Course Acronym:	CIS
Course Number:	150
Descriptive Title:	Cloud Computing with AWS
Division:	Business
Department:	Computer Information Systems
Course Disciplines:	Computer Information Systems
Catalog Description:	This course introduces students to the fundamentals of cloud computing. Topics include different cloud computing models, including Infrastructure as a Service, Platform as a Service, and Software as a Service. Students will be using the Amazon Web Services (AWS) platform to examine the practice of various cloud services (including storage, servers, and software applications). The course will also survey the industry trends toward cloud computing, analyze the economics of cloud computing, discuss the various cloud careers and industry demand for cloud computing skills. This course will prepare a student to take the AWS Cloud Practitioner Certification exam.
Prerequisite:	
Co-requisite:	
Recommended Preparation:	CIS 13 or CIS 40 or equivalent experience
Enrollment Limitation:	
Hours Lecture (per week):	2
Hours Laboratory (per week):	3
Outside Study Hours:	4
Total Course Hours:	90
Course Units:	3
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	12/17/2018
Transfer UC:	No
Effective Date:	
General Education: ECC	
Term:	
Other:	

CSU GE:	
Term:	
Other:	
IGETC:	
Term:	
Other:	
Student Learning Outcomes:	**SLO #1 Cloud Computing Concepts** Demonstrate an understanding of cloud computing and its advantages and disadvantages. **SLO #2 Cloud Computing Models** Describe the different cloud computing models and its implementation in Amazon Web Services (AWS). **SLO #3 Cloud Applications** Create a cloud application utilizing AWS Computing Services.
Course Objectives:	1. Describe the Cloud Computing Model. 2. Describe Amazon Web Services (AWS). 3. Understand infrastructures, platforms, and software as a service. 4. Identify and mitigate security concerns associated with cloud computing. 5. Identify and mitigate legal concerns associated with cloud computing. 6. Use cloud services from leading service providers. 7. Create a cloud application utilizing AWS Computing Services (EC2). 8. Create a cloud application utilizing AWS Database Services (S3). 9. Create and configure an AWS Virtual Private Cloud (VPC). 10. Review Cloud Computing Career Options and industry demand.
Major Topics:	**I. Introduction to Cloud Computing (3 hours, lecture)** A. Overview of Cloud Computing B. Advantages and Disadvantages of Cloud Computing C. Legal Concerns in Cloud Computing **II. Cloud Services and AWS (6 hours, lecture)** A. Infrastructure as a Service B. Platform as a Service C. Software as a Service **III. The AWS Core Services (9 hours, lecture)** A. AWS Compute Services B. AWS Virtual Private Cloud

C. AWS Storage Services

D. AWS Database Services

IV. Security Concerns and the AWS Security Model (9 hours, lecture)

A. AWS Shared Responsibility Model

B. AWS Access Identity and Access Management (IAM)

C. AWS Trusted Advisor

D. AWS CloudTrail

E. AWS Config

F. AWS Security and Compliance Programs

G. AWS Security Resources

V. AWS Architecture (6 hours, lecture)

A. Introduction to the Well-Architected Framework

B. Design Principles

C. Understanding Reliability and High Availability

D. AWS Cost and Support

VI. The Cloud Computing Industry (3 hours, lecture)

A. Industry Trends

B. Other Cloud Computing Services

C. Cloud Computing Economy

D. AWS Cloud Computing Career Options

VII. The AWS Core Services (16 hours, lab)

A. AWS Computing Services

B. AWS Virtual Private Cloud

C. AWS Storage Services

D. AWS Database Services

VIII. The AWS Security Model (12 hours, lab)

A. AWS Shared Responsibility Model

	B. AWS Access Identity and Access Management (IAM)
	C. AWS Trusted Advisor
	D. AWS CloudTrail
	E. AWS Config
	IX. Security Concerns (11 hours, lab)
	A. AWS Best Practices
	B. AWS Security and Compliance Programs
	C. AWS Security Resources
	X. AWS Architecting (12 hours, lab)
	A. Introduction to the Well-Architected Framework
	B. Well-Architected Design Principles
	C. Understanding Reliability and High Availability
	D. AWS Cost and Support
	XI. The Cloud Computing Industry (3 hours, lab)
	A. Industry Trends
	B. Other Cloud Computing Services
	C. Cloud Computing Economy
	D. AWS Cloud Computing Career Options
Total Lecture Hours:	36
Total Laboratory Hours:	54
Total Hours:	90
Primary Method of Evaluation:	2) Problem solving demonstrations (computational or non-computational)
Typical Assignment Using Primary Method of Evaluation:	List three different cloud-based File Storage Products. Compare and contrast each in terms of features, platform availability, limitations, security, and pricing, and analyze the more appropriate product for Company XYZ. Prepare a one- to two-page paper explaining your recommendation and the reasons for it. Include a comparison table of the three different service offerings, and screenshots of each service's file management interface.
Critical Thinking Assignment 1:	Using Amazon Web Services, create a virtual machine running an Amazon Machine Image (AMI) using Linux as an operating system. Connect to the AMI using Secure Shell (ssh)

	and your AWS security certificate. Install WordPress. Verify your installation is working properly by visiting the newly created WordPress site hosted on your AMI.
Critical Thinking Assignment 2:	Your company Wascally Widgets has an e-Commerce store that is running on a server located on the company's internal network. After a near disaster involving a fire at the company's headquarters, Elmer, the Chief Executive Officer (CEO) wanted to know what options were available for moving the server offsite and asked the Chief Technical Officer (CTO) to provide him some options. Barbara, the CTO, has tasked you to conduct a preliminary assessment on moving the company's e-Commerce site to AWS. Create an assessment plan that will detail what is required of the company in order to make the move to AWS. Secondly, create a proposal that will detail the move to AWS, including what AWS services will be needed to complete the transition to the cloud.
Other Evaluation Methods:	Homework Problems, Laboratory Reports, Objective Exam, Quizzes, Written Homework
Instructional Methods:	Demonstration, Discussion, Group Activities, Lab, Lecture, Multimedia presentations
If other:	
Work Outside of Class:	Answer questions, Problem solving activity, Required reading, Skill practice, Study
If Other:	
Up-To-Date Representative Textbooks:	Wilkins, M., Learning Amazon Web Services (AWS): A Hands-On Guide to the Fundamentals of AWS Cloud, Pearson, 2019. Hutten, D., AWS: Amazon Web Services Tutorial The Ultimate Beginners Guide, CreateSpace Independent Publishing Platform, 2017.
Alternative Textbooks:	
Required Supplementary Readings:	
Other Required Materials:	
Requisite:	
Category:	
Requisite course(s): List both prerequisites and corequisites in this box.	
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	
Requisite Skill:	
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	
Requisite course:	CIS 13 or CIS 40
Requisite and Matching skill(s):Bold	**This course requires an understanding of the computers and computer information systems. The student should be proficient in using a Windows PC including computer**

the requisite skill. List the corresponding course objective under each skill(s).	terminology, file management, software installation, software usage, and computer configuration. Students should be able to solve common business problems using appropriate information technology applications and systems design and developmental tools. They should also be able to demonstrate an understanding of the system development process and use of information systems within an organization CIS 13 - Explain the development and use of information systems in business. CIS 13 - Solve common business problems using appropriate information technology applications and systems. CIS 40 - Analyze how application software interacts with the operating system and computer system. CIS 40 - Demonstrate the ability to use software tools to troubleshoot and resolve problems CIS 40 - Examine the professional and ethical responsibilities facing the IT-enabled organization including privacy, security, and disaster recovery.
Requisite Skill:	Equivalent experience
Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). If applicable	Demonstrate an understanding of the development and use of information systems in business.
Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Khai Lu
Date:	10/02/2018
Original Board Approval Date:	
Last Reviewed and/or Revised by:	
Date:	
Last Board Approval Date:	12/19/2022