COURSE SPECIFICATIONS
Form

Course Title: Advances Topics in Cloud Computing

Course Code: 14016489-3

Date: 2018 –10 – 21.	**Institution**: Umm Al‑Qura University

College: College of Computer and Information Systems **Department**: Department of Computer Science

A. Course Identification and General Information

1. Course title and code: <u>Advances Topics in Cloud Computing 14016489-3</u>
2. Credit hours: <u>3</u>
3. Program(s) in which the course is offered. <u>Master of Computer Science (Artificial Intelligence)</u>   (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course <u>Dr. Murtaza Ali Khan</u>
5. Level/year at which this course is offered: <u>2/3</u>
6. Pre-requisites for this course (if any):
7. Co-requisites for this course (if any):
8. Location if not on main campus:

9. Mode of Instruction (mark all that apply):

a. Traditional classroom		percentage?	100
b. Blended (traditional and online)		percentage?	
c. E-learning		percentage?	
d. Correspondence		percentage?	
f. Other		percentage?	

Comments:

B Objectives

1. The main objective of this course

Advanced topics selected from current literature that deals with theoretical foundations and advances in Cloud Computing. The specific content of an offering of the course should focus on a specific area of Cloud Computing.

2. Describe briefly any plans for developing and improving the course that are being implemented. (e.g. increased use of the IT or online reference material, changes in content as a result of new research in the field)

The contents will be prepared from globally recognized text books, web-based reference materials and latest research in the field. Practical home works and a term project related to latest tools and techniques will also be designed. At the end of the course, a seminar day can be announced in which students can present their course projects and literature review.

C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

Course Description:

The course will teach state of the art theoretical and practical knowledge in the field of Cloud Computing. Students will be assigned assignments and project to get hands on experience. At the end of the course, a seminar/presentation event will take place in which students will present their course projects/research work.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
TBA (To Be Announced)	1-14	42

2. Course components (total contact and credit hours per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other	Total
Contact Hours	Planned	42					42
	Actual	42					42
Credit	Planned	3					3
	Actual	3					3

3. Individual study/learning hours expected for students per week.

9-12

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategies

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). Second, insert supporting teaching strategies that fit and align with the assessment methods and targeted learning outcomes. Third, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Curriculum Map

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	An ability to recognize the use of Cloud Computing in solving real life problems (e.g., cloud as service, cloud as storage)	Lecture, Group discussion	Exams, HWs, Quizzes
1.2	An ability to identify current techniques, skills, and tools necessary for the development of secure Cloud based systems	Lecture, Group discussion	Exam, HWs, Quizzes
2.0	**Cognitive Skills**		
2.1	Design, implement and evaluate system, process, component, or program on Cloud (e.g., Cloud data repository)	Lecture, Project	Exam, HWs
2.2	Investigate real world problems in the context of Cloud Computing and design innovative solutions	Lecture, Case studies,	Exams, Reports
3.0	**Interpersonal Skills & Responsibility**		
3.1	Demonstrate own learning and professional development	Group discussion, Project	Project Report, Project presentation
3.2	Work effectively in groups to accomplish a common goal and show leadership qualities	Group discussion, Project	Project Report, Project presentation
3.3	Act ethically and responsibly with high moral standards	Lectures, discussion	Anti-plagiarism software, paper review, presentation
4.0	**Communication, Information Technology, Numerical**		
4.1	Ability to communicate clearly in oral and written form with range of audiences	Project	Project Report, Project presentation
4.2	Use of latest development tools related to Cloud Computing	Lecture, Project	Project Report, Project presentation
4.3	Demonstrate the ability to use mathematical and statistical techniques require to solve problems related to Cloud Computing	Lecture, Case studies, Project	Exams, Project Report, Project presentation

5.0	Psychomotor (if any)		
5.1	Ability to operate and construct necessary tools required for Cloud Computing	Research activities, Projects	Project, HWs, presentations

5. Assessment Task Schedule for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	**Week Due**	**Proportion of Total Assessment**
1	HW 1	2	5%
2	Quiz 1	3	5%
3	HW 2	5	5%
4	Quiz 2	6	5%
5	Midterm Exam	8	20%
6	Project	10	30%
7	Final Exam	15	30%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic counseling. (include the time teaching staff are expected to be available per week)
i.   Office Hours for student counseling and support – Three hours/week
ii.   Availability of teaching Staff on e-learning resources like uqu20/Piazza

E Learning Resources

1. List Required Textbooks
i.   Decided by the teacher
2. List Essential References Materials (Journals, Reports, etc.)
ii.   Recent Papers in Cloud Computing Research
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

i.   Springer Journal of Cloud Computing
         https://link.springer.com/journal/13677
     ii.   IEEE Transactions on Cloud Computing
         https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=6245519

4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.
i.   Microsoft Azure Cloud Account   ii.   Amazon Web Services (AWS) Cloud Account

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
i.   One classroom (25 seats)   ii.   One lab (25 PCs)
2. Technology resources (AV, data show, Smart Board, software, etc.)
iii.   Whiteboard   iv.   Internet connection
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Procedures

1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching
i.   At the end of semester, course evaluation forms will be filled by the students electronically or on paper. The evaluation forms will be anonymous.
2. Other Strategies for Evaluation of Teaching by the Instructor or the Department

i. Course file of the course will be maintained and evaluated by some senior faculty member.
ii. Instructor evaluation is performed for every semester
3. Procedures for Teaching Development
i. Constant reading of new books and research papers, attending related conferences and workshops, participation in the research groups and blogs etc.
4. Procedures for Verifying Standards of Student's Achievement (e.g. check marking by an independent member teaching staff of a sample of student's work, periodic exchange and remarking of tests or a sample of assignments with staff members at another institution)
i. A random sample from the marked papers may be evaluated by an independent senior faculty member.
ii. Departmental quality assurance committee can review the students grades and course files to make sure that high standard of teaching is maintained.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for developing it.
i. Department has curriculum committee that periodically review courses.
ii. Faculty council review offer program as per need.

Name of Course Instructor: Dr. Murtaza Ali Khan

Signature: *Murtaza Ali Khan* **Date Completed:** Oct. 22, 2018

Program Coordinator: _____

Signature: _____   **Date Received:** _____