Course Outline

Course Number: IST 265  
Course Title: Database Cloud Computing Concept  
Credits: 3

Hours: Lecture/Lab/Other 2/2  
Pre-requisite & Co-requisite: IST 109 and IST 253; IST 262

Implementation: Semester/Year Fall/2018

Catalog Description

Database Cloud Computing Concept teaches database deployment that uses cloud platforms to program and administer database in a variety of cloud computing scenarios while managing the platform for scalability, troubleshooting performance issues, and implementing strong security.

Is course New, Revised, or Modified?

New

Required texts/other materials:

TBA

Revision date: October 8, 2017

Course coordinator: Queen E. Okike-Iroka. Ed. D.  
Assistant Professor  
Coordinator Information Systems  
E-mail: okikeq@mccc.edu  
Phone #: (609) 570-3464

Information resources: (Describe the primary information resources that support the course, including books, videos, journals, electronic databases, websites, etc. To request new materials for your course, use the library request form at: www.mccc.edu/student_library_course_form.shtm)

Other learning resources

Microsoft Azure Software will be used as a learning system and it is free for students.
Course Competencies/Goals:

The student will be able to:

1. Explain how to use SQL Azure from classic Windows applications, ASP.NET and Windows Communication Foundation.
2. Create Database Cloud
3. Perform management, performance, scalability, and troubleshooting.
4. Addresses the all-important issue of securing the data.
5. Properly design for high-performance in a cloud environment.
6. Adopt the new Federations feature in SQL Azure.

Course-specific General Education Knowledge Goals and Core Skills.

General Education Knowledge Goals
Goal 1. Communication. Students will communicate effectively in both speech and writing.
Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

MCCC Core Skills
Goal A. Written and Oral Communication in English. Students will communicate effectively in speech and writing, and demonstrate proficiency in reading.
Goal B. Critical Thinking and Problem-solving. Students will use critical thinking and problem solving skills in analyzing information.
Goal C. Ethical Decision-Making. Students will recognize, analyze and assess ethical issues and situations.
Goal D. Information Literacy. Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.
Goal E. Computer Literacy. Students will use computers to access, analyze or present information, solve problems, and communicate with others.

Units of study in detail.

Unit I Getting Started with SQL Database

Learning Objectives
The student will be able to...

- Discuss SQL Database (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B)
- Explain Cloud Computing (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B)
- Create a SQL Database Instance (Course Competencies 2; Gen Ed Goal 4; MCCC Core Skills B, D & E)
- Create the first database in cloud (Course Competencies 2; Gen Ed Goal 4; MCCC Core Skills B, D & E)
- Create logins and users (Course Competencies 2; Gen Ed Goal 4; MCCC Core Skills B, D & E)
- Explain billing for SQL Database (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B).

Unit II Design Considerations

Learning Objectives
The student will be able to...

- Explain design factors (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B).
- Discuss design patterns (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B).
- Discuss combining patterns (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B).
- Explain SaaS Applications and Federations (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B).
Unit III_Security

*Learning Objectives*

*The student will be able to...*

- Discuss confidentiality, integrity, and availability (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B).
- Secure data by encryption, hashing and certificates (Course Competencies 4; Gen Ed Goal 4; MCCC Core Skills B, D & E).
- Access control using authentication, authorization, SQL Database Firewalls and Internal Firewalls (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B).
- Migrate databases and data cloud (Course Competencies 5 & 6; Gen Ed Goal 4; MCCC Core Skills B, D & E).
- Define application deployment factors (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B).
- Create a data service, connect it to models and create client application (Course Competencies 2; Gen Ed Goal 4; MCCC Core Skills B, D & E).

Unit IV_Window Azure and ASP.NET

*Learning Objectives*

*The student will be able to...*

- Create SQL reports, configure SQL Data synchronization (Course Competencies 2; Gen Ed Goal 4; MCCC Core Skills B, D & E).
- Create cloud service (Course Competencies 2; Gen Ed Goal 4; MCCC Core Skills B, D & E).
- Deploy ASP.NET application in Window Azure (Course Competencies 3; Gen Ed Goal 4; MCCC Core Skills B, D & E).
- Define high performance concepts (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B).
- Build and manage shard (Course Competencies 2 & 5; Gen Ed Goal 4; MCCC Core Skills B, D & E).

Unit V_Window Azure Mobile Services

*Learning Objectives*

*The student will be able to...*

- Discuss Azure mobile services (Course Competencies 1; Gen Ed Goal 1; MCCC Core Skills A & B).
- Browse data, create columns, permissions and scripts (Course Competencies 2 & 5; Gen Ed Goal 4; MCCC Core Skills B, D & E).
- Create advanced settings such as push, identity and scale (Course Competencies 2 & 5; Gen Ed Goal 4; MCCC Core Skills B, D & E).
Evaluation of student learning:

The final grade is a composite based upon:

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<tr>
<th>Component</th>
<th>Weight</th>
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<tr>
<td>Successful completion of Projects</td>
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<tr>
<td>Tests/Quizzes</td>
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<td>Midterm</td>
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<td>Final Examination</td>
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<tr>
<td>Total</td>
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Academic Integrity Statement: [Include a statement affirming the college's Academic Integrity policy and any specific implications for the course. See http://mlink.mccc.edu/omb/OMB210.pdf]