**CIS 6300 Business Data Management**

**Semester: Fall 2019**

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| **Office: HCOB 3289** | **Office Hour: There is no set office hours, however, your questions will be answered within 24 hours.** |
| **Phone: (269) 387-5524** | **Class Website: WMU eLearning [D2L]** |
| **CIS 6300 – Online Course** | **Materials posted on eLearning Course site every Tuesday & Thursday by 7 pm** |

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| MBA Goal |
| ***To provide excellent targeted education, primarily for business***  ***professionals and international students*** |

**Introduction**

CIS 6300 is designed to provide knowledge and skills in the areas of relational and non-relational databases, data retrieval, report generation, and enterprise application systems. A relational database (RBD) is a database that supports front-end business applications and stores data as relations as defined in the relational model. It has been the leading data storage model and essential component for data-centric applications in the last 40 years, and will remain so for years to come. ERP/CRM systems, on the other hand, are the most widely used enterprise applications software. CIS 6300 offers students the opportunity to acquire knowledge and skills in RDB and ERP/CRM systems.

**Course Objectives**

1. Students learn database modeling (i.e., ER diagramming), relation design (e.g., normalization).
2. Students perform tasks such as database implementation, administration and data security.
3. Students work with data to generate queries and reports using Structured Query Language (SQL) and related Business Intelligence (BI) software.
4. Students get hand-on experience working with SAP Business One or Microsoft Dynamics CRM, learn Enterprise Software architecture and client/server platform.
5. Students are also introduced to NoSQL Database and Big data concepts.

**Course Content**

The focus of this course is Business data management. Most businesses use Enterprise Resource Planning (ERP) systems such as SAP to run daily business operations. Customer Relationship Management (CRM), on the other hand, lets organizations store and manage prospect and customer information such as contact info, accounts, leads, sales opportunities in one central location. Since database is at the core of any ERP/CRM systems, Design, Development, Implementation, and Administration of RDB are discussed for several weeks at the beginning of the semester. Once the foundation of Relational Database is laid out, concepts related to Structured Query Language (SQL), Business Intelligence (BI), Data Warehouse (DW), Enterprise Architecture, importance of Database in Business, Data Migration, Data Retrieval, and Database Administration are discussed. Students use **SAP Business One** or **Microsoft Dynamics CRM** software during the last **four to five sessions** of the semester. Given that this is a graduate course, emphasis is given on managerial decision making. Necessary software to go along with this course are **Microsoft SQL Server** and **SAP Business One** or **Microsoft Dynamics CRM**.

In order to have a clear understanding of the subject matter, this course is structured around a mixed mode of lectures and technical assignments. Therefore, we will have a mix of conceptual/theoretical lecture and assignment in most weeks. Major topics covered in class include:

* Relational database concept, Conceptual data modeling (ER diagrams) and Normalization (logical database design)
* Database design, development and implementation
* Database Administration – Data Dictionary, Data Integrity, Data Security
* Data retrieval using Structured Query Language (SQL)
* Document Oriented Database (NoSQL database)
* ACID and BASE data consistency models
* Business Intelligence - Data Warehousing, Online Analytical Process (OLAP)
* ERP Architecture, ERP software – **SAP Business One/Microsoft Dynamics CRM**
* Database triggers and stored procedures (if time permits)

This is a reasonably demanding course with multiple Homework Assignments, Quizzes, and Exams. Since this course covers an entire semester in 7.5 weeks, it’s fast-paced. Due to the rich content of this course and no Face-To-Face meeting times, you are expected to learn many necessary details by previewing the reading assignments, listening to the online lectures, going over posted materials, and searching for learning materials and solutions on the internet. You must install the latest version Virtual Private Network (VPN) and Microsoft SQL Server Client (MS SQL Server Client) on your Laptop/Desktop PC. MAC users can download SQL Operations Studio. There will be instructions for downloading and installation of VPN and MS SQL Server. While the instructor will provide necessary guidance, your personal interests in exploring new technologies are a must and indispensable to your learning in this course. In this course, SQL Server will be the primary DBMS, however, we may use Access and/or other databases in assignments. We may also use client/server tools such as OLE DB/ODBC to illustrate and/or develop client/server applications that use both local and remote databases.

**Text Book**

Database Systems: Introduction to Database and Data Warehouses by Nenad Jukic, Susan Vrbsky, Svetlozar Nestorov [REQUIRED], Pearson (2014). ISBN 9781943153190

**Course Requirements**

Major course components and weight for each component is provided below:

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| **Requirement component** | **Points** |
| Assignments, 6 @ 25 points each | 150 |
| Quizzes, 7 @ 10 points each | 70 |
| Discussion items | 30 |
| Midterm Exam | 100 |
| Final Exam (Comprehensive) | 100 |
| **Total** | **450** |

Details on each requirement component are given below.

**Assignments:**

To enhance your learning of the course materials, 6 assignments will be given throughout the semester. Each assignment is primarily dedicated to a specific subject/topic covered in class. All these assignments must be done individually. You are encouraged to work with your classmates. However, your collaborations with others are limited to information sharing and mutual learning only. Please turn in your own electronic copy of the assignment on the course website (eLearning site). Cheating in this class is totally unacceptable and any such violation will lead you to withdrawal from this class or receive an **E** as the final grade. You are welcome to discuss assignments with other classmates, however, you are not allowed to collaborate with other students and turn in assignments that are identical to other submitted assignments. Each assignment is worth 20 points. All assignments are posted on the course website with a specific due date. You are expected to turn in every assignment on or before the due date. Penalty will be applied if you turn in any assignments late (see below).

**SAP Business One/CRM Exercises:**

Students work on several SAP Business One exercises.

**Quizzes:**

Seven (7) quizzes @ 10 points per quiz will be given. **Quizzes** will be posted on eLearning course site on the specified date at **6:30 PM**. You will have 48 hours to take the quiz. Maximum allowed time for each quiz is **15** minutes. **No make-ups for missed quizzes.**

**Exams:**

There will be a **Midterm**, and a **Final** exam. You should not share any information with others to answer exam questions. Due to the nature of this course, all exams will be ***open-book*** and ***open-notes***. More information will be available prior to each exam.

**Discussion Board Items:**

This online course requires you to participate in 2 discussions/week on the discussion board. You will need to provide answers to questions posted on the discussion board and the answers are graded. Lectures are posted in the form of PowerPoint (PPT) slides, videos, handouts, cases, etc. Each week, you must read assigned textbook chapters, go over the PPT slides, videos, handouts, work on assignments. You may also post your questions on topics and assignments of the week on eLearning discussion board. I will be checking your questions several times a week and provide answers as soon as possible.

**Grading Policy:**

Final course grades will be determined based on your total percentage (**S**). The following fixed percentage cutoffs will be used:

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| **A** | 92  **S**  100 |
| **BA** | 87  **S**  92 |
| **B** | 81  **S**  87 |
| **CB** | 75  **S**  81 |
| **C** | 70  **S**  75 |
| **DC** | 65  **S**  70 |
| **D** | 60  **S**  65 |
| **E** | **S**  60 |

**Late Penalty for Assignments:**

All assignments must be turned in on or before the specified due date and time. Late assignments will be penalized. Excuses are not acceptable for discount on late penalty. Meeting deadlines for class assignments is very important. **Unless other arrangements have been made in advance with the instructor, all assignments must be turned in on or before the specified due date.** Each assignment can only be late by one day and it will be subject to a penalty of 20% off of its maximum grade. **No assignment will be accepted if it is late more than a day.**

**Academic Honesty:**

Students are responsible for making themselves aware of and understanding the University policies and procedures that pertain to Academic Honesty. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. The academic policies addressing Student Rights and Responsibilities can be found in the Undergraduate Catalog at <http://catalog.wmich.edu/content.php?catoid=24&navoid=974> and the Graduate Catalog at <http://catalog.wmich.edu/content.php?catoid=25&navoid=1030>. If there is reason to believe you have been involved in academic dishonesty, you will be referred to the Office of Student Conduct. You will be given the opportunity to review the charge(s) and if you believe you are not responsible, you will have the opportunity for a hearing. You should consult with your instructor if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test.  
  
Students and instructors are responsible for making themselves aware of and abiding by the “Western Michigan University Sexual and Gender-Based Harassment and Violence, Intimate Partner Violence, and Stalking Policy and Procedures” related to prohibited sexual misconduct under Title IX, the Clery Act and the Violence Against Women Act (VAWA) and Campus Safe. Under this policy, responsible employees (including instructors) are required to report claims of sexual misconduct to the Title IX Coordinator or designee (located in the Office of Institutional Equity). Responsible employees are not confidential resources. For a complete list of resources and more information about the policy see [www.wmich.edu/sexualmisconduct](http://www.wmich.edu/sexualmisconduct)<<http://www.wmich.edu/sexualmisconduct>>.

**MBA Learning Goals and Objectives**

**Following MBA Learning Goals are incorporate in this course:**

***Goal 3: Students will be effective decision makers***

3B MBA students will be able to illustrate the role of information technology in supporting business

3C MBA students will integrate functional business knowledge

Tentative Lecture Schedule

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| Date | Topic | Chapters |
| Aug 29 | * Going over the Syllabus * Introduction to database systems * Database Requirements and ER Modeling | Chapters 1, 2 |
| Sep 3 | * Relational database modeling * Introduction to SQL Server 2014 * **Assignment1** * **Quiz1** | Chapter 3 |
| Sep 5 | * Update Operations, Update Anomalies, and Normalization * Data Integrity, Business Rules, Database Schema * Data Structures * **Quiz2** | Chapter 4, Supplemental Materials |
| Sep 10 | * Relational Algebra, Structured Query Language (SQL) * **Assignment2** * **Quiz3** | Chapter 5, Supplemental Materials |
| Sep 12 | * Structured Query Language (SQL) * Database Triggers, Stored Procedures * Database Implementation and Use * **Assignment3** * **Quiz4** | Chapter 5, 6 Supplemental Materials |
| Sep 17 | * **Midterm 🡪 (Take Home) + eLearning** * Data Security, DBMS Functionalities and Database Administration | Supplemental Materials |
| Sep 19 | * Introduction to Document-Oriented (NoSQL) database. * Handling Unstructured Data – Introduction to Big Data * **Assignment4** | Appendix J  Supplemental Materials |
| Sep 24 | * Document-oriented (NoSQL) database. * Handling Unstructured Data – Introduction to Big Data * **Introduction to SAP Business One/Microsoft Dynamics CRM** * **Quiz5** | Supplemental Materials |
| Sep 26 | * + Introduction to ERP   + ERP Architecture/Design * **SAP Business One/Microsoft Dynamics CRM** * **Assignment5** | Appendix C  Supplemental Materials |
| Oct 1 | * Business Intelligence and Data Warehouse/Data Mining Concepts * Understanding ERP Configuration/Implementation * **Quiz6** | Chapter 7, 8  Appendix G  Supplemental Materials |
| Oct 3 | * Data Warehouse Implementation and Use * **SAP Business One/Microsoft Dynamics CRM** * **Assignment6** * **Quiz7** | Chapter 9  Supplemental Materials |
| Oct 8 | * Data Governance and Master Data Management * **SAP Business One/Microsoft Dynamics CRM** | Appendix D Supplemental Materials |
| Oct 10 | * Review for the Final Exam |  |
| Oct 15 | * **Final** (Comprehensive) 🡪 **Take Home + eLearning** |  |

**Note:** This lecture schedule is tentative and is subject to change.