

2008-2009 Assessment for Master's Degree Program
Fall 2008 - Spring 2009
Computer Science Dept.
Texas A&M University - Commerce

- 77% 77%** Program Objective #1 (PO1): Students will be able to demonstrate a broad knowledge of Computer Science which includes data structures, operating systems, computer programming skills, computer organization, algorithm design, and automata theory.
- 78% 85%** Program Objective #2 (PO2): Students will gain a substantial knowledge of one of the following Computer Science specialties: Database, Networking, Artificial Intelligence, Information Security, Computer Engineering.
- 80% 75%** Program Objective #3 (PO3): Students will demonstrate the ability to recognize, design and implement efficient software solutions to problems.
- N/A 87%** Program Objective #4 (PO4): Students will demonstrate knowledge and understanding of professional ethics and responsible behavior.
- 86% 80%** Program Objective #5 (PO5): Students will demonstrate the ability to communicate effectively and to work as a team.
- 85% 85%** Program Objective #6 (PO6): Students will become successful professionals able to gain Employment and/or to be accepted into a Computer Science Ph.D. program.

77% 77% **Program Objective#1 (PO1): Students will be able to demonstrate a broad knowledge of Computer Science which includes data structures, operating systems, computer programming skills, computer organization, algorithm design, and automata theory.**

Assessment will be measured through testing the following course objectives:

CSCI 515 Fundamental of Programming

60% 48% (CO515.1): To understand the internal representation of the various data types.

58% 80% (CO515.2): To examine the internal representation of two and three dimension arrays in C/C++.

28% 63% (CO515.3): To understand dynamic memory allocation, parameter passing, the use of pointers.

CSCI 516 Fundamental Concepts of Computer and Machine Organization

92% 89% (CO516.1) Numbering systems and conversions, Boolean functions.

89% 92% (CO516.2) Intro to Computer Organization: design logic; digital diagrams, and basic circuits and gates, and the link between Boolean functions, circuits, processor and Micro code.

92% 87% (CO516.3) Concepts of Machine Instructions, Assembly and linking, common interrupts.

88% 91% (CO516.4): Concepts of Jumps, flags, subroutines, procedures, stacks, stack parameters and frames..

90% 87% (CO516.5): Arrays, addressing modes and Floating Point memory management, indirect addressing.

87% 94% (CO516.6): Advanced procedures, local variables, stack parameters, strings.

CSCI 520 Information Structure and Algorithm Analysis.

15% 50% (CO520.1): To understand the concept of sparse matrices, stack and queues.

66% 42% (CO520.2): To examine the differences between linear and linked representation of stacks, queues, and ordered data.

58% 53% (CO520.3): To understand and implement tree structures and to compare various sorting algorithms.

CSCI528 Object Oriented Methods

89% 86% (CO528.1): Software Engineering Basics.

CSCI 530 Operating Systems <Taught in Fall Semester>

75% 0% (CO530.1) Understand the concepts, structures, and mechanisms of operating systems.

85% 0% (CO530.2) Understand memory management, virtual memory, swapping, paging algorithms, segmentation, and clock paging policies.

69% 0% (CO530.5) Understand concurrent processes and associated deadlock prevention, avoidance, detection, recovery methods, and the use of semaphores.

CSCI 532 Algorithm Design <Taught in Fall Semester>

90% 0% (CO532.1): To teach students how to analyze algorithms in order to determine their calculation complexity in the terms of Big Oh, Big theta and Omega. Recursions.

91% 0% (CO532.2): To teach sorting algorithms and their application: Insertion, Merge, Quick, and Shell Sort algorithms.

89% 0% (CO532.3): Probabilistic Analysis and Randomized algorithms and their applications to CS- Hiring Algorithm, Bins and Balls problems; Birthday paradox, Longest Streaks.

86% 0% (CO532.4): Binary search trees and optimal binary search trees, and their applications to large code development.

90% 0% (CO532.5): Dynamic programming problem- line scheduling, matrix chain multiplication, longest common subsequence and their practical applications.

86% 0%(CO532.6): Introduction to greedy algorithms – an activity selection problem and its application to resources planning.

CSCI 540 Computer Architecture

86% 89% (CO540.1): General purpose machines from different views. Instruction sets and classification of computers.

81% 82% (CO540.2): Cost and performance of a computer: evaluation metrics, Amdahl's law, principle of locality, and benchmarks.

86% 80% (CO540.3): Cache and memory organization: cache mapping and replace strategies, virtual memory and cache coherence.

78% 92% (CO540.4): Pipelining: performance issues, and pipelining hazards.

80% 77% (CO540.5): I/O system: hard drive, RAID technology, I/O performance and benchmarks.

CSCI Automata Theory <Taught in Spring Semester>

0% 85% (CO549.1): Understand the concept of languages and recursive definitions

0% 85% (CO549.8): Construct a context free grammar to define a context free language

0% 82% (CO549.11): Construct a push down automata for a language

0% 75% (CO549.12): Design and construct a Turing machine for any language

0% 70% (CO549.13): Design and construct a LR(1) parser for SmallG language

PO1 Average Score = 77% 77%

78% 85% Program Objective#2 (PO2): Students will gain a substantial knowledge of one of the following Computer Science specialties: Database, Networking, Artificial Intelligence, Information Security, Computer Engineering.

Assessment will be measured through testing the following course objectives:

CSCI 525 Introduction to Local Area Networking

68% 83% (CO525.1): To define and understand basic Data Communications, networking topologies, the OSI Model and the IEEE 802 standards.

CSCI 526 Databases Systems <Taught in Fall Semester>

85% 0% (CO526.1): Obtain current status of the state-of-the-art database design methodology in industry and academics.

80% 0% (CO526.5): Write SQL programs for effective data definition and manipulation.

80% 0% (CO526.6): Develop ER diagrams for logical design of database systems.

85% 0% (CO526.7): Implement a small scale database development project using commercially available DBMS tools.

CSCI 534 Networking II Routers and Switches

74% 83% (CO534.1): Using subnets and routing protocols, design and configure a router network.

79% 89% (CO534.2): Design and configure a switched network and VLANs.

76% 88% (CO534.3): Understand the concepts of an Access Control List and learn how to configure a router for ACLs.

CSCI 538 Artificial Intelligence <Not taught this reporting period>

0% 0% (CO538.1): To learn about general concepts in the field of artificial intelligence.

0% 0% (CO538.2): To learn about the current fields of research in artificial intelligence.

0% 0% (CO538.3): To work on an on-going class project to create a computer program that learns from its users.

CSCI 539 Expert Systems <Not taught this reporting period>

0% 0% (CO539.1): To learn about the general concepts and deployment of expert systems.

0% 0% (CO539.2): To create an expert systems project using a pre-developed software tool (environment) or in any language of your choice.

CSCI 553 Networking III – Unix Based Networks <Taught in Spring Semester>

0% 85% (CO553.5): Become familiar with sockets, including programming both connection-oriented TCP and connectionless UDP sockets.

0% 75% (CO553.6): Be able to create simple TCP Client/Server applications using sockets in a High-level language/toolbox such as Java, Perl, Python or C++.

CSCI 563 Fundamentals of Information Security & Assurance <Taught in Spring Semester>

0% 91% (CO 563.1): State the basic concepts in information security, including security policies, security models, and various security mechanisms.

0% 92% (CO563.2): Understand the issues of network communications such as service, confidentiality, authentication, reliability, access control, and availability.

0% 79% (CO563.3): State threats and sources of attacks in network security.

0% 86% (CO563.4): Explain how to use cryptography to protect information and how to choose an appropriate encryption method.

0% 82% (CO563.5): State main strategies to secure Windows and Linux computers.

0% 89% (CO563.6): Understand limitation of the current security technology and able to choose proper security mechanisms.

CSCI 581 Computer and Network Security <Not taught this Assessment period>

0% 0% (CO581.1): Students will be able to describe and discuss information security and network security basics.

0% 0% (CO581.2): Students will be able to describe and discuss cryptography basics.

0% 0% (CO581.3): Students will be able to describe and discuss authentication in network applications.

0% 0% (CO581.4): Students will be able to describe and discuss electronic mail security.

0% 0% (CO581.5): Students will be able to describe and discuss IP security.

0% 0% (CO581.6): Students will be able to describe and discuss network security applications that implement the above capabilities.

PO 2 Average Score = 78% 85%

80% 75% Objective#3 (PO3): Students will demonstrate the ability to recognize, design and implement efficient software solutions to problems.

CSCI 520 Information Structure and Algorithm Analysis.

15% 50% (CO520.1): To understand the concept of sparse matrices, stack and queues.

66% 42% (CO520.2): To examine the differences between linear and linked representation of stacks, queues, and ordered data.

58% 53% (CO520.3): To understand and implement tree structures and to compare various sorting algorithms.

CSCI527 Advanced Databases and Data Mining

85% 86% (CO527.1): Understand current status of the state-of-the-art data mining methodology in industry and academics.

75% 75% (CO527.3): Learn and use effective tools for web navigation and program integration management.

85% 70% (CO527.5): Construct programs for capturing association rules.

80% 85% (CO527.6): Write programs for trend analysis using statistical data mining techniques.

CSCI 528 Object Oriented Methods

93% 84% (CO528.2): Classes basics/advanced.

92% 90% (CO528.3): Overloading.

89% 91% (CO528.4): Polymorphism/Virtual function.

87% 87% (CO528.5): Template, Exception.

85% 85% (CO528.6): UML.

CSCI 532 Algorithm Design <Taught in Fall Semester>

90% 0% (CO532.1): To teach students how to analyze algorithms in order to determine their calculation complexity in the terms of Big Oh, Big theta and Omega. Recursions.

91% 0% (CO532.2): To teach sorting algorithms and their application: Insertion, Merge, Quick, and Shell Sort algorithms.

89% 0% (CO532.3): Probabilistic Analysis and Randomized algorithms and their applications to CS- Hiring Algorithm, Bins and Balls problems; Birthday paradox, Longest Streaks.

86% 0% (CO532.4): Binary search trees and optimal binary search trees, and their applications to large code development.

90% 0% (CO532.5): Dynamic programming problem- line scheduling, matrix chain multiplication, longest common subsequence and their practical applications.

86% 0% (CO532.6): Introduction to greedy algorithms – an activity selection problem and its application

to resources planning.

CSCI 581 Computer and Network Security <Not taught this reporting period>

0% 0% (CO581.2): Students will be able to describe and discuss cryptography basics.

PO3 Average Score = 80% 75%

0% 87% Objective #4 (PO4): Students will demonstrate knowledge and understanding of Professional ethics and responsible behavior.

CSCI 563 Fundamentals of Information Security & Assurance <Taught this Spring Semester>

0% 91% (CO 563.1): State the basic concepts in information security, including security policies, security models, and various security mechanisms.

0% 92% (CO563.2): Understand the issues of network communications such as service, confidentiality, authentication, reliability, access control, and availability.

0% 79% (CO563.3): State threats and sources of attacks in network security.

CSCI 581 Computer and Network Security <Not taught this reporting period>

0% 0% (CO581.1): Students will be able to describe and discuss information security and network security basics.

PO4 Average 0% 87%

86% 80% Objective #5 (PO5): Students will demonstrate the ability to communicate effectively and to work as a team.

CSCI 526 Database Systems <Taught in Fall Semester>

80% 0% (CO526.2): Master the technique for team play and teamwork for small scale database projects through brain storming and joint requirement planning.

90% 0% (CO526.10): Be able to demo and present the initial, intermediate, and final delivery of the database design project.

CSCI 527 Intelligent Database Systems

80% 80% (CO527.2): Obtain the technique for team play and teamwork for large intelligent database projects through brain storming and joint requirement planning.

CSCI 528 Object Oriented Methods <Spring section did not present projects>

95% 0% (CO528.7): Integration Project.

PO5 Average Score = 86% 80%

85% 85% Objective #6 (PO6): Students will become successful professionals able to gain employment and/or to be accepted into a Computer Science Ph.D. program.

Assessed by on-going follow-up surveys and letters of feedback from students..