



NAVAL
POSTGRADUATE
SCHOOL

The ECE Department is dedicated to

- Offering programs at the Master's, Engineer's and Ph.D. levels that provide a **military relevant graduate education**.
- Offering courses and synchronous, customer tailored distance learning degree programs via VTE
- Offering **short courses & Certificate Programs** targeted to specific audiences.
- Offering 12-, 18- and 24-month Master degree programs tailored to student backgrounds.



Research sponsors include

- Basic Research Agencies (ONR, AFOSR, ARO, DARPA, NSF)
- Intelligence Agencies
- Navy Systems Commands
- Navy Warfare Centers
- Industry

Recent thesis research accomplishments

- *Performance Analysis of IEEE 802.11g Signals Under Different Operational Environments*, LTJG S. Filtikakis, Hellenic Navy.
- *FPGA Implementation of a BFSK Transmitter/Receiver*, Capt J. Svenningsen, USMC.
- *A Person Tracking Mobile Robot Using An Ultrasonic Positioning System*, Capt C. Hao Yang, Taiwan Army.
- *Novel Approach to Using Silvaco to Simulate and Design Tunnel Junctions*, LT R. Gelinis, USN.
- *Distributed Beamforming in Wireless Sensor Networks*, Mr. C. Chan, Singapore Ministry of Defense.
- *Security of Sensor Networks*, Mr. H. Teo, DSO National Laboratories, Singapore.
- *Wireless Smart Shipboard Sensor Network*, LT A. Nozik, USN.
- *A Novel Photovoltaic Power Converter for Military and Space Application*, LT R. Fernandez, USN.
- *Face Recognition Using Infrared Imaging*, Capt D. Domboulas, Hellenic Air Force.
- *Sensor Synchronization, Geolocation and Wireless Communication in a Shipboard Opportunistic Array*, Maj Y. Loke, Singapore Navy.
- *Particle Swarm Optimization for Detection of LPI Emitters*, ENS N. Frantz, USNR.

Department of Electrical & Computer Engineering

Monterey • California

*Providing cutting edge,
technical, military
relevant graduate
education*

*Preparing students to
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Expand your knowledge and get ready for tomorrow's technical challenges

Explore:

Control & Robotics

- Control systems modeling, analysis & design.
- Target tracking, navigation, guidance & control.
- MEMS sensor technology for real-time motion tracking.
- Smart & wireless shipboard sensors, condition-based calibration.
- Mobile robots & inertial sensors.

Computers

- Design of high-performance computer systems for military applications.
- High availability & fault tolerant computing for mission-critical applications.
- Imbedded computing for battlefield & space-based applications.
- FPGA, VLSI & mixed-signal IC design.
- Reconfigurable computing, parallel processing & advanced computer architecture.

Sensors

- Sensor theory, technology, & application to battlefield weapons & surveillance systems.
- Active & passive sensor systems (lidar, multi-mode tactical radar systems, underwater sensors & sonar systems).
- Network-centric electronic warfare concepts, distributed sensor networks, sensor attack & protection.

Communications & Signal Processing

- Wireless communication schemes.
- Multipath fading effects on wireless transmissions & mitigation techniques.
- Bandwidth & power efficient modulation and coding schemes.
- Link budget analysis
- Underwater communications.
- Biometrics & classification.
- Speech recognition.

Nanotechnology & Ship Power

- Emerging nanotechnology applications.
- Robustness & reliability of next generation integrated circuits.
- MEMs for sensors and C4I.
- Electrical power for military platforms.
- Radiation-hardened electronics for space and strategic systems.
- Electric ship power design & modeling.

Network Engineering

- Dynamics of distributed systems.
- Wireless, ad-hoc and sensor networks.
- Performance, quality of service & security issues.
- Infrastructure of network-centric defense systems.
- State-of-the-art networking equipment: optical switches, routers, wireless access points, traffic generators, channel simulators, protocol analyzers.