COURSE SYLLABUS

CIS 4083 Cloud Computing for IT
Course Prerequisites: COP 3515

3 credit hours

Department of Computer Science and Engineering

Instructor Name:	TBD	Semester/Term & Year:	Fall 2017
Office Number:	TBD	Delivery Method:	Online
Phone Number:	TBD	Class Meeting Time:	Asynchronous
E-Mail:	TBD		
Website:	TBD		
Office Hours:	TBD		

I. University Course Description

CIS 4083 Cloud Computing for IT (3). This is a hand-on class in the methods and technologies of cloud computing. Upon completion of this course students will be able to create, configure, build, deploy, and manage a variety of cloud based solutions.

II. Course Objectives

At the successful completion of the course, students will understand:
1) The different categories of cloud computing.
2) Use of load balancing and scaling.
3) Cloud storage options and their use.
4) How to use Hadoop to solve big data problems.
5) Use of databases in the cloud.
6) Security essentials as applied to cloud resources.
7) Extending the corporate network into the Cloud.

III. Student Learning Outcomes

At the successful completion of the course, students will be able to demonstrate attainment of the course objectives by:
1) Contrast the different categories of cloud computing services (i.e. SaaS, IaaS, PaaS).
2) Apply load balancing and auto scaling to a cloud application.
3) Illustrate the fundamental concepts of cloud storage and demonstrate their use in storage systems such as Amazon S3 and HDFS
4) Design, implement, test, and debug a Hadoop application.
5) Configure and deploy a cloud-hosted database.
6) Choose and apply appropriate security measures for a cloud-based system.
7) Design, configure, test, and deploy a virtual private cloud utilizing a VPN connection.

IV. Required Texts

1) Hwang, K., Dongarra, J., & Fox, G. C. (2013). *Distributed and Cloud Computing*. Morgan Kaufmann. ISBN-13: 978-0-12-800204-9
2) Modena, G., & Turkington, G. (2015). *Learning Hadoop 2*. Packt Publishing. ISBN-13: 978-1-78328-551-8

3) Wadia. Y. (2016). *AWS Administration – the Definitive Guide*. Packt Publishing. ISBN-13: 978-1-78217-376-2

V.   Supplementary Materials
Other readings may be assigned and will be made available via the Canvas website.

VI.   Basis for Final Grade
The course grade is based on:

Item	Percent of Final Grade
Assignments	35%
Project	15%
Midterm exam	25%
Final exam	25%
	100%

Final grades will be "no worse than":

Grading Scale (%)	
90-100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

At the instructor's discretion, the grade cut-off thresholds may be made lower. Plus/minus grades will not be used.

VII.   Grade Dissemination
Graded material will be returned to students.

VIII.   Course Policies: Grades

Regrade Policy:
Any questions on grading of assignments, project, or exams must be brought to the instructor's attention within 5 working days of the return of the item to the student.

Late Work Policy:
Late work will not be accepted. In case of documented hardship, grades may be adjusted (for example, one assignment may count as two assignment grades to cover for a missed assignment). Hardships must be documented to the instructor by the appropriate USF service (e.g., Counseling Center, Heath Services, etc.).

Extra Credit Policy:
There will be no extra credit opportunities beyond possible extra credit questions on the two exams.

Grades of "Incomplete":
An "I" grade may be awarded to a student only when a small portion of the student's work is incomplete and only when the student is otherwise earning a passing grade. The time limit for removing the "I" may not exceed two academic semesters, whether or not the student is in residence, and/or graduation, whichever comes first.

IX. Course Policies: Technology and Media

Email:
Students may communicate with the instructor using email. Most emails will be responded to in less than 24 hours.

Canvas:
Course materials will be posted on Canvas.

Online Proctoring:
All exams will be proctored using the University procedure for proctoring of online exams.

X. Course Policies: Student Expectations

Academic Integrity of Students:
Academic integrity is the foundation of the University of South Florida System's commitment to the academic honesty and personal integrity of its university community. Academic integrity is grounded in certain fundamental values, which include honesty, respect, and fairness. Broadly defined, academic honesty is the completion of all academic endeavors and claims of scholarly knowledge as representative of one's own efforts. The final decision on an academic integrity violation and related academic sanction at any USF System institution shall affect and be applied to the academic status of the student throughout the USF System, unless otherwise determined by the independently accredited institution.

Disruption to Academic Process:
Disruptive students in the academic setting hinder the educational process. Disruption of the academic process is defined as the act, words, or general conduct of a student in a classroom or other academic environment which in the reasonable estimation of the instructor: (a) directs attention away from the academic matters at hand, such as noisy distractions, persistent, disrespectful or abusive interruption of lecture, exam, academic discussion, or general University operations, or (b) presents a danger to the health, safety, or well-being of self or other persons.

Student Academic Grievance Procedures:
The purpose of these procedures is to provide all undergraduate and graduate students taking courses within the University of South Florida System an opportunity for objective review of facts and events pertinent to the cause of the academic grievance. An "academic grievance" is a claim that a specific academic decision or action that affects that student's academic record or status has violated published policies and procedures, or has been applied to the grievant in a manner different from that used for other students.

Disability Access:
Students with disabilities are responsible for registering with Students with Disabilities Services (SDS) in order to receive academic accommodations. SDS encourages students to notify instructors of accommodation needs at least 5 business days prior to needing the accommodation. A letter from SDS must accompany this request.

Religious Observances:
Students who anticipate the necessity of being absent from class due to the observation of a major religious observance must provide notice of the date(s) to the instructor, in writing, at the beginning of the term.

Sexual Misconduct/Sexual Harassment Reporting:

USF is committed to providing an environment free from sex discrimination, including sexual harassment and sexual violence (USF System Policy 0-004). The USF Center for Victim Advocacy and Violence Prevention is a confidential resource where you can talk about incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence. This confidential resource can help you without having to report your situation to either the Office of Student Rights and Responsibilities (OSSR) or the Office of Diversity, Inclusion, and Equal Opportunity (DIEO), unless you request that they make a report. Please be aware that in compliance with Title IX and under the USF System Policy, educators must report incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence. If you disclose any of these situations in class, in papers, or to me personally, I am required to report it to OSSR or DIEO for investigation. Contact the USF Center for Victim Advocacy and Violence Prevention: (813) 974-5757.

End of Semester Student Evaluations:

All classes at USF make use of an online system for students to provide feedback to the University regarding the course. These surveys will be made available at the end of the semester, and the University will notify you by email when the response window opens. Your participation is highly encouraged and valued.

Campus Emergencies:

In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of instruction through methods that include but are not limited to: Canvas, Elluminate, Skype, and email messaging and/or an alternate schedule. It's the responsibility of the student to monitor the Canvas site for each class for course specific communication, and the main USF, college, and department websites, emails, and MoBull messages for important general information.

XI. Schedule

Week	Readings	Topics and events
1	Hwang Ch1 & 3, Wadia Ch1 & 3	Motivation and objectives, Objectives of cloud computing. Advantages and problems.
2	Hwang Ch 3, Wadia Ch 3	Applications appropriate for clouds. Typical services. Elastic Cloud Computing.
3	Wadia Ch 2	Identity management. Importance and examples
4	Wadia Ch 4	Security, storage, networking.
5	Wadia Ch 5	Infrastructure as service. Building your own private cloud, VPC, VPN.
6	Hwang Ch 2, Modena Ch 1 & 3	Intro to Hadoop
7	Modena Ch 2 & 5	Hadoop Storage, Spark
8	Wadia Ch 8	**Mid-Term**. Database-as-a-Service
9	Hwang Ch 4	Security. Attacks and their defenses. Misuse patterns.
10	Modena Ch 7	Hadoop + SQL, Hive, Impala
11	Wadia Ch 9	Simple Storage Service
12	Wadia Ch 6	Monitoring Infrastructure. Reliability.
13	Wadia Ch 7	Providing reliability, availability, and fault tolerance in cloud systems. Auto scaling, load balancing.
14	Wadia Ch 9	The Internet of Things
15	No new readings	Project, Review for Final Exam
16	No new readings	Final Exam

Notes on schedule:
- The project is due on Friday 5pm on week 15.
- The mid-term exam will be held on week 8.
- The final exam will be held on the University scheduled date in week 16

XII.   Syllabus Revision History

- October 25, 2016 – Genesis