COURSE: CYB 246 Introduction to Cloud Computing - 3 credits

INSTRUCTOR: **SEMESTER/YEAR:**

COURSE DESCRIPTION: This course serves as a basis for understanding the standard cloud terminologies and methodologies needed to implement, maintain, and support cloud technologies and infrastructure. Also discussed will be the relevant aspects of IT security and the use of industry best practices related to the application of virtualization. Topics include cloud service and delivery models, various types of disk storage systems network infrastructure and management, virtualization components, performance tuning, systems management, troubleshooting and security. Business continuity and disaster recovery are also covered. Prerequisites are IST 154 and CYB 101. Course fee includes CompTIA Cloud+ exam voucher.

TEXTBOOKS: CompTIA Cloud+. McGraw-Hill Education, 2014. ISBN: 978-0-07-182866-4, Stammer/Wilson.

STUDENT LEARNING OUTCOMES:
- Think critically
- Communicate effectively with both verbal and written forms
- Identify the standard cloud terminologies and methodologies to implement, maintain, and support cloud technologies and infrastructure
- Understand relevant aspects of IT security and the use of industry best practices related to the application of virtualization

TOTAL HOURS OF COURSEWORK:

To earn one academic credit at HCC, students are required to complete a minimum of 37.5 clock hours (45 fifty-minute "academic" hours) of coursework per semester. Those hours of coursework may be completed through a combination of hours within the classroom and hours outside the classroom. Certain courses may require more than the 37.5 minimum hours of coursework per credit. For most classes, students should expect to do at least 2 hours of coursework outside of class for each hour of in-class coursework.

COURSE CONTENT OBJECTIVES:
Upon completion of this course the student will be able to:
- Identify cloud delivery models and services
- List the different disk types and configurations
- Discuss storage technologies
- Name network types and optimization
- Identify virtualization components
- Discuss benefits of virtualization in a cloud environment
- Describe resource monitoring techniques

- Identify various methods of performance tuning
- Provide examples of best practices of the nontechnical aspects of cloud service delivery
- Identify testing techniques and troubleshooting tools
- Discuss network security best practices
- Name disaster recovery methods

COURSE POLICIES:

- **Attendance Policy**: Students are expected to attend all classes. In the case of absence due to emergency (illness, death in the family, accident), or participation in official College functions, it is the student's responsibility to confer with the instructor about the absence and missed course work. Students should call or e-mail their instructor on the day of any absence from class. Students absent from an announced test or examination, unless authorized, may be given an equivalent examination at a later date at the discretion of the instructor. Students contemplating withdrawing from a course should read the section of the college catalog entitled "Withdrawal and Course Changes."

- **Disclaimer**: The instructor reserves the right to modify course content.

- **Honor Code**: A major responsibility for students is to conduct themselves according to standards of scholarship and morality. These standards are listed and explained in the Code of conduct, which is published in the College Guide: A Handbook Planner for Students and on the HCC Web site.

- **Incomplete Policy:** Students will not be given an incomplete grade in the course without sound reason and documented evidence as described in the Student Handbook. For a student to receive an incomplete, he or she must be passing and must have completed 75% of the course.

- Services for Students with Special Needs: Students who have special needs are encouraged to identify themselves to the Coordinator of Disability Services as early as possible. Reasonable accommodations based on current documentation are provided to qualified students.

ASSESSMENT PROCEDURES:

		90 – 100	A
Assignments/Case Studies -	25%	80 – 90	B
Quizzes -	10%	70 – 79	C
Research Project -	25%	60 – 69	D
Exams -	25%	below 60	F
Domain Quizzes -	15%		

- *Assignments/Case studies -* includes various activities, labs and case studies.
- *Quizzes -* Complete objective type questions based on textbook concepts.
- *Research Project -* develop, design, complete and present a research project approved by instructor.
- *Exams -* Complete midterm and final exams

• ***Domain Quizzes –*** complete objective type questions based on CompTIA Cloud+ domains

IST 245 FUNDAMENTALS OF PENETRATION TESTING
TOPICAL OUTLINE

Week of	Topic	Assignment
September 13	Chap 1 – Cloud Computing Concepts, Models and Terminology	Q1, A1
September 20	Chap 2 – Disk Storage Systems	Q2, A2
September 27	Chap 3 – Storage Networking	Q3, A3 Topic due
October 4	Chap 4 – Network Infrastructure	Q4, A4
October 11	Chap 5 – Virtualization Components Chap 6 – Virtualization and the Cloud	Q5, A5 Outline Due
October 18	No class	Q6, A6 Midterm
October 25	Chap 7 – Network Management	Q7, A7
November 1	Chap 8 – Performance Tuning	Q8, A8
November 8	Chap 9 – System Management	Q9, A9 Project due
November 15	Chap 10 – Testing and Troubleshooting	Q10, A10
November 22	Chap 11 – Security in the Cloud	Q11, A11
November 29	Chap 12 – Business Continuity and Disaster Recovery	Q12, A12
December 6	Final	Final