

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 RC 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 Spring quarter.

HOW LONG DOES IT TAKE TO COMPLETE?

Usually 3 quarters (1 course per quarter).



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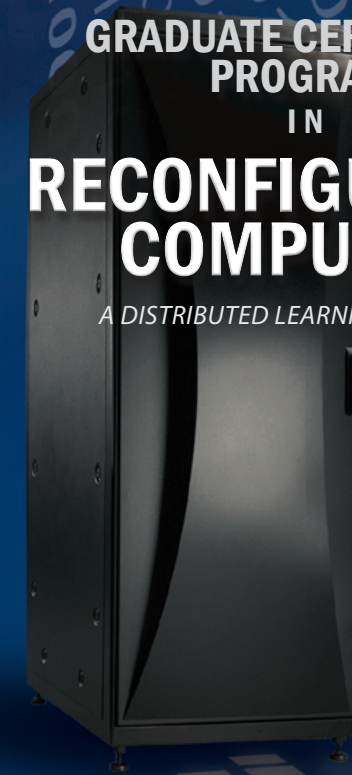


DEPARTMENT OF
ELECTRICAL and COMPUTER ENGINEERING

**GRADUATE CERTIFICATE
PROGRAM**
IN

**RECONFIGURABLE
COMPUTING**

A DISTRIBUTED LEARNING PROGRAM



NAVAL POSTGRADUATE SCHOOL

THE PROGRAM

The Naval Postgraduate School (NPS) offers a 3-graduate-course certificate for completion of a program in Reconfigurable Computing.

The Reconfigurable 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. Indeed, the final project associated with the program is close to research of significant interest to military applications.

The Naval Postgraduate School has a high-end reconfigurable computer, the SRC-6, with 10 Virtex-II FPGAs and two conventional processors. During the certificate program, students will access this system.

THE CURRICULUM

EC3840 Introduction to Computer Architecture (3-2)

Computer architecture and processor design, including the influences of implementation technology, cost, performance, levels of abstraction and instruction set/architecture design. Processor design and implementation, including the data path and the control unit. Buses and the memory hierarchy.

EC3820 Computer Systems (3-2)

A unified approach to the design of computer systems stressing the interacting processes implemented in hardware, software, and firmware. The elements of a multiprogramming system are introduced.

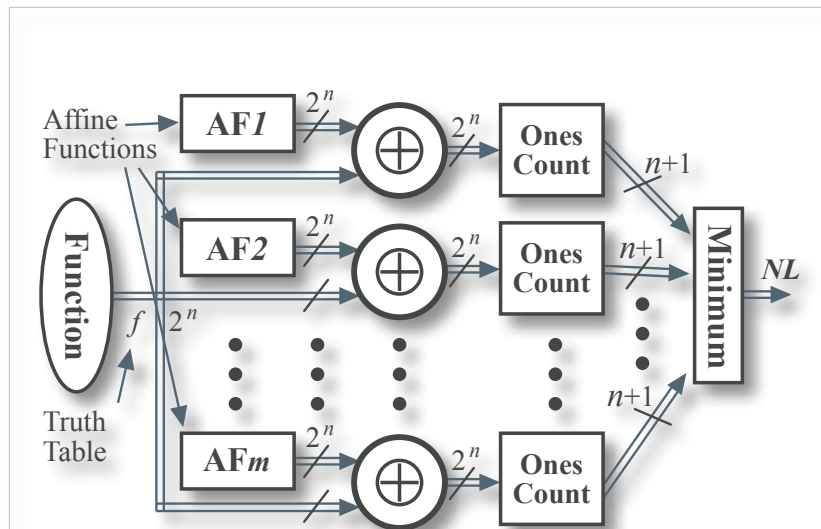
EC4820 Advanced Computer Architecture (3-2)

High performance computing, including reconfigurable computing. Techniques for improving processor, memory subsystem, and I/O subsystem performance, including pipelining and memory interleaving.

THE OUTCOMES

Upon completion of the Reconfigurable Computing Certificate Program, students will have the cognitive skills and abilities required to design and analyze reconfigurable computer systems by:

- Applying knowledge of programming and operating systems.
- Applying knowledge of FPGAs, reconfigurable computers, parallel processors and parallel algorithms gained through computer-based laboratory work.
- Applying knowledge of computer circuits and systems through hardware description languages.
- Applying knowledge gained from leading-edge computer-aided design tools.



Nonlinearity Circuit

Scalability

An important concept in reconfigurable computing is scalability. Circuits such as the one shown here must be easily scaled to the specific application. For example, here, the circuit's complexity increases exponentially with n , the scaling parameter. Students who complete the Reconfigurable Computing Certificate Program will gain an understanding of the importance of scaling and how to design systems that are easily scalable.

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Advance Your Career!

