Course Outlines of
CSE491: Cloud Computing
Semester: Spring 2020

Faculty Information:

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Course Description:
This course is an introduction to cloud computing, where we will study the elementary topics related to cloud computing, virtualization, containerization, distributed storage system such as file storage, block storage, Object storage, message broker, cache, relational database management systems such as MySql, MariaDB, Postgresql, clustering in database, basic components of a cloud, software defined networking. We will us open-source projects for practical uses of cloud computing.

Pre-requisite(s): None

Co-requisites:
None

Course Outcomes:

CO 1	**Recognize** the fundamental concepts of cloud computing,
CO 2	**Explain** virtualization and containerization.
CO 3	**Investigate** different architectures of distributed storage systems
CO 4	**Illustrate** message broker and cache.
CO 5	**Discuss** the fundamental concepts of relational database management systems in cloud and clustering.
CO 6	**Comprehension** of cloud components.
CO 7	**Develop** a simple cloud and object storage system using open-source projects

Course Outlines:

Sr. No.	Topic details	Time allocation
1	Cloud computing basic; Virtualization in cloud	**Week 1,2**
2	Containerization; Storage systems - File storage, Block Storage, Object Storage	**Week 3,4**
3	Message Broker - RabbitMQ/ ZeroMQ/Qpid; Cache - Memcached/Redis	**Week 5,6**
4	Review and midterm	**Week 7**
5	RDBMS - MySql, MariaDB, Postgresql ; Components of a cloud	**Week 8**
6	Software defined networking; PackStack installation	**Week 8,9**
7	Object storage system OpenStack Swift installation	**Week 10-12**
8	Course Review/Discussion	**Week 13**

Course Assessment Methods:

Theory/Lab Assignments

Theory/Lab Assignments shall be designed to ensure that the students have the required knowledge to analyze and design control systems.

Quizzes

Quizzes will be designed to test the students' understanding in the course and to assess various course outcomes

Examinations

The exam shall contain problems designed to test knowledge and comprehension, to analyze control systems and/or to apply the engineering problem solving method.

Assessment Methods vs. Course Outcomes:

Assessment Methods	CO 1	CO 2	CO 3	CO 4	CO 5	CO 6	CO 7
Theory/Lab Assignments	X	X	X	X	X	X	X
Quizzes	X		X	X	X		X
Examinations	X	X	X	X	X	X	X

Textbook:

1	CloudComputingTheoryAndPractice by Dan C.. Marinescu.
2	Cloud Computing: from beginning to end by Ray J. Rafals

Supporting Tools:

Lecture Notes and other material will be made available on the TSR.(\\tsr\Spring-2020\CSE\JNM)

Course Policies:

Class Policy

- Classroom and laboratory attendance is mandatory. You should come to the classroom before the instructor. Late comers may/ may not be allowed to enter the classroom. Students who are absent over 30% of the class time, will not be allowed to enter the final examination.
- You should turn off your cellular phone before entering the classroom. You should not leave the classroom to make or take cellular phone calls.
- You should bring a notepad and/or a writing instrument to every class and take detailed notes.
- You should pay attention to the instructor and participate in class discussions.

Honor Code

Any form of cheating, plagiarism, and/or academic dishonesty will result in an "F" grade in the course.

Late Work and Examinations

Late assignments will not be accepted. Students who know that they are going to miss class should make arrangements in advance. Exams will be closed book. There will not be any make-up for quizzes and midterm exams except the cases of hospitalization or detention

Grading Policies:

Student's grades are assigned according to the grading scale of the BRAC University Undergraduate Study and Examinations Regulations. In addition, the faculty are allowed to take into consideration the class average and standard deviation to reflect the actual class performance for student grade assignment. The grades at the university will be indicated in the following manner:

Marks	Grades
90-100	A (4.0)
85- <90	A- (3.7)
80- <85	B+ (3.3)
75- <80	B (3.0)
70- <75	B- (2.7)
65- <70	C+ (2.3)
60- <65	C (2.0)
57- <60	C- (1.7)
55- <57	D+ (1.3)
52- <55	D (1.0)
50- <52	D- (0.7)
<50	F (0.0)
P	Pass
I	Incomplete
W	Withdrawal
R	Retaken

Course Assessment Methods:

Guidelines for CSE course teaching in BRAC University. The following assessment methods are based on Theory Course only.

Section	Marks (%)
1. Participation in class	5 %
2. Quizzes/Class Tests/Assignments/	45 % - 55 %
3. Mid Term Examination	10 %
4. Lab	20 % - 30 %
5. Final	10%
Total	**100 %**

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