSEA/NAVAIR) examples and applications:
  - Sensor integration
  - Mission-centric
- Combine NPS expertise in distance learning and hands-on education
- Foster collaboration and alignment across NR&DE





# Stackable



- Options to “stack” certificate programs, e.g.,
  - Robotics + Applied Trajectory Optimization + Thesis  
= Aeronautical Engineering MS
  - Robotics + Data Science + Thesis  
= Operations Research MS
- CAVEAT: This route benefits from prior planning!



# Instruction

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- Faculty-led instruction
- Typically one course per quarter
- Online delivery in two modes
  - Synchronous: Parallel with resident course via VTC
  - Asynchronous: Self-paced online material
  - Both modes provide schedule flexibility
- One-week NPS residencies
  - Hands-on labs
  - Leverage NPS facilities
  - Collaboration between NR&DE engineers



# Details

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- Cost
  - \$2,700 / course
  - Two, one-week hands-on residencies at NPS
  - Minimal textbook costs. Software licenses provided.
- Eligibility
  - STEM undergraduate degree
  - Command participation agreement
- Application
  - [Online application](#): **Due 30 March**
  - No GRE



# Details

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- Class Size
  - Minimum of 10 applications by 30 March
  - Maximum TBD
- Programming Languages
  - Emphasis on language-independent computational concepts
  - Currently programming in MATLAB with exposure to ROS, OpenCV, simulation, etc.



# Summary

- Four course, one-year graduate certificate in Robotics Engineering
- Hybrid model:  
DL + 2x(1-week) residencies
- First cohort starts 6 July
- [Apply online](#) - deadline 30 March
- FAQ <https://my.nps.edu/web/mae/robotics-certificate-faq>
- Contact
  - [robotics.certificate@nps.edu](mailto:robotics.certificate@nps.edu)
  - [www.nps.edu/web/mae/robotics](http://www.nps.edu/web/mae/robotics)

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