Finalized SLOs for Computer Science & Engineering
Core Courses

EAC Criterion 3 Outcomes Supported:

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Version: 10 June 2010
CAC Criterion 3 Outcomes Supported:

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EECS 1010 FIRST YEAR DESIGN

STUDENT LEARNING OBJECTIVES

The student will be able to...
1. ......

EAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

CAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

COMMITTEE MEMBERS

Dr. Molyet (chair)
Dr. Kang
Dr. Carvalho

APPROVAL DATE

Version: 10 June 2010
STUDENT LEARNING OBJECTIVES

The student will be able to…

1. ......

EAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

CAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

COMMITTEE MEMBERS

Dr. Jamali (chair)
Dr. Molyet
Mr. Nowlin
Dr. Kaur

APPROVAL DATE

Version: 10 June 2010
EECS 1560 INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING

STUDENT LEARNING OBJECTIVES

The student will be able to...

1. ......

EAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

CAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

COMMITTEE MEMBERS

Dr. Thomas (chair)
Dr. Ledgard
Dr. Standley

APPROVAL DATE

Version: 10 June 2010
STUDENT LEARNING OBJECTIVES

The student will be able to…

1. ......

EAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

CAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

COMMITTEE MEMBERS

Dr. Heuring (chair)
Dr. Thomas

APPROVAL DATE
EECS 1580 NON-LINEAR DATA STRUCTURES

STUDENT LEARNING OBJECTIVES

The student will be able to...

1. ......

EAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

CAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

COMMITTEE MEMBERS

Dr. Miller (chair)
Dr. Thomas

APPROVAL DATE

Version: 10 June 2010
EECS 1590 DISCRETE STRUCTURES

STUDENT LEARNING OBJECTIVES

The student will be able to…
1. ......

EAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

CAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

COMMITTEE MEMBERS

Dr. Ledgard (chair)
Dr. Standley

APPROVAL DATE

Version: 10 June 2010
The student will be able to...

1. ....

**EAC OUTCOMES SUPPORTED**

Outcome  
Supported by SLOs

**CAC OUTCOMES SUPPORTED**

Outcome  
Supported by SLOs

**COMMITTEE MEMBERS**

Dr. Heuring (chair)  
Dr. Thomas  
Dr. Alam

**APPROVAL DATE**

Version: 10 June 2010
EECS 2300 ELECTRIC CIRCUITS

STUDENT LEARNING OBJECTIVES

The student will be able to...

1. Define voltage, current, energy and power in the context of an electric circuit
2. Define the terminal behavior of the basic linear circuit elements
3. Apply Kirchoff's laws to nodal and mesh analysis of a circuit
4. Apply Thevenin's and Norton's theorems to circuit analysis
5. Apply the voltage divider, current divider, superposition, and maximum-power transfer theorems to circuit analysis
6. Perform AC steady state circuit analysis using phasors
7. Calculate complex power in an AC system
8. Do transient analysis of first order circuits
10. Recognize physical circuit elements in the lab and assemble a circuit from a schematic diagram
11. Experimentally measure voltage, current and power
12. Produce a written lab report in a standard format, which includes a brief discussion of relevant theory

EAC OUTCOMES SUPPORTED

Outcome a  
Supported by SLOs 1 through 9

Outcome e  
Supported by SLOs 10 and 11

Outcome g  
Supported by SLO 12

CAC OUTCOMES SUPPORTED

None

COMMITTEE MEMBERS

Dr. King (chair)  
Mr. Nowlin  
Dr. Shenai

APPROVAL DATE

April 20, 2010
STUDENT LEARNING OBJECTIVES

The student will be able to…

1. ......

EAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

CAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

COMMITTEE MEMBERS

Dr. Miller (chair)
Dr. Heuring
Dr. Carvalho

APPROVAL DATE
STUDENT LEARNING OBJECTIVES

The student will be able to…

1. Describe the meaning of an embedded system, the reasons for the importance of embedded systems, and how computer engineering uses or benefits from embedded systems.
2. Understand how assembly language programs convert into executable code through assembler, linker, locator and loader for an embedded system environment.
3. Write assembly code for an embedded system to function as system kernel, to perform setup, initialization, and built-in system testing.
4. Understand role of modern computer engineering hardware and software tools in system development and how to use these tools to support the design methodology.
5. Develop an understanding of the differences between a microprocessor and a microcontroller in regards to the hardware/software interface for communication with external devices.
6. Design a memory subsystem with both read-only memory and random-access memory for a microprocessor, develop read-only memory compliant random-access memory testing program in relevant assembly language, and program read-only memory with the memory testing program.
7. Design an interface for a programmable input/output device such as universal synchronous-asynchronous receiver-transmitter and develop the device driver code in assembly/machine language.
8. Design an interface for a programmable interrupt controller and develop the code for device drivers in assembly/machine language.
9. Prototype a minimal system complete with microprocessor, both read-only and random-access memory, read-only memory resident random-access memory testing program, and system startup code developed in assembly or machine language.

EAC OUTCOMES SUPPORTED

Outcome a  
Supported by SLOs 3, 4, and 5

Outcome c  
Supported by SLOs 6, 7, and 8

Outcome k  
Supported by SLOs 2 and 9

CAC OUTCOMES SUPPORTED

Outcome a  
Supported by SLO 3

Outcome c  
Supported by SLOs 6, 7, and 8
Outcome i
Supported by SLOs 2, 4, and 9

COMMITTEE MEMBERS
Dr. Kaur (chair)
Dr. Serpen
Mr. Nowlin

APPROVAL DATE
April 08, 2010
EECS 3150 DATA COMMUNICATIONS

STUDENT LEARNING OBJECTIVES

The student will be able to...
1. .......

EAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

CAC OUTCOMES SUPPORTED

Outcome
Supported by SLOs

COMMITTEE MEMBERS

Dr. Miller (chair)
Dr. Kim
Dr. Carvalho

APPROVAL DATE
The student will be able to…

1. The student will be able to represent and classify signals and systems.
2. The student will be able to represent and apply singularity functions.
3. The student will be able to obtain the response of a continuous, linear, time-invariant, causal system by using convolution.
4. The student will be able to obtain the Fourier series expansion of a periodic signal and apply it to continuous, linear, time-invariant systems.
5. The student will be able to obtain and plot the Fourier transform for simple aperiodic continuous-time signals.
6. The student will be able to utilize the Laplace transform method to solve continuous, linear, time-invariant systems and to obtain transfer functions.
7. The student will be able to analyze continuous, linear time-invariant systems using state variable formulation and solve the resulting state equations.
8. The student will be able to convert a continuous-time signal to the discrete-time domain and reconstruct it using the sampling theorem.
9. The student will be able to utilize the z-transform method to solve linear discrete-time systems and to obtain transfer functions.
10. Use MATLAB software to implement the signal processing and system analysis techniques taught in the course.

EAC OUTCOMES SUPPORTED

Outcome a
Supported by SLOs 1 through 9
Outcome k
Supported by SLO 10

CAC OUTCOMES SUPPORTED

Outcome a
Supported by SLOs 1 through 9
Outcome i
Supported by SLO 10

COMMITTEE MEMBERS

Dr. Salari (chair)
Dr. Kaur
Dr. Kang

APPROVAL DATE

March 29, 2010

Version: 10 June 2010
The student will be able to…

1. Devise a variety of simple proofs.
2. Define what a Regular Language is and construct a finite state machine to recognize it.
3. Construct equivalent representations among Regular Languages, Regular Expressions, and Regular Grammars.
4. Develop a grammar defining the syntax of common programming languages.
5. Be able to formulate the equations for a simple stack-based machine.
6. Identify syntactic aspects of real programming languages that cannot be defined with a Context Free Grammar.
7. Understand the simple primitive mechanisms needed for all computations.
8. Identify the characteristics of problems for which no computational solution exists.

EAC OUTCOMES SUPPORTED
Outcome a
Supported by SLOs 1 through 8

CAC OUTCOMES SUPPORTED
Outcome a
Supported by SLOs 1 through 8

COMMITTEE MEMBERS
Dr. Carvalho (chair)
Dr. Ledgard

APPROVAL DATE
April 23, 2010
STUDENT LEARNING OBJECTIVES

The student will be able to…
1. Review the models for developing software projects
2. Learn the skills needed to become a software engineer.
3. Learn the roles and skills required for working as a team on a software project.
4. Work in a team to build a software product
5. Recognize and create a Functional Specification from a set of User Requirements.
6. Be able to define the properties of readable and reusable code.
7. Conduct a specification, design, or code review.
8. Make an effective oral presentation on a technical topic
9. Be knowledgeable of contemporary issues related to software.
10. Identify some of the software issues that one needs to study to become effective
11. Plan and execute lifecycle steps for developing a complex software product (major)

EAC OUTCOMES SUPPORTED

Outcome c
Supported by SLOs 1, 2, 3, 4, 5, 6, 7, and 11
Outcome d
Supported by SLOs 2, 3, 4, and 7
Outcome g
Supported by SLOs 7 and 8
Outcome i
Supported by SLO 10
Outcome j
Supported by SLOs 1, 8, and 9
Outcome k
Supported by SLOs 1 through 11

CAC OUTCOMES SUPPORTED

Outcome c
Supported by SLOs 1 through 12
Outcome d
Supported by SLOs 2, 3, 4, and 7
Outcome f
Supported by SLOs 7 and 8
Outcome h
Supported by SLO 10
Outcome i
Supported by SLOs 1, 2, 3, 4, 5, 6, 7, and 11
Outcome k
Supported by SLOs 1 through 11

Version: 10 June 2010
COMMITTEE MEMBERS

Dr. Ledgard (chair)
Dr. Carvalho

APPROVAL DATE

April 23, 2010
The student will be able to…

1. Design a complex system (or component or process) to realistic performance specifications in compliance with applicable engineering standards.
2. Build a prototype of a design and demonstrate that it meets performance specifications.
3. List and discuss several possible reasons for deviations between predicted and measured results from an experiment or design, and choose the most likely reason and justify the choice.
4. Identify the stages of team development and give examples of team behaviors that are characteristic of each stage.
5. Summarize effective strategies for dealing with a variety of interpersonal and communication problems that commonly arise in teamwork, choose the best of several given strategies for a specified problem, and justify the choice.
6. Function effectively on a team, with effectiveness being determined by instructor observation, peer ratings, and self-assessment.
7. Explain aspects of a project, process, or product related to specified engineering and non-engineering disciplines.
8. Given a job-related scenario that requires a decision with ethical implications, the student will be able to identify possible courses of action and discuss the pros and cons of each one, pick the best course of action and justify the decision.
9. Write an effective technical correspondence (i.e. abstract, executive summary, project report) or give an effective oral presentation.
10. Propose a solution or critique a proposed solution to an engineering problem, identifying possible negative global or societal consequences and recommending ways to minimize or avoid them.
11. Find relevant sources of information about a specified topic in the library and on the World Wide Web (or perform a full literature search).
12. Participate effectively in a team project and assess the strengths and weaknesses of the individual team members (including himself/herself) and the team as a unit.
13. Identify important contemporary regional, national, or global problems that involve engineering.
14. Propose and discuss ways engineers are contributing or might contribute to the solution of specified regional, national, and global problems.

EAC OUTCOMES SUPPORTED

Outcome c
Supported by SLOs 1through 3
Outcome d
Supported by SLOs 4, 5, 6, and 12
Outcome f
Supported by SLO 8
Outcome g
Supported by SLO 9
Outcome h
Supported by SLOs 7, 10, and 14
Outcome i
Supported by SLO 11
Outcome j
Supported by SLO 13
Outcome k
Supported by SLOs 1 through 3

CAC OUTCOMES SUPPORTED

Outcome c
Supported by SLOs 1 through 3
Outcome d
Supported by SLOs 4 through 7
Outcome e
Supported by SLOs 8, 10, and 14
Outcome f
Supported by SLO 9
Outcome g
Supported by SLOs 10 and 14
Outcome i
Supported by SLOs 1 through 3
Outcome j
Supported by SLOs 1 through 3
Outcome k
Supported by SLOs 1 and 2

COMMITTEE MEMBERS

Dr. Serpen (chair)
All EECS Faculty

APPROVAL DATE

June 3, 2010