Assessment Plan

2021-22

GEORGE FOX
UNIVERSITY

IND - Computer Science

University Mission: George Fox University, a Christ-centered community, prepares students spiritually, academically, and professionally to think with clarity, act with integrity, and serve with passion.

Program Mission: The mission of the Computer Science program is to educate students within a Christian environment in the disciplines of computer science and information systems. Department faculty are committed to maintaining a curriculum that emphasizes the foundations and basic principles of computer science and information systems while exposing students to practical applications and current computing hardware and software technology.

Alignment With GFU Mission: The mission of the Computer Science program closely aligns with and contributes to the core theme of excellence in professional preparation. It also aligns with the core themes of Christ-centered community, through learning to act with integrity, and local and global engagement, through the application of leadership skills and abilities on diverse teams of skilled individuals in high-technology fields.

Degree Outcomes: Computer science graduates will have:

An ability to decompose, understand, and solve problems through programming by applying foundational principles of computer science and mathematics

An ability to identify, implement, and apply appropriate data structures, algorithms, and design patterns to solve complex problems

An ability to apply software engineering processes and methodologies to requirements gathering, design, implementation, and testing activities to produce solutions that meet specified functional and non-functional requirements

An ability to recognize professional and ethical responsibilities in software, network, and system engineering scenarios, and make informed decisions that consider security, privacy, safety, data integrity, and cost

An ability to communicate effectively with a wide range of audiences with varying degrees of technical and domain expertise, through written and spoken communication

An ability to function effectively on a diverse team whose members collectively provide leadership, create a collaborative and inclusive environment, establish short- and long-term goals, plan tasks, assess progress, and meet objectives

An ability to collaborate and contribute to both small- and large-scale projects, regardless of geographic proximity to other team members, through the use of distributed version control, communication, and project management tools

An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Assessment Lead: Brian Snider

Outcome: 1.1) Application of Foundational Principles

Students decompose, understand, and solve problems through programming by applying foundational principles of computer science and mathematics

Outcome Status: Active

Assessment Tools

Exam/Quiz - In Course - CSIS 202 midterm and final exams (Active)

IND - Computer Science

Target: 70% of declared Computer Science majors average 80% or higher on midterm and final exams in CSIS 202 Introduction to Computer Science II
Schedule for Data Collection: Annually by May 15
Schedule for Data Analysis & Reporting: Annually by August 15
Related Documents:
CSIS 202 Exam Scores

Exam/Quiz - National/State - ETS® Major Field Test (MFT) for Computer Science (Active)

Target: 80% of graduating Computer Science majors achieve a total score at or above the national median score on the MFT
Schedule for Data Collection: Annually by May 15
Schedule for Data Analysis & Reporting: Annually by August 15
Related Documents:
2015 CS MFT Comparative Data Guide
ETS® Major Field Test for Computer Science
CS MFT Scores

Exam/Quiz - In Course - CSIS 201 midterm and final exams (Active)

Target: 70% of declared Computer Science majors average 80% or higher on midterm and final exams in CSIS 201 Introduction to Computer Science I
Schedule for Data Collection: Annually by May 15
Schedule for Data Analysis & Reporting: Annually by August 15
Related Documents:
CSIS 201 Exam Scores

Related Courses

CSIS 201 - Intro to Computer Science - (1 - Introduced)

CSIS 202 - Intro to Computer Science II - (2 - Reinforced, 3 - Assessed)

CSIS 304 - Web-Based Programming - (2 - Reinforced, 3 - Assessed)

CSIS 310 - Data Structures - (2 - Reinforced, 3 - Assessed)

CSIS 314 - Client-Server Systems - (2 - Reinforced, 3 - Assessed)

CSIS 321 - Software Engineering - (2 - Reinforced, 3 - Assessed)

CSIS 340 - Database Systems - (2 - Reinforced)

CSIS 350 - Data Communications & Networks - (2 - Reinforced)

CSIS 360 - Comp Architect/Assembly Langua - (2 - Reinforced, 3 - Assessed)

CSIS 370 - Object-Oriented Analysis & Design - (2 - Reinforced, 3 - Assessed)

CSIS 420 - Structures of Program Language - (2 - Reinforced, 3 - Assessed)

CSIS 430 - Analysis of Algorithms - (2 - Reinforced)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced, 3 - Assessed)

CSIS 440 - Artificial Intelligence (AI) - (2 - Reinforced, 3 - Assessed)

IND - Computer Science

CSIS 450 - Network Administration - (2 - Reinforced)
CSIS 460 - Operating Systems - (2 - Reinforced)
CSIS 475 - Field Experience - (2 - Reinforced, 3 - Assessed)
CSIS 480 - Principles of Compiler Design - (2 - Reinforced, 3 - Assessed)
CSIS 485 - Selected Topics - (2 - Reinforced, 3 - Assessed)
CSIS 490 - Applied Software Development - (2 - Reinforced, 3 - Assessed)
CSIS 495 - Individualized Study - (2 - Reinforced, 3 - Assessed)
CSIS 312 - Computer Security and Digital Forensics - (2 - Reinforced, 3 - Assessed)
CSIS 390 - Emerging Mobile Technologies - (2 - Reinforced, 3 - Assessed)
CSIS 413 - Advanced Security - (2 - Reinforced, 3 - Assessed)
CSIS 451 - Cyber Defense - (2 - Reinforced, 3 - Assessed)
CSIS 473 - Secure Software - (2 - Reinforced, 3 - Assessed)
ENGR 481 - Servant Engineering I - (2 - Reinforced, 3 - Assessed)
ENGR 482 - Servant Engineering II - (2 - Reinforced, 3 - Assessed)
ENGR 481 - Senior Design I - (2 - Reinforced, 3 - Assessed)
ENGR 482 - Senior Design II - (2 - Reinforced, 3 - Assessed)

Related Goals

IND - Computer Science
Program Goal - 1) Students master the foundations and basic principles of computer science
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 1.2) Data Structures

Students identify, implement, and apply appropriate data structures to solve complex problems
Outcome Status: Active

Assessment Tools

Capstone Assignment - CSIS 310 binary tree programming assignment (Active)
Target: 80% of declared Computer Science majors pass 80% of the unit tests on the binary tree programming assignment in CSIS 310 Data Structures **Schedule for Data Collection:** Annually by May 15 **Schedule for Data Analysis & Reporting:** Annually by August 15 **Related Documents:** CSIS 310 Binary Tree Unit Tests

IND - Computer Science

Exam/Quiz - In Course - CSIS 310 midterm and final exams (Active)

Target: 80% of declared Computer Science majors average 80% or higher on midterm and final exams in CSIS 310 Data Structures
Schedule for Data Collection: Annually by May 15
Schedule for Data Analysis & Reporting: Annually by August 15
Related Documents:
[CSIS 310 Exam Scores](#)

Related Courses

CSIS 202 - Intro to Computer Science II - (1 - Introduced)

CSIS 304 - Web-Based Programming - (2 - Reinforced, 3 - Assessed)

CSIS 310 - Data Structures - (2 - Reinforced, 3 - Assessed)

CSIS 314 - Client-Server Systems - (2 - Reinforced, 3 - Assessed)

CSIS 340 - Database Systems - (2 - Reinforced)

CSIS 350 - Data Communications & Networks - (2 - Reinforced)

CSIS 360 - Comp Architect/Assembly Langua - (2 - Reinforced, 3 - Assessed)

CSIS 370 - Object-Oriented Analysis & Design - (2 - Reinforced, 3 - Assessed)

CSIS 420 - Structures of Program Language - (2 - Reinforced, 3 - Assessed)

CSIS 430 - Analysis of Algorithms - (2 - Reinforced)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced, 3 - Assessed)

CSIS 440 - Artificial Intelligence (AI) - (2 - Reinforced, 3 - Assessed)

CSIS 460 - Operating Systems - (2 - Reinforced)

CSIS 480 - Principles of Compiler Design - (2 - Reinforced, 3 - Assessed)

CSIS 485 - Selected Topics - (2 - Reinforced)

CSIS 490 - Applied Software Development - (2 - Reinforced, 3 - Assessed)

CSIS 495 - Individualized Study - (2 - Reinforced)

CSIS 390 - Emerging Mobile Technologies - (2 - Reinforced)

CSIS 413 - Advanced Security - (2 - Reinforced)

CSIS 451 - Cyber Defense - (2 - Reinforced)

CSIS 473 - Secure Software - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Servant Engineering I - (2 - Reinforced)

ENGR 482 - Servant Engineering II - (2 - Reinforced)

ENGR 481 - Senior Design I - (2 - Reinforced)

IND - Computer Science

ENGR 482 - Senior Design II - (2 - Reinforced)

Related Goals

IND - Computer Science
Program Goal - 1) Students master the foundations and basic principles of computer science
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 1.3) Algorithms

Students identify, implement, and apply appropriate algorithms to solve complex problems

Outcome Status: Active

Assessment Tools

Capstone Assignment - CSIS 310 binary tree programming assignment (Active)
Target: 80% of declared Computer Science majors pass 100% of the tree traversal unit tests on the binary tree programming assignment in CSIS 310 Data Structures **Schedule for Data Collection:** Annually by May 15 **Schedule for Data Analysis & Reporting:** Annually by August 15 **Related Documents:** CSIS 310 Binary Tree Traversal Unit Tests

Exam/Quiz - In Course - CSIS 430 midterm and final exams (Active)
Target: 80% of declared Computer Science majors average 70% or higher on midterm and final exams in CSIS 430 Analysis of Algorithms **Schedule for Data Collection:** Annually by May 15 **Schedule for Data Analysis & Reporting:** Annually by August 15 **Related Documents:** CSIS 430 Exam Scores

Related Courses

CSIS 201 - Intro to Computer Science - (1 - Introduced)

CSIS 202 - Intro to Computer Science II - (2 - Reinforced)

CSIS 300 - Numerical Methods - (2 - Reinforced, 3 - Assessed)

CSIS 304 - Web-Based Programming - (2 - Reinforced)

CSIS 310 - Data Structures - (2 - Reinforced, 3 - Assessed)

CSIS 314 - Client-Server Systems - (2 - Reinforced, 3 - Assessed)

CSIS 340 - Database Systems - (2 - Reinforced)

CSIS 350 - Data Communications & Networks - (2 - Reinforced)

CSIS 360 - Comp Architect/Assembly Langua - (2 - Reinforced, 3 - Assessed)

IND - Computer Science

CSIS 370 - Object-Oriented Analysis & Design - (2 - Reinforced)

CSIS 420 - Structures of Program Language - (2 - Reinforced, 3 - Assessed)

CSIS 430 - Analysis of Algorithms - (2 - Reinforced, 3 - Assessed)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced, 3 - Assessed)

CSIS 440 - Artificial Intelligence (AI) - (2 - Reinforced, 3 - Assessed)

CSIS 460 - Operating Systems - (2 - Reinforced)

CSIS 480 - Principles of Compiler Design - (2 - Reinforced, 3 - Assessed)

CSIS 485 - Selected Topics - (2 - Reinforced)

CSIS 490 - Applied Software Development - (2 - Reinforced)

CSIS 495 - Individualized Study - (2 - Reinforced)

CSIS 473 - Secure Software - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Servant Engineering I - (2 - Reinforced)

ENGR 482 - Servant Engineering II - (2 - Reinforced)

ENGR 481 - Senior Design I - (2 - Reinforced)

ENGR 482 - Senior Design II - (2 - Reinforced)

Related Goals

IND - Computer Science
Program Goal - 1) Students master the foundations and basic principles of computer science
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 1.4) Design Patterns

Students identify, implement, and apply appropriate design patterns to solve complex problems

Outcome Status: Active

Assessment Tools

Capstone Assignment - CSIS 202 store inventory programming assignment (Active)

Target: 80% of declared Computer Science majors pass 100% of the static factory unit tests on the store inventory programming assignment in CSIS 202 Introduction to Computer Science II
Schedule for Data Collection: Annually by May 15
Schedule for Data Analysis & Reporting: Annually by August 15
Related Documents:
[CSIS 202 Store Inventory Static Factory Unit Tests](#)

Capstone Assignment - CSIS 310 array list programming assignment (Active)

Target: 80% of declared Computer Science majors pass 100% of the iterable interface unit tests on the array list programming

IND - Computer Science

assignment in CSIS 310 Data Structures
Schedule for Data Collection: Annually by May 15
Schedule for Data Analysis & Reporting: Annually by August 15
Related Documents:
[CSIS 310 Array List Iterable Interface Implementation](#)

Exam/Quiz - In Course - CSIS 370 final exam (Active)
Target: 80% of declared Computer Science majors average 70% or higher on final exam in CSIS 370 Object-Oriented Analysis and Design **Schedule for Data Collection:** Annually by May 15 **Schedule for Data Analysis & Reporting:** Annually by August 15 **Related Documents:** [CSIS 370 Exam Scores](#)

Related Courses

CSIS 202 - Intro to Computer Science II - (1 - Introduced, 3 - Assessed)

CSIS 304 - Web-Based Programming - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 310 - Data Structures - (2 - Reinforced, 3 - Assessed)

CSIS 314 - Client-Server Systems - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 340 - Database Systems - (2 - Reinforced)

CSIS 350 - Data Communications & Networks - (2 - Reinforced)

CSIS 360 - Comp Architect/Assembly Langua - (2 - Reinforced)

CSIS 370 - Object-Oriented Analysis & Design - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 420 - Structures of Program Language - (2 - Reinforced)

CSIS 430 - Analysis of Algorithms - (2 - Reinforced)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced, 3 - Assessed)

CSIS 480 - Principles of Compiler Design - (2 - Reinforced, 3 - Assessed)

CSIS 485 - Selected Topics - (2 - Reinforced)

CSIS 490 - Applied Software Development - (2 - Reinforced)

CSIS 495 - Individualized Study - (2 - Reinforced)

ENGR 481 - Servant Engineering I - (2 - Reinforced)

ENGR 482 - Servant Engineering II - (2 - Reinforced)

Related Goals

IND - Computer Science
Program Goal - 1) Students master the foundations and basic principles of computer science

IND - Computer Science

Outcome: 2.1) Command Line Interface Utilities

Students design, implement, and test a command line interface-based utility application

Outcome Status: Active

Assessment Tools

Capstone Assignment - CSIS 310 random writer programming assignment (Active)
Target: 90% of declared Computer Science majors earn a 70% or higher score on the random writer programming assignment in CSIS 310 Data Structures **Schedule for Data Collection:** Annually on May 15 **Schedule for Data Analysis & Reporting:** Annually on August 15 **Related Documents:** CSIS 310 Random Writer Scores

Group Project - CSIS 321 group project (Active)
Target: 100% of declared Computer Science majors deliver a functional command line utility program for the group project assignment in CSIS 321 Software Engineering **Schedule for Data Collection:** Annually by May 15 **Schedule for Data Analysis & Reporting:** Annually by August 15 **Related Documents:** CSIS 321 Group Projects

Related Courses

CSIS 201 - Intro to Computer Science - (1 - Introduced, 3 - Assessed)

CSIS 202 - Intro to Computer Science II - (2 - Reinforced)

CSIS 310 - Data Structures - (2 - Reinforced, 3 - Assessed)

CSIS 321 - Software Engineering - (2 - Reinforced, 3 - Assessed)

CSIS 340 - Database Systems - (1 - Introduced)

CSIS 350 - Data Communications & Networks - (2 - Reinforced)

CSIS 360 - Comp Architect/Assembly Langua - (2 - Reinforced)

CSIS 370 - Object-Oriented Analysis & Design - (2 - Reinforced, 3 - Assessed)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced, 3 - Assessed)

CSIS 450 - Network Administration - (2 - Reinforced, 3 - Assessed)

CSIS 460 - Operating Systems - (2 - Reinforced, 3 - Assessed)

CSIS 480 - Principles of Compiler Design - (2 - Reinforced, 3 - Assessed)

CSIS 312 - Computer Security and Digital Forensics - (1 - Introduced)

CSIS 390 - Emerging Mobile Technologies - (2 - Reinforced)

IND - Computer Science

CSIS 413 - Advanced Security - (2 - Reinforced)

CSIS 451 - Cyber Defense - (2 - Reinforced)

CSIS 473 - Secure Software - (2 - Reinforced)

Related Goals

IND - Computer Science
Program Goal - 2) Students are exposed to practical applications of computer science

Outcome: 2.2) Full-Stack Web Applications

Students design, implement, and deploy a full-stack, web-based application

Outcome Status: Active

Assessment Tools

Capstone Assignment - CSIS 314 final project (Active)
Target: 90% of declared Computer Science majors earn a 70% or higher score on the final project in CSIS 314 Client-Server Systems   **Schedule for Data Collection:** Annually by May 15   **Schedule for Data Analysis & Reporting:** Annually by August 15   **Related Documents:**   [CSIS 314 Final Projects](#)

Related Courses

CSIS 304 - Web-Based Programming - (1 - Introduced)

CSIS 314 - Client-Server Systems - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 340 - Database Systems - (1 - Introduced)

CSIS 440 - Artificial Intelligence (AI) - (2 - Reinforced)

CSIS 450 - Network Administration - (2 - Reinforced)

CSIS 475 - Field Experience - (2 - Reinforced)

CSIS 490 - Applied Software Development - (2 - Reinforced)

CSIS 312 - Computer Security and Digital Forensics - (1 - Introduced)

CSIS 413 - Advanced Security - (2 - Reinforced)

CSIS 473 - Secure Software - (2 - Reinforced)

ENGR 481 - Senior Design I - (2 - Reinforced)

ENGR 482 - Senior Design II - (2 - Reinforced)

IND - Computer Science

Related Goals

IND - Computer Science
Program Goal - 2) Students are exposed to practical applications of computer science
Program Goal - 3) Students are exposed to current computing hardware and software technologies
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 2.3) Service Projects

Students research, design, implement, and present technology-based solutions to real-world problems in service to a specific people group or human need

Outcome Status: Active

Assessment Tools

Group Project - ENGR 381/382 course project (Active)
Target: 100% of declared Computer Science majors earn a passing grade or better in ENGR 381 Servant Engineering I and ENGR 382 Servant Engineering II **Schedule for Data Collection:** Annually by May 15 **Schedule for Data Analysis & Reporting:** Annually by August 15 **Related Documents:** ENGR 381/382 Group Projects

Related Courses

CSIS 321 - Software Engineering - (1 - Introduced)

CSIS 450 - Network Administration - (2 - Reinforced)

CSIS 475 - Field Experience - (2 - Reinforced)

CSIS 490 - Applied Software Development - (2 - Reinforced)

ENGR 481 - Servant Engineering I - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

ENGR 482 - Servant Engineering II - (2 - Reinforced, 3 - Assessed)

Related Goals

IND - Computer Science
Program Goal - 2) Students are exposed to practical applications of computer science
Program Goal - 3) Students are exposed to current computing hardware and software technologies
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 2.4) Large-Scale Industrial Solutions

Students gather requirements for, design, implement, test, and deploy solutions for large-scale projects to industry clients

IND - Computer Science

Assessment Tools

Group Project - ENGR 481/482 course project (Active)
Target: 100% of declared Computer Science majors earn a passing grade or better in ENGR 481 Senior Design I and ENGR 482 Senior Design II **Schedule for Data Collection:** Annually by May 15 **Schedule for Data Analysis & Reporting:** Annually by August 15 **Related Documents:** ENGR 481/482 Group Projects

Related Courses

CSIS 321 - Software Engineering - (1 - Introduced)
CSIS 340 - Database Systems - (1 - Introduced)
CSIS 350 - Data Communications & Networks - (2 - Reinforced, 3 - Assessed)
CSIS 434 - Parallel & Distributed Computing - (1 - Introduced)
CSIS 450 - Network Administration - (2 - Reinforced)
CSIS 475 - Field Experience - (2 - Reinforced)
CSIS 490 - Applied Software Development - (2 - Reinforced)
CSIS 312 - Computer Security and Digital Forensics - (1 - Introduced)
CSIS 413 - Advanced Security - (1 - Introduced, 2 - Reinforced)
CSIS 451 - Cyber Defense - (1 - Introduced, 2 - Reinforced)
ENGR 481 - Servant Engineering I - (1 - Introduced)
ENGR 482 - Servant Engineering II - (1 - Introduced)
ENGR 481 - Senior Design I - (2 - Reinforced)
ENGR 482 - Senior Design II - (2 - Reinforced)

Related Goals

IND - Computer Science
Program Goal - 2) Students are exposed to practical applications of computer science
Program Goal - 3) Students are exposed to current computing hardware and software technologies
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 3.1) Computer Architectures

Students demonstrate understanding of modern computing architectures

Outcome Status: Active

IND - Computer Science

Related Courses

CSIS 304 - Web-Based Programming - (1 - Introduced)

CSIS 314 - Client-Server Systems - (1 - Introduced, 2 - Reinforced)

CSIS 321 - Software Engineering - (1 - Introduced)

CSIS 340 - Database Systems - (1 - Introduced)

CSIS 350 - Data Communications & Networks - (1 - Introduced, 2 - Reinforced)

CSIS 360 - Comp Architect/Assembly Langua - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 420 - Structures of Program Language - (2 - Reinforced)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced, 3 - Assessed)

CSIS 450 - Network Administration - (2 - Reinforced)

CSIS 460 - Operating Systems - (2 - Reinforced, 3 - Assessed)

CSIS 312 - Computer Security and Digital Forensics - (1 - Introduced)

CSIS 390 - Emerging Mobile Technologies - (2 - Reinforced)

CSIS 413 - Advanced Security - (2 - Reinforced)

CSIS 451 - Cyber Defense - (2 - Reinforced)

CSIS 473 - Secure Software - (2 - Reinforced)

ENGR 481 - Senior Design I - (2 - Reinforced)

ENGR 482 - Senior Design II - (2 - Reinforced)

Related Goals

IND - Computer Science
Program Goal - 3) Students are exposed to current computing hardware and software technologies

Outcome: 3.2) Parallel Architectures

Students demonstrate understanding of and implement parallelized software applications for parallel computing architectures

Outcome Status: Active

Related Courses

CSIS 340 - Database Systems - (1 - Introduced)

CSIS 360 - Comp Architect/Assembly Langua - (1 - Introduced)

CSIS 434 - Parallel & Distributed Computing - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

IND - Computer Science

| CSIS 460 - Operating Systems - (2 - Reinforced, 3 - Assessed) |

Related Goals

| IND - Computer Science |
| **Program Goal -** 3) Students are exposed to current computing hardware and software technologies |

Outcome: 3.3) Operating Systems

Students demonstrate understanding of foundational principles of modern operating systems

Outcome Status: Active

Related Courses

| CSIS 201 - Intro to Computer Science - (1 - Introduced) |

| CSIS 202 - Intro to Computer Science II - (2 - Reinforced) |

| CSIS 310 - Data Structures - (1 - Introduced) |

| CSIS 314 - Client-Server Systems - (1 - Introduced) |

| CSIS 340 - Database Systems - (1 - Introduced) |

| CSIS 350 - Data Communications & Networks - (1 - Introduced) |

| CSIS 360 - Comp Architect/Assembly Langua - (1 - Introduced, 3 - Assessed) |

| CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced, 3 - Assessed) |

| CSIS 450 - Network Administration - (2 - Reinforced) |

| CSIS 460 - Operating Systems - (1 - Introduced, 2 - Reinforced, 3 - Assessed) |

| CSIS 312 - Computer Security and Digital Forensics - (1 - Introduced) |

| CSIS 390 - Emerging Mobile Technologies - (2 - Reinforced) |

| CSIS 413 - Advanced Security - (2 - Reinforced) |

| CSIS 451 - Cyber Defense - (2 - Reinforced) |

| CSIS 473 - Secure Software - (2 - Reinforced, 3 - Assessed) |

| ENGR 481 - Senior Design I - (2 - Reinforced) |

| ENGR 482 - Senior Design II - (2 - Reinforced) |

Related Goals

| IND - Computer Science |
| **Program Goal -** 3) Students are exposed to current computing hardware and software technologies |

IND - Computer Science

Outcome: 3.4) Programming Languages

Students implement correct solutions to complex programming problems using a variety of modern programming languages

Outcome Status: Active

Related Courses

CSIS 201 - Intro to Computer Science - (1 - Introduced, 3 - Assessed)

CSIS 202 - Intro to Computer Science II - (2 - Reinforced, 3 - Assessed)

CSIS 304 - Web-Based Programming - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 310 - Data Structures - (2 - Reinforced, 3 - Assessed)

CSIS 314 - Client-Server Systems - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 340 - Database Systems - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 350 - Data Communications & Networks - (1 - Introduced)

CSIS 360 - Comp Architect/Assembly Langua - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 370 - Object-Oriented Analysis & Design - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 420 - Structures of Program Language - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 430 - Analysis of Algorithms - (2 - Reinforced, 3 - Assessed)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced, 3 - Assessed)

CSIS 440 - Artificial Intelligence (AI) - (2 - Reinforced, 3 - Assessed)

CSIS 450 - Network Administration - (2 - Reinforced, 3 - Assessed)

CSIS 460 - Operating Systems - (2 - Reinforced, 3 - Assessed)

CSIS 475 - Field Experience - (2 - Reinforced)

CSIS 485 - Selected Topics - (2 - Reinforced, 3 - Assessed)

CSIS 490 - Applied Software Development - (2 - Reinforced, 3 - Assessed)

CSIS 473 - Secure Software - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Servant Engineering I - (2 - Reinforced)

ENGR 482 - Servant Engineering II - (2 - Reinforced)

ENGR 481 - Senior Design I - (2 - Reinforced)

ENGR 482 - Senior Design II - (2 - Reinforced)

Related Goals

IND - Computer Science

IND - Computer Science
Program Goal - 3) Students are exposed to current computing hardware and software technologies
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 3.5) Version Control Systems

Students use a modern, distributed version control system to complete individual and group projects
Outcome Status: Active

Related Courses

CSIS 201 - Intro to Computer Science - (1 - Introduced)

CSIS 202 - Intro to Computer Science II - (2 - Reinforced)

CSIS 304 - Web-Based Programming - (2 - Reinforced, 3 - Assessed)

CSIS 310 - Data Structures - (2 - Reinforced, 3 - Assessed)

CSIS 314 - Client-Server Systems - (2 - Reinforced, 3 - Assessed)

CSIS 321 - Software Engineering - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 370 - Object-Oriented Analysis & Design - (2 - Reinforced, 3 - Assessed)

CSIS 420 - Structures of Program Language - (2 - Reinforced)

CSIS 430 - Analysis of Algorithms - (2 - Reinforced, 3 - Assessed)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced, 3 - Assessed)

CSIS 440 - Artificial Intelligence (AI) - (2 - Reinforced, 3 - Assessed)

CSIS 460 - Operating Systems - (2 - Reinforced, 3 - Assessed)

CSIS 475 - Field Experience - (2 - Reinforced)

CSIS 485 - Selected Topics - (2 - Reinforced, 3 - Assessed)

CSIS 490 - Applied Software Development - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Servant Engineering I - (2 - Reinforced)

ENGR 482 - Servant Engineering II - (2 - Reinforced)

ENGR 481 - Senior Design I - (2 - Reinforced, 3 - Assessed)

ENGR 482 - Senior Design II - (2 - Reinforced, 3 - Assessed)

Related Goals

IND - Computer Science
Program Goal - 3) Students are exposed to current computing hardware and software technologies

IND - Computer Science

Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 3.6) Web and Network Technologies

Students implement solutions using modern web and networking technologies

Outcome Status: Active

Related Courses

CSIS 304 - Web-Based Programming - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 314 - Client-Server Systems - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 321 - Software Engineering - (1 - Introduced)

CSIS 340 - Database Systems - (1 - Introduced)

CSIS 350 - Data Communications & Networks - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 434 - Parallel & Distributed Computing - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 450 - Network Administration - (2 - Reinforced, 3 - Assessed)

CSIS 475 - Field Experience - (2 - Reinforced)

CSIS 485 - Selected Topics - (2 - Reinforced)

CSIS 490 - Applied Software Development - (2 - Reinforced)

CSIS 312 - Computer Security and Digital Forensics - (2 - Reinforced)

CSIS 390 - Emerging Mobile Technologies - (2 - Reinforced)

CSIS 413 - Advanced Security - (2 - Reinforced)

CSIS 451 - Cyber Defense - (2 - Reinforced)

CSIS 473 - Secure Software - (2 - Reinforced)

ENGR 481 - Senior Design I - (2 - Reinforced)

ENGR 482 - Senior Design II - (2 - Reinforced)

Related Goals

IND - Computer Science
Program Goal - 2) Students are exposed to practical applications of computer science
Program Goal - 3) Students are exposed to current computing hardware and software technologies
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 4.1) Software Engineering

Students understand and apply modern software development methodologies as they work with a team to deliver high-quality

IND - Computer Science

technical solutions

Outcome Status: Active

Related Courses

CSIS 321 - Software Engineering - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 350 - Data Communications & Networks - (1 - Introduced)

CSIS 475 - Field Experience - (2 - Reinforced, 3 - Assessed)

CSIS 490 - Applied Software Development - (2 - Reinforced, 3 - Assessed)

CSIS 495 - Individualized Study - (2 - Reinforced, 3 - Assessed)

CSIS 413 - Advanced Security - (2 - Reinforced)

ENGR 481 - Servant Engineering I - (2 - Reinforced, 3 - Assessed)

ENGR 482 - Servant Engineering II - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Senior Design I - (2 - Reinforced, 3 - Assessed)

ENGR 482 - Senior Design II - (2 - Reinforced, 3 - Assessed)

Related Goals

IND - Computer Science
Program Goal - 2) Students are exposed to practical applications of computer science
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 4.2) Project Management

Students successfully manage peer teams on large-scale projects

Outcome Status: Active

Related Courses

CSIS 321 - Software Engineering - (1 - Introduced, 3 - Assessed)

CSIS 350 - Data Communications & Networks - (1 - Introduced)

CSIS 475 - Field Experience - (2 - Reinforced)

ENGR 481 - Servant Engineering I - (1 - Introduced)

ENGR 482 - Servant Engineering II - (1 - Introduced)

ENGR 481 - Senior Design I - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

ENGR 482 - Senior Design II - (2 - Reinforced, 3 - Assessed)

Related Goals

IND - Computer Science

IND - Computer Science
Program Goal - 4) Students are prepared for a wide variety of careers in computer science
Program Goal - 5) Students act with integrity and maintain a high level of professionalism

Outcome: 4.3) Requirements Specification

Students engage internal and external clients to gather and specify functional and non-functional requirements for small- and large-scale systems

Outcome Status: Active

Related Courses

CSIS 310 - Data Structures - (1 - Introduced)

CSIS 314 - Client-Server Systems - (1 - Introduced)

CSIS 321 - Software Engineering - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 330 - Human-Computer Interactions - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 340 - Database Systems - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 350 - Data Communications & Networks - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 475 - Field Experience - (2 - Reinforced)

CSIS 480 - Principles of Compiler Design - (2 - Reinforced)

CSIS 490 - Applied Software Development - (2 - Reinforced, 3 - Assessed)

CSIS 495 - Individualized Study - (2 - Reinforced)

ENGR 481 - Servant Engineering I - (2 - Reinforced, 3 - Assessed)

ENGR 482 - Servant Engineering II - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Senior Design I - (2 - Reinforced, 3 - Assessed)

ENGR 482 - Senior Design II - (2 - Reinforced, 3 - Assessed)

Related Goals

IND - Computer Science
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 4.4) Interface and Interaction Design

Students understand and apply interface and interaction design principles for a graphical user interface-based application

Outcome Status: Active

Related Courses

IND - Computer Science

CSIS 202 - Intro to Computer Science II - (1 - Introduced)

CSIS 304 - Web-Based Programming - (1 - Introduced)

CSIS 314 - Client-Server Systems - (1 - Introduced, 2 - Reinforced)

CSIS 321 - Software Engineering - (1 - Introduced, 3 - Assessed)

CSIS 330 - Human-Computer Interactions - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 350 - Data Communications & Networks - (1 - Introduced, 3 - Assessed)

CSIS 475 - Field Experience - (2 - Reinforced)

CSIS 490 - Applied Software Development - (2 - Reinforced, 3 - Assessed)

CSIS 495 - Individualized Study - (2 - Reinforced)

ENGR 481 - Servant Engineering I - (1 - Introduced, 3 - Assessed)

ENGR 482 - Servant Engineering II - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Senior Design I - (2 - Reinforced, 3 - Assessed)

ENGR 482 - Senior Design II - (2 - Reinforced, 3 - Assessed)

Related Goals

IND - Computer Science
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 4.5) Cybersecurity

Students successfully complete the requirements of the cybersecurity concentration

Outcome Status: Active

Related Courses

CSIS 201 - Intro to Computer Science - (1 - Introduced)

CSIS 202 - Intro to Computer Science II - (1 - Introduced)

CSIS 310 - Data Structures - (2 - Reinforced, 3 - Assessed)

CSIS 321 - Software Engineering - (2 - Reinforced, 3 - Assessed)

CSIS 340 - Database Systems - (2 - Reinforced, 3 - Assessed)

CSIS 350 - Data Communications & Networks - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 360 - Comp Architect/Assembly Langua - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 370 - Object-Oriented Analysis & Design - (2 - Reinforced, 3 - Assessed)

IND - Computer Science

CSIS 420 - Structures of Program Language - (2 - Reinforced, 3 - Assessed)

CSIS 430 - Analysis of Algorithms - (2 - Reinforced, 3 - Assessed)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced, 3 - Assessed)

CSIS 450 - Network Administration - (2 - Reinforced, 3 - Assessed)

CSIS 460 - Operating Systems - (2 - Reinforced, 3 - Assessed)

CSIS 312 - Computer Security and Digital Forensics - (2 - Reinforced, 3 - Assessed)

CSIS 390 - Emerging Mobile Technologies - (2 - Reinforced, 3 - Assessed)

CSIS 413 - Advanced Security - (2 - Reinforced, 3 - Assessed)

CSIS 451 - Cyber Defense - (2 - Reinforced, 3 - Assessed)

CSIS 473 - Secure Software - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Servant Engineering I - (2 - Reinforced, 3 - Assessed)

ENGR 482 - Servant Engineering II - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Senior Design I - (2 - Reinforced, 3 - Assessed)

ENGR 482 - Senior Design II - (2 - Reinforced, 3 - Assessed)

Related Goals

IND - Computer Science
Program Goal - 2) Students are exposed to practical applications of computer science
Program Goal - 3) Students are exposed to current computing hardware and software technologies
Program Goal - 4) Students are prepared for a wide variety of careers in computer science
Program Goal - 5) Students act with integrity and maintain a high level of professionalism

Outcome: 4.6) Data Science and Machine Learning

Students understand and apply modern data science and machine learning techniques to answer research questions in their chosen domain

Outcome Status: Active

Related Courses

CSIS 201 - Intro to Computer Science - (1 - Introduced)

CSIS 300 - Numerical Methods - (1 - Introduced)

CSIS 340 - Database Systems - (1 - Introduced)

CSIS 434 - Parallel & Distributed Computing - (1 - Introduced)

CSIS 440 - Artificial Intelligence (AI) - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

IND - Computer Science

CSIS 485 - Selected Topics - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 495 - Individualized Study - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Senior Design I - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

ENGR 482 - Senior Design II - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

Related Goals

IND - Computer Science
Program Goal - 2) Students are exposed to practical applications of computer science
Program Goal - 3) Students are exposed to current computing hardware and software technologies
Program Goal - 4) Students are prepared for a wide variety of careers in computer science

Outcome: 5.1) Academic Integrity

Students do not violate collaboration, measure of software similarity, or plagiarism rules in their coursework

Outcome Status: Active

Assessment Tools

Faculty-reported number of academic integrity violations in CSIS courses (Active)
Target: Zero academic integrity violations in CSIS courses are reported. **Schedule for Data Collection:** Annually by May 15 **Schedule for Data Analysis & Reporting:** Annually by August 15 **Related Documents:** Academic Integrity Violations

Related Courses

CSIS 201 - Intro to Computer Science - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 202 - Intro to Computer Science II - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 304 - Web-Based Programming - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 310 - Data Structures - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 314 - Client-Server Systems - (2 - Reinforced, 3 - Assessed)

CSIS 321 - Software Engineering - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 330 - Human-Computer Interactions - (3 - Assessed)

CSIS 340 - Database Systems - (2 - Reinforced, 3 - Assessed)

CSIS 350 - Data Communications & Networks - (2 - Reinforced, 3 - Assessed)

CSIS 360 - Comp Architect/Assembly Langua - (2 - Reinforced, 3 - Assessed)

CSIS 370 - Object-Oriented Analysis & Design - (2 - Reinforced, 3 - Assessed)

IND - Computer Science

CSIS 420 - Structures of Program Language - (2 - Reinforced, 3 - Assessed)

CSIS 430 - Analysis of Algorithms - (2 - Reinforced, 3 - Assessed)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced, 3 - Assessed)

CSIS 440 - Artificial Intelligence (AI) - (2 - Reinforced, 3 - Assessed)

CSIS 450 - Network Administration - (2 - Reinforced)

CSIS 460 - Operating Systems - (2 - Reinforced, 3 - Assessed)

CSIS 480 - Principles of Compiler Design - (2 - Reinforced, 3 - Assessed)

CSIS 485 - Selected Topics - (2 - Reinforced, 3 - Assessed)

CSIS 490 - Applied Software Development - (2 - Reinforced)

CSIS 495 - Individualized Study - (2 - Reinforced)

CSIS 312 - Computer Security and Digital Forensics - (2 - Reinforced, 3 - Assessed)

CSIS 390 - Emerging Mobile Technologies - (2 - Reinforced, 3 - Assessed)

CSIS 413 - Advanced Security - (2 - Reinforced, 3 - Assessed)

CSIS 451 - Cyber Defense - (2 - Reinforced, 3 - Assessed)

CSIS 473 - Secure Software - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Senior Design I - (2 - Reinforced)

ENGR 482 - Senior Design II - (2 - Reinforced)

Related Goals

IND - Computer Science
Program Goal - 5) Students act with integrity and maintain a high level of professionalism

Outcome: 5.2) Technical Integrity

Students do not violate program or institutional security policies through malicious use of technical skills acquired in the program
Outcome Status: Active

Related Courses

CSIS 201 - Intro to Computer Science - (1 - Introduced, 2 - Reinforced)

CSIS 202 - Intro to Computer Science II - (1 - Introduced, 2 - Reinforced)

CSIS 304 - Web-Based Programming - (1 - Introduced, 2 - Reinforced)

CSIS 314 - Client-Server Systems - (1 - Introduced, 2 - Reinforced)

IND - Computer Science

CSIS 321 - Software Engineering - (1 - Introduced)

CSIS 340 - Database Systems - (1 - Introduced, 2 - Reinforced)

CSIS 350 - Data Communications & Networks - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 360 - Comp Architect/Assembly Langua - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced)

CSIS 440 - Artificial Intelligence (AI) - (2 - Reinforced)

CSIS 450 - Network Administration - (2 - Reinforced, 3 - Assessed)

CSIS 475 - Field Experience - (2 - Reinforced, 3 - Assessed)

CSIS 490 - Applied Software Development - (2 - Reinforced)

CSIS 312 - Computer Security and Digital Forensics - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 390 - Emerging Mobile Technologies - (2 - Reinforced, 3 - Assessed)

CSIS 413 - Advanced Security - (2 - Reinforced, 3 - Assessed)

CSIS 451 - Cyber Defense - (2 - Reinforced, 3 - Assessed)

CSIS 473 - Secure Software - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Senior Design I - (2 - Reinforced, 3 - Assessed)

ENGR 482 - Senior Design II - (2 - Reinforced, 3 - Assessed)

Related Goals

IND - Computer Science
Program Goal - 5) Students act with integrity and maintain a high level of professionalism

Outcome: 5.3) Professional Conduct

Students demonstrate professionalism in conduct and communication with internal and external entities

Outcome Status: Active

Related Courses

CSIS 201 - Intro to Computer Science - (1 - Introduced)

CSIS 202 - Intro to Computer Science II - (1 - Introduced)

CSIS 275 - Field Experience - (2 - Reinforced, 3 - Assessed)

CSIS 321 - Software Engineering - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 330 - Human-Computer Interactions - (1 - Introduced, 2 - Reinforced)

IND - Computer Science

CSIS 350 - Data Communications & Networks - (2 - Reinforced, 3 - Assessed)

CSIS 399 - Cross-Cultural Experience - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

CSIS 434 - Parallel & Distributed Computing - (2 - Reinforced)

CSIS 440 - Artificial Intelligence (AI) - (2 - Reinforced, 3 - Assessed)

CSIS 475 - Field Experience - (2 - Reinforced, 3 - Assessed)

CSIS 490 - Applied Software Development - (2 - Reinforced, 3 - Assessed)

CSIS 312 - Computer Security and Digital Forensics - (1 - Introduced)

ENGR 481 - Servant Engineering I - (2 - Reinforced, 3 - Assessed)

ENGR 482 - Servant Engineering II - (2 - Reinforced, 3 - Assessed)

ENGR 481 - Senior Design I - (1 - Introduced, 2 - Reinforced, 3 - Assessed)

ENGR 482 - Senior Design II - (2 - Reinforced, 3 - Assessed)

Related Goals

IND - Computer Science
Program Goal - 4) Students are prepared for a wide variety of careers in computer science
Program Goal - 5) Students act with integrity and maintain a high level of professionalism