

FREQUENTLY ASKED QUESTIONS

WHAT ARE THE PREREQUISITES?

- Acceptance by the ECE Department. Process requires a sufficient background in mathematics and technical undergraduate studies. Applicants with a BSEE degree will usually satisfy the requirements.
- Command/Company Endorsement.

IS THERE A SERVICE COMMITMENT?

There is no service commitment associated with the FTC Certificate Program.

WHO IS ELIGIBLE?

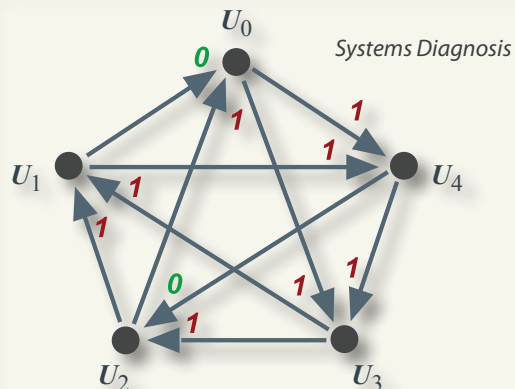
Applicants with a US government affiliation, government laboratory engineers, active or reserve military personnel, Navy civilians, current NPS resident students, and a limited number of contractors sponsored by Department of Defense (DOD) organizations.

WHEN DOES THE PROGRAM START?

Annually, beginning in the Fall quarter.

HOW LONG DOES IT TAKE TO COMPLETE?

Usually 3 quarters (1 course per quarter).



CONTACT INFORMATION

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www.nps.edu/ece

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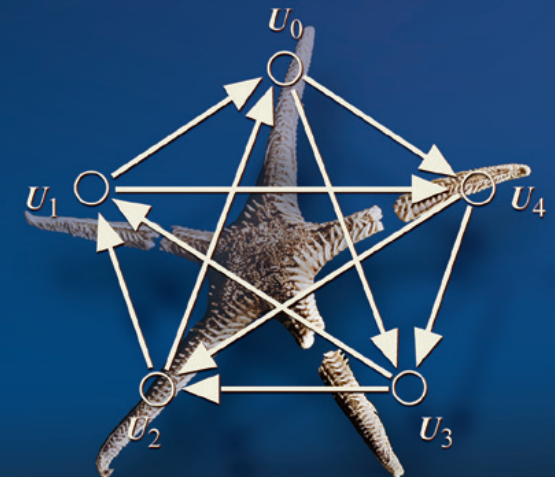


DEPARTMENT OF
ELECTRICAL and COMPUTER ENGINEERING

**GRADUATE CERTIFICATE
PROGRAM**
IN

**FAULT TOLERANT
COMPUTING**

A DISTRIBUTED LEARNING PROGRAM



NAVAL POSTGRADUATE SCHOOL

THE PROGRAM

The Fault Tolerant Computing Certificate Program provides a solid foundation in an area of significant importance and promise. Students will experience a mix of instruction and hands-on laboratory work.



THE CURRICULUM

EC3800 Microprocessor Based System Design (3-2)

Advanced microprocessor system for embedded control applications. Topics include CPU operation and timing, address decoding, exception processing, design of static and dynamic memory systems, bus arbitration, and direct memory access controllers. The laboratory consists of a design project integrating hardware and software using a state-of-the-art development system.

EC4810 Fault Tolerant Computing (3-2)

Testing of circuits and systems. Redundancy to achieve reliability. Design-for-testability, and built-in self test. Software and systems reliability.

CS4920 Advanced Topics (3-2)

Designed to support advanced group study of reliability through software. Rollback and recovery techniques.

THE OUTCOMES

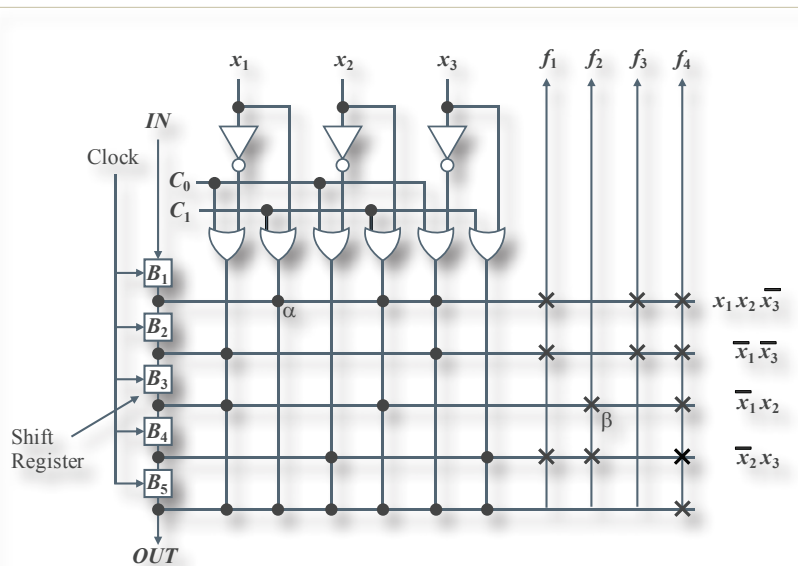
Upon completion of the Fault Tolerant Computing Certificate Program, students will have the practical experience and cognitive skills required to:

- Analyze, design and evaluate fault tolerant computer systems and apply these skills in a military systems environment.
- Apply knowledge of conventional microprocessor and programming fault tolerant computer systems using Verilog simulations.
- Analyze, design and evaluate *hardware* fault tolerant computer systems by applying knowledge of test techniques, hardware redundancy techniques, design-for-testability, built-in self test and systems diagnosis.
- Analyze, design and evaluate *software* fault tolerant computer systems by applying knowledge of software implemented redundancy, rollback, and recovery.

Graceful degradation through self-test and repair

Much of the cost of digital systems is due to testing. As a result, there is much research on the Design for Testability (DFT) problem. Here, the designer adds circuits whose only purpose is to ease the testing burden. It may be as simple as connecting an internal point to an output pin to make it accessible as a test point. Often, it involves sophisticated changes to the circuit. Students in the Fault Tolerant Computing Certificate Program will study these concepts both in the classroom and the lab.

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Design For Testability

Advance Your Career!

