University *of* San Diego

ITMG 320 Database Design and Business Intelligence Implementation

Section 1-4:00 – 5:20 PM TTH Barcelona 221 Spring 2019

INSTRUCTOR
Name: Dr. Carl M. Rebman Jr., Ph.D.
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Office Hours: Tuesday 1:50 – 2:20 PM & 5:20PM – 5:50 PM
                Wednesday 2:30 PM - 5:30 PM
                Thursday 1:50-2:20 PM & 5:20PM – 5:50 PM
                other times by appointment

Teaching Schedule: Barcelona 221 --- 2:30-3:50 TTH, 4:00-5:20 TTH
Meeting Schedule (Dead hours): Every 1st/2nd TUE of the month (faculty/area), and every 2nd/4th THR (senate)
Email: carlr@sandiego.edu
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REQUIRED TEXT:
TBA, many handouts

REQUIRED ONLINE ACCESS CODES TO PURCHASE:
TBA

Gmetrix – Gmetrix is a great study tool for the MOS Excel certification test. It is free and will be utilized for homework assignments and as a study tool. You can complete and check your Gmetrix assignments and scores by logging into the following site on any PC computer http://www.gmetrix.net/Login.aspx

Computer Labs are available on campus in: Serra and Olin Halls. Additional computers are available in Copley Library and the Law Library. Check for current operating hours. **Note: It is strongly recommended that students use a PC with Microsoft Excel 2016 for the course. Incomplete or late assignments due to computer compatibility issues will not be issued an extension!**

Other Readings: May be placed on E-Reserves in the main library or handed out in class.
Required Equipment: One USB memory stick, or other type of backup device for files, to be brought to class **DAILY.**

DESCRIPTION OF COURSE
Humans produce a LOT of data - according to EMC, we crossed 4 Zettabytes (1 trillion Gigabytes) of data worldwide in 2014. That data is used for a wide range of useful things - health care, web search, maps, weather simulation, scientific research, etc. The massive volume of data being produced and consumed for these purposes has made Big Data a very hot topic these days, and NYU even has its own Data Science Institute.

Database systems are tools we can use to store and manipulate all that data for useful ends. The goal of this course is to teach you how to create databases and to use database systems productively. This includes the following topics:

* Modeling Enterprise Data with ER Diagrams

- SQL, as a language for both Data Manipulation and Data Definition

- Logical and Physical Design of Databases

- Transaction Processing and Concurrency

- Online Analytical Processing

- Using databases on backend servers

- Using databases with interconnectivity to Business Intelligence

Note that this course explicitly doesn't include much in the way of hands-on implementation of internals of database management systems (e.g. B+ trees or shadow paging). Our focus will be on using existing database systems to accomplish practically useful things.

A majority of business data are stored in traditional data systems, such as relational databases. While other data sources, e.g., social media, messaging data, and machine sensors, are also increasing in importance, the data stored in traditional data systems are often of central importance in business analytics projects. To access and analyze these data, business analytics professionals need knowledge of relational databases and SQL. Consequently, SQL and relational database skills are two of the most sought after skills by recruiters that hire business analytics professionals (Mamonov et al. 2014; Wixom et al. 2014).

COURSE OUTCOMES
After taking this course you will be able to:

- describe basic relational database and data warehouse concepts
- create and interpret data models implemented using Entity Relationship Diagrams (ERD)
- query databases using SQL
- describe basic principles of visual perception and cognition and design thinking related to data visualization
- identify appropriate visualizations for different types of data and best practices for creating visualizations
- use interactive data visualization to understand and analyze data
- create effective visualizations and data stories to communicate data analysis results
- Perform good presentation skills
- Demonstrate technology research, writing, and evaluation skills

TEACHING METHOD
*The student is expected to have read materials or completed assignments as listed on the course schedule **prior to each class.** The class discussions/lectures are intended to illustrate the primary concepts from each section and to provide an opportunity to answer any questions that may result from the readings.*

EXAMS/QUIZZES
The format for exams/quizzes will vary between true/false, multiple choice, matching/short answer and computer based. Most quizzes will be announced in advance although you should be prepared for the possibility of an unannounced quiz .The format for the exams will be primarily computer based with some possible multiple choice questions. There are **NO** make-up exams or quizzes. Students missing a scheduled exam due to a **PRE-ARRANGED** excused absence will be allowed to take a final exam that will count as 50% of his/her final grade.

Student Disability Policy
The University of San Diego complies with the American with Disabilities Act and Section 504 of the Rehabilitation Act It is a University of San Diego Disability Services policy that when students are scheduling exams (midterm exams or final exams) in the Disability office, they must submit an "Authorization to Administer Exam" at least one week prior to the exam date. If a student does not give Disability office this notice, the Disability office can deny them the right to the accommodation, as the Disability office is not given adequate time to prepare (and set up office space during established exam scheduling times.) Please provide me (your instructor) with a Letter of Accommodation drafted by the Disability office as soon as possible. There are no retroactive accommodations for Disabled students. As your instructor I am not obligated to provide accommodations until I receive the Letter of Accommodation drafted by the Disability office. If a student does not give the Letter of Accommodation to me (your instructor), within adequate time to make exam arrangements, I am not obligated to fulfill any such request. If you

have any questions or concerns about the process please contact, the USD Disability Services office (Serra Hall, Rm 300), phone at 619-260-4655 or via email at disabilityservices@sandiego.edu as soon as possible.

Disability Services for Excel Certification exam

Those students who are enrolled with the USD Disability Services Center on campus will have the opportunity to select to take their Excel certification exam in the Disability Service Center office. Any student who wishes to exercise this option must complete this form (www.certiport.com/ada) at least three weeks prior to taking the exam. In order to protect student confidentiality there is to be no discussion whatsoever pertaining to your personal disability accommodations. Discussions will only be done via email or in office hours.

Student Athletes

You are responsible for providing me advanced written notice, (email), any time you will be unable to attend class. You are also responsible for determining alternate dates/times to make up missed work in class. Without written notice, no assignments, quizzes or tests, either due or taken in class, can be made up.

Absence:

Absence in the event of an officially sanctioned University event, in which the student is a participating member, may be excused if the instructor is notified, in writing, by the faculty sponsor (coach, instructor, etc.) of such activity prior to the absence. *Each student is allowed* **ONE** *absence with prior notification and all other absences are* **UNEXCUSED**, *including doctor's excuses.*

Academic Dishonesty:

You, your colleagues, faculty, staff, and alumni are the University of San Diego. These and many other persons have worked very hard since the founding of USD in 1949 to build a quality university. The philosophy and mission of USD http://www.sandiego.edu/about/mission-vision-values.php emphasizes the idea of personal and academic integrity. The following is a synopsis of the academic integrity policy. For more information click on this hyperlink http://www.sandiego.edu/associated-students/branches/vice-president/honor-council/integrity-policy.php or download this pdf http://www.sandiego.edu/conduct/documents/HonorCode.pdf

"All members of the University community share the responsibility for maintaining an environment of academic integrity since academic dishonesty is a threat to the University. Acts of academic dishonesty include: a) unauthorized assistance on an examination; b) falsification or invention of data; c) unauthorized collaboration on an academic exercise; d) plagiarism; e) misappropriation of resource materials; f) any unauthorized access of an instructor's files or computer account; or g) any other serious violation of academic integrity as established by the instructor."

Academic Dishonesty will not be tolerated in any form. Helping each other study is anticipated. However, only original work will be accepted. There will be no sharing of materials, wearing hats, or using cell phones/PDAs during tests. All assignments unless otherwise noted are individual assignments. **If an incident of academic dishonesty occurs in this course the student could receive a grade of "F" for the semester and could possibly face further disciplinary action.**

Attendance/Participation/Professionalism:

Attendance will be taken on a semi-regular basis. It is in the student's best interest to attend class every day. It is understood that events may cause one to have to miss class to which advance notice is preferred. 100 points are allocated towards **attendance, class participation and professionalism**. Failure to be in class when attendance is taken can result in 0 points awarded for that session. This can also include being late after attendance has been taken or leaving class early. **Furthermore, failure to attend more than 50% of all class lecture and lab sessions will result in failing the course**. Lastly keep in mind that attendance, participation, and professionalism are three separate items, that is, you need to more than just show up; you are expected to be prepared and contribute to class activities and discussion. Also engaging in Internet surfing, IMs, games, or sending emails during class will not be tolerated and will result in a reduction in points.

E-Mail

Due to the subject matter of this course it is very important that every student obtain an email account either from the University or from a private provider of the student's selection as various assignments will be need to submitted via email **(REFER TO ASSIGNMENT ONE FOR HOW TO USE PROPER SUBJECT LINE)** as well as in **HARD PAPER COPY.** In addition course announcements may be distributed via electronic format. It is the student's responsibility to check their email account on a regular basis (outside of class) during the duration of the course. It is recommended that students should retain a copy of all email correspondence with the instructor until the end of the semester. **Unless otherwise directed no email should be sent to the instructor during class sessions.**

EMAIL MESSAGE FORMAT: *SUBJECT LINE SHOULD START WITH*:

ITMG 100 XX (where XX would be your section number) and then followed by subject description

Example MUST USE EXACT TEXT ⟶ ITMG 320 Assignment One

Assignments:

The class is divided into two sections, lab and lecture. **You are responsible for any of the materials/course announcements** that are discussed in either session. **You are also responsible for materials assigned that may not be covered in class.** The lecture will involve current topics in additional to assigned readings. The labs will be designed for you to learn application software and when time permits to work on your assignments.

- *UNLESS OTHERWISE SPECIFIED ALL ASSIGNMENT ARE INDIVIDUAL ASSIGNMENTS.*

- **Late assignments will be accepted for up to three-quarters-credit (75% or 25% OFF) on TAKE-HOME ASSIGNMENTS.**
  - **You have UP TO ONE WEEK AFTER THE ASSIGNMENT WAS DUE TO TURN IN LATE WORK**
  - **AND YOU MUST EMAIL ME WHEN YOU HAVE SUBMITTED YOUR LATE ASSIGNMENT.**

- **THERE ARE NO MAKE-UPS FOR IN-CLASS ASSIGNMENTS.**

- *Make sure you make backups for all work completed. I will give no exceptions for lost or damaged disks/USB/emails or files!!*

- Check the assignment calendar on the course website for due dates of your assignments. The assignments are to be organized in **order** and **labeled** correctly when turned in to **receive FULL CREDIT**.

  FILE ATTACHMENTS: Assignments that require you to submit a file (word, excel, powerpoint, etc) should be label/saved as
  YOUR_LAST_NAME_ASSIGNMENT_XX.XXX (where XX is the assignment number and .XXXX would be the file extension----i.e. **Rebman_Assignment_One.docx**)

Unless indicated by the instructor *you must submit both a paper and electronic copy of your assignments*. Failure to submit both paper and electronic copies so will result in 0 points for the assignment.

Grade Weights	Percent
TEST ONE	10%
MOS CERTIFICATION EXAM	15%
FINAL EXAM/PROJECT	20%
Homework, In-Class Assignments, Quizzes, Projects, Presentations	45%
Attendance/Class Participation and Professionalism	10%
TOTAL PERCENT	100%

Grading

During the course of a semester a student might have concerns or challenges and wish to have a grade appeal. This is fine, however, any grade petition/appeal must be done **within two days** after the grade has been returned. All grade petitions/appeals can be done in person but MUST also accompanied with an email petition/appeal submission. All grade petition/appeal must be resolved after one week. *NO GRADES or GRADE PETITION/APPEALS will be entertained after ONE WEEKS.* Once this time has elapsed the window for grade reconsideration is expired. Please note that no grade appeals will be entertained during a class session, you must either come to me office hours, or contact me via phone or email.

Scale	Percent	Scale	Percent
A+	>97.0%	C	73.0%-76.99%
A	93.0%-96.99%	C -	70.0%-72.99%
A-	90.0%-92.99%	D+	67.0%-69.99%
B+	87.0%-89.99%	D	63.0%-66.99%
B	83.0%-86.99%	D-	60.0%-62.99%
B-	80.0%-82.99%	F	<59.99%
C+	77.0%-79.99%		

Important NOTICE: *This grading scale is extremely strict. You must have the exact minimum number of points to receive the grade you desire, that is exactly 930 is an A, but 92.9 (or 929.9999) is an A-, and so on. Therefore note that in advance all petitions to round up to the higher point value will be denied.*

Also note the instructor reserves the right to modify or change any part of this syllabus at any time.