CS/IS240 : Cloud Computing - Fundamentals

General Information

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Course Code (CB01) :	CS/IS240
Course Title (CB02) :	Cloud Computing - Fundamentals
Department:	CSIS
Proposal Start:	Fall 2024
TOP Code (CB03) :	(0701.00) Information Technology, General
CIP Code:	(11.0101) Computer and Information Sciences, General.
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000608687
Curriculum Committee Approval Date:	03/13/2024
Board of Trustees Approval Date:	04/16/2024
Last Cyclical Review Date:	03/13/2024
Course Description and Course Note:	CS/IS 240 introduces cloud computing, which shifts Information Technology from on premises computing infrastructure to elastic cloud systems. The course provides a foundation of cloud computing technologies and provides students with the ability to evaluate and assess the business and technical benefits of cloud computing and cloud applications. The course will include labs to provide hands on training.
Justification:	Mandatory Revision
Academic Career:	• Credit
Author:	• Mirzayan, Simon

Academic Senate Discipline

Primary Discipline:	• Computer Information Systems (Computer network installation, microcomputer technology, computer applications)
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08)

Course is not a basic skills course.

Course Special Class Status (CB13)

Course is not a special class.

Grading Basis

- Grade with Pass / No-Pass Option

Allow Students to Gain Credit by Exam/Challenge

Pre-Collegiate Level (CB21)

Not applicable.

Course Support Course Status (CB26)

Course is not a support course

Transferability & Gen. Ed. Options

General Education Status (CB25)

Not Applicable

Transferability

Transferable to both UC and CSU

Transferability Status

Approved

C-ID	Area	Status	Approval Date	Comparable Course
ITIS	Information Technology and Information Systems	Approved	08/29/2022	ITIS 170 - Cloud Computing and Virtualization

Units and Hours

Summary

Minimum Credit Units (CB07)	3
Maximum Credit Units (CB06)	3
Total Course In-Class (Contact) Hours	90
Total Course Out-of-Class Hours	72
Total Student Learning Hours	162

Credit / Non-Credit Options

Course Type (CB04)

Credit - Degree Applicable

Noncredit Course Category (CB22)

Credit Course.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Credit Course.

Funding Agency Category (CB23)

Not Applicable.

Cooperative Work Experience Education Status (CB10)

Variable Credit Course

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	2	4
Laboratory Hours	3	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	0
Course In-Class (Contact) Hours	
Lecture	36
Laboratory	54

Studio	0
Total	90

Course Out-of-Class Hours

Lecture	72
Laboratory	0
Studio	0
Total	72

Time Commitment Notes for Students

No value

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Advisory

CS/IS190 - Introduction to Computer Networks

Objectives

- Apply the OSI networking model to a TCP/IP network.

AND

Advisory

CS/IS197 - Advanced Networking: Server Operations

Objectives

- Manage multiple servers in a networked environment.

Entry Standards

Entry Standards

Course Limitations

Cross Listed or Equivalent Course

Specifications

Methods of Instruction

Methods of Instruction	Lecture
Methods of Instruction	Laboratory
Methods of Instruction	Collaborative Learning
Methods of Instruction	Demonstrations

Out of Class Assignments

- Hands-on projects (e.g. deploy cloud systems)

Methods of Evaluation	Rationale
Exam/Quiz/Test	Final examination in M/C Exam
Project/Portfolio	Projects - Calculate and estimate costs for a cloud solution
Activity (answering journal prompt, group activity)	Hands on labs, for example create a server in the cloud

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
No Value	No Value	No Value	No Value	No Value

Other Instructional Materials (i.e. OER, handouts)

Description	Instructor provided links to Internet resources
Author	No value
Citation	No value
Online Resource(s)	No value

Materials Fee

No value

Learning Outcomes and Objectives

Course Objectives

Explain the cloud computing model.

Describe infrastructure as a service.

Differentiate examples of platform as a service.

Identify software as a service.

SLOs

Understand cloud services offered by different cloud providers. Expected Outcome Performance: 70.0

ILOs Core ILOs	Communicate clearly, ethically, and creatively; listen actively and engage respectfully with others; consider situational, cultural, and personal contexts within or across multiple modes of communication.
CSIS Information Technology Certificate	Demonstrate installing, configuring and maintaining computer and mobile devices, including diagnosing, resolving and documenting common hardware and software.
CSIS Information Technology - A.S. Degree Major	Demonstrate installing, configuring, and maintaining computer and mobile devices, including diagnosing, resolving, and documenting common hardware and software.
CSIS Computer Science - A.S. Degree Major	Prepare a software project to implement a single scientific, mathematical, business, or technical function.
CSIS Computer Science - Certificate	Prepare a software project to implement a single scientific, mathematical, business, or technical function.
CSIS Computer Support Technician	demonstrate an understanding of computer structure and operations
	possess a basic knowledge of computer operation and capabilities with the skills to troubleshoot problems or aid in user support.
CSIS Computer Software Technician	demonstrate the ability to independently create, save, modify and print a document using a word processing program and appropriate assistive technology
CSIS Web Development - Certificate	use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.
CSIS Web Development - A.S. Degree Major	use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.

Utilize cloud services offered by different cloud providers. Expected Outcome Performance: 70.0

ILOs Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.

CSIS Information Technology Certificate	Demonstrate installing, configuring and maintaining computer and mobile devices, including diagnosing, resolving and documenting common hardware and software.
CSIS Information Technology - A.S. Degree Major	Demonstrate installing, configuring, and maintaining computer and mobile devices, including diagnosing, resolving, and documenting common hardware and software.
CSIS Computer Science - A.S. Degree Major	Prepare a software project to implement a single scientific, mathematical, business, or technical function.
CSIS Computer Science - Certificate	Prepare a software project to implement a single scientific, mathematical, business, or technical function.
CSIS Computer Support Technician	demonstrate an understanding of computer structure and operations
	possess a basic knowledge of computer operation and capabilities with the skills to troubleshoot problems or aid in user support.
CSIS Computer Software Technician	demonstrate the ability to independently create, save, modify and print a document using a word processing program and appropriate assistive technology
CSIS Web Development - A.S. Degree Major	use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.
CSIS Web Development - Certificate	use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.

Course Content

Lecture Content

Introduction to Cloud Computing (4 hours)
Approaches to Cloud Computing (4 hours)

- Public
- Private
- Hybrid
- The National Institute of Standards and Technology (NIST) Model

Software as a Service (SaaS) (4 hours)

- Use/design
- Implementation considerations

Platform as a Service (PaaS) (4 hours)

- Use/design
- Implementation considerations

Infrastructure as a Service (IaaS) (4 hours)

- Use/design
- Implementation considerations

Cloud Computing Security (4 hours)
Business Continuity and Availability (2 hours)
Cloud Computing Legal Issues (2 hours)
Cloud Providers (8 hours)

- Google
- Azure
- Amazon Web Services

Total hours: 36

Laboratory/Studio Content

Introduction to Cloud Computing (6 hours)
Approaches to Cloud Computing (6 hours)

- Public

- Private
- Hybrid
- The National Institute of Standards and Technology (NIST) Model

Software as a Service (SaaS) (6 hours)
- Use/design
- Implementation considerations

Platform as a Service (PaaS) (6 hours)
- Use/design
- Implementation considerations

Infrastructure as a Service (IaaS) (6 hours)
- Use/design
- Implementation considerations

Cloud Computing Security (6 hours)
Business Continuity and Availability (6 hours)
Cloud Providers (12 hours)
- Google
- Azure
- Amazon Web Services

Total hours: 54

Additional Information

Is this course proposed for GCC Major or General Education Graduation requirement? If yes, indicate which requirement in the two areas provided below.

No

GCC Major Requirements

No Value

GCC General Education Graduation Requirements

No Value

Repeatability

Not Repeatable

Justification (if repeatable was chosen above)

No Value

Resources

Did you contact your departmental library liaison?

No

If yes, who is your departmental library liason?

No Value

Did you contact the DEIA liaison?

No

Were there any DEIA changes made to this outline?

No

If yes, in what areas were these changes made:

No Value

Will any additional resources be needed for this course? (Click all that apply)

- No

If additional resources are needed, add a brief description and cost in the box provided.

No Value