Montgomery County Community College
CIS 166
Introduction to Cloud Computing
3-2-2

COURSE DESCRIPTION:
This course introduces the evolution, architecture, structure, functions, components, and models of Cloud computing. Students will learn about computing principles and concepts involved and what it means from a business and technical perspective. The course will also cover the objectives of the CompTIA Cloud Essentials certification examination.

REQUISITES:
Previous Course Requirements
None

Concurrent Course Requirements
None

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
1. Discuss evolution and fundamental concepts of cloud computing.	Lecture/Discussion Homework Assignments Assigned readings Online research	Discussion/Questions Research presentations Chapter Quiz
2. Interpret characteristics of cloud computing.	Lecture/Discussion Homework Assignments Assigned readings Research	Discussion/Questions Research presentations Chapter Quiz
3. Explain cloud types and technical perspective.	Lecture/Discussion Homework Assignments Assigned readings Research	Discussion/Questions Research presentations Chapter Quiz
4. Illustrate steps to successful adoption of cloud services.	Lecture/Discussion Homework Assignments Research	Discussion/Questions Research presentations Chapter Quiz
5. Interpret cloud computing standards and risks and consequences of Cloud Computing.	Lecture/Discussion Homework Assignments Assigned readings Research	Discussion/Questions Research presentations Chapter Quiz Final Skills based assessment and written final exam

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated

results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria.*

SEQUENCE OF TOPICS:

Evolution and Fundamental Concepts of Cloud Computing

- Common terms and definitions of cloud computing.
- Relationship between cloud computing and virtualization.
- Definitions of cloud computing and their commonalities/differences.
- Types of organizations that might or not benefit from cloud computing.
- Distinguishing different cloud types, including XaaS, IaaS, PaaS with examples*.*

Cloud Computing and Business Value

- Similarities and differences between cloud computing and outsourcing.
- Characteristics of clouds and cloud services from a business perspective:
- How cloud computing will enhance business value.

Technical Perspectives/Cloud Types

- Technical differences between private and public types of clouds.
- Conceptual techniques and methods of cloud computing deployment
- Technical challenges and risks for cloud computing and mitigation methods
- Impact of cloud computing on application architecture and the application-development process.

Steps to Successful Adoption of Cloud

- Steps for a successful adoption of cloud computing services
- Roles and capabilities of cloud computing vendors and dependencies on vendors.
- Organizational capabilities for realizing cloud benefits.
- Multiple approaches for migrating applications to the cloud.

Impact and Changes of Cloud Computing on IT Service Management

- Impact and changes by cloud computing on IT service management in a typical organization
- Using a structured approach based on ITIL for exploring potential impact of cloud computing in organizations.

Risks and Consequences of Cloud Computing

- Integrating cloud computing into an organization's existing compliance risk and regulatory framework.
- Implications on direct cost and cost allocations.
- Maintaining strategic flexibility.

Cloud computing standards and best practices

- Open Cloud Consortium
- Distributed Management Task Force (DMTF)
- Standards for Application Developers
- Standards for Security in the Cloud
- Best Practices for Selecting a Vendor and Implementing Cloud-Based Applications

LEARNING MATERIALS:
Hausman, et al (2013) *Cloud Essentials*. Sybex.
    ISBN-10: 111840873X

COURSE APPROVAL:
Prepared by: Anil Datta   Date: 9/6/2013
VPAA/Provost Compliance Verification:
              Victoria Basecki-Perez, Ed. D.   Date: 1/2014

This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.