Syllabus: Course INFSYS 6849
Data Warehouse Design and Implementation

About this course:

Course Materials

Text Books:

Data Warehousing: Fundamentals for IT Professionals by Paulraj Ponniah; 2nd Edition or newer. Publisher: Wiley, John & Sons, Incorporated

Data Warehousing in the Age of Big Data by Krish Krishnan, 2013 or newer, Morgan Kaufmann, USA (Pdf or text)

Additional Books Suggested:

Star Schema: The Complete Reference by Christopher Adamson
The Data Warehouse Lifecycle Toolkit by Ralph Kimball
The Data Warehouse Toolkit: The Complete Guide to Dimensional Modeling by Ralph Kimball
Corporate Information Factory by W. H. Inmon

Course Description

Prerequisites: INFSYS 6845 or instructor’s permission.
The course will cover topics in data warehouse concepts, planning and requirements analysis, architecture and infrastructure, data design and preparation, and data warehouse design and implementation. The primary focus will on the development of suitable dimensional schemas for online analytical processing and navigation. Students will also learn to use a BI tool to set up attribute hierarchies for drill down and roll up, cross tabulation, visualization, and other analytical techniques.

Assessment/Grading

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Individual Presentation</td>
<td>10%</td>
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<tr>
<td>Group Presentation</td>
<td>20%</td>
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<tr>
<td>Tableau Assignments</td>
<td>20%</td>
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<tr>
<td>DW Design Assignment</td>
<td>20%</td>
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<tr>
<td>Test</td>
<td>30%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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Final letter grades will be assigned at the end of the semester based on the overall percentage and 90%, 80%, 70% marks as break points for A, B, C, and F grades.

Please see canvas.umsl.edu for the schedule.

Students will be assigned chapters for individual presentation in the class. In addition students need to work in groups for group presentations on one of the following topics, which should be explored in depth and presented to the class.

1. Hadoop architecture and associated tools
2. NoSQL Databases
3. MongoDB (it's a NoSQL database so more in depth coverage is needed)
4. Data Lake
5. In memory databases
6. DW/DB Appliances

**Attendance**

Students are expected to attend all classes. If you have to be absent due to illness or injury, please notify me as soon as possible. Points will be deducted from your attendance score for each unexcused absence. All students are expected to be punctual to class; being habitually late is inappropriate and unprofessional. If you have to leave a class early for legitimate reasons, please let me know in advance.

**Class participation**

It is essential that you come prepared to classes with the proper text and other necessary materials. You should be ready to take part in class discussions. In addition to class participation, you will spend time outside of class to complete your assignments and to build skills.

**Assignments:**

All assignments are mandatory. Assignments with more than one page must be either stapled, or paper clipped before submission. All assignments must be typed with double line spacing, with a clearly readable font size. Assignments that require submission via Canvas must be submitted by the stipulated date and time mentioned.

**Exams**

Any exam schedule conflicting with other exams should be reported to the instructor at least one week prior to the examination to qualify for an alternative test time/date.

**Policy Statements:**

University policy clearly defines the requirements for academic honesty and defines disciplinary actions to which a student may be subject to if these requirements are violated. University rules and regulations
must be followed at all times. Civility is a basic requirement. Cell phones, pagers, personal digital assistants and MP3 players should not be used during class time. This syllabus may be revised at the discretion of the instructor without prior notification or consent of the students.

Academic Integrity/Plagiarism

- You are responsible for being attentive to and observant of University policies about academic honesty as stated in the University’s Campus Policies and Code of Student Conduct found in the UMSL Bulletin.
- Academic dishonesty is a serious offense that may lead to probation, suspension, or dismissal from the University. One form of academic dishonesty is plagiarism – the use of an author's ideas, statements, or approaches without crediting the source. Academic dishonesty also includes such acts as cheating by using any unauthorized sources of information and providing or receiving unauthorized assistance on any form of academic work or engaging in any behavior specifically prohibited by the faculty member (e.g., copying someone else’s answers on tests and quizzes). Unauthorized possession or distribution of academic materials is another type of academic misconduct. It includes the unauthorized use, selling or purchasing of examinations or other academic work, using or stealing another student’s work, unauthorized entry or use of material in a computer file, and using information from or possessing exams that an instructor did not authorize for release to students. Falsification is any untruth, either verbal or written, in one’s academic work. Facilitation is knowingly assisting another to commit an act of academic misconduct. Plagiarism, cheating, and falsification are not acceptable.
- All instances of academic dishonesty will be reported to the Office of Academic Affairs who will determine whether you will appear before the Student Conduct Committee for possible administrative sanctions such as dismissal from the university. The instructor will make an academic judgment about the student’s grade on that work in this course.
- The campus process regarding academic dishonesty is described in the “Policies” section of the Academic Affairs website.

Follow the AMA style for your reports.
- Plagiarism is the use of another person’s words or ideas without crediting that person.
- Plagiarism and cheating will not be tolerated and may lead to failure on an assignment, in the class, and dismissal from the University, per the UMSL academic dishonesty policy.
- Students are responsible for being attentive to and observant of campus policies about academic honesty as stated in the University’s Student Conduct Code.
- To avoid accusations of academic dishonesty, please submit all written work to the Turnitin System before finalizing what you submit for evaluation. Check information about The Writing Center on UMSL’s website.
Title IX Policies

In adherence to the policies of Title IX and to promote a safe and secure educational environment, it is strongly recommended statements similar to those below be added to your course syllabus:

• **Mandatory Reporting:** Under Title IX, all UMSL faculty, staff, and administrators (with limited exception) are obligated to report any incidents of sexual harassment, sexual misconduct, sexual assault, or gender discrimination to the Student Affairs office and/or other University officials. This ensures that all parties are protected from further abuses and that victim(s) are supported by trained counselors and professionals. Note: There are several offices at UMSL (e.g., Counseling Services, Health Services, Community Psychological Service, Center for Trauma Recovery, and Student Social Services) whose staff are exempt from Title IX mandated reporting, when the information is learned in the course of a confidential communication.

• **Content Advisory:** The course requires good logical skills and knowledge of materials from the pre-requisite courses. Some of the concepts require abstract thinking and ability of apply college level algebra.

Student Resources

**Access, Disability and Communication**

Your academic success is important. If you have a documented disability that may have an impact upon your work in this class, please contact Disability Access Services (DAS) immediately. Students must provide documentation of their disability to the office of Disability Access Services in order to receive official University services and accommodations. The staff is available to answer questions regarding accommodations or assist you in your pursuit of accommodations. Information about your disability is confidential. Once DAS reviews your medical documentation, they will provide you with the information and steps to inform me about the accommodations to which you are entitled. Your accommodations will begin as soon as we discuss your approved accommodations.

- 144 Millennium Student Center (MSC)
- Phone: (314) 516-6554
- **Email:** Tara Cramer, cramert@umsl.edu
- **Website:** [http://www.umsl.edu/services/disability/](http://www.umsl.edu/services/disability/)

**Office of International Students and Scholar Services**

If you have difficulty communicating in English with the instructor of this course, contact ISS.

- 362 Social Sciences & Business Building (SSB)
- Phone: (314) 516-5229
- **Email:** iss@umsl.edu
- **Website:** [http://www.umsl.edu/~intelstu/contact.html](http://www.umsl.edu/~intelstu/contact.html)
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Student Enrichment and Achievement
SEA provides comprehensive support and intervention strategies that support your road to graduation!

- 107 Lucas Hall
- Phone: (314) 516-5300
- Email: umslsea@umsl.edu
- Website: https://www.umsl.edu/services/sea/

Office of Multicultural Student Services (MSS) and the University Tutoring Center (UTC)
MSS provides comprehensive student retention services to diverse student populations; through their tutoring center, the MSS offers comprehensive tutoring services free to students at UMSL.

- 225 Millennium Student Center (MSC)
- Phone: (314) 516-6807
- Email: multicultural@umsl.edu
- Website: https://www.umsl.edu/~mcraa/index.html

More Student Resources are on the Learning Resource Lab website.

Technical Support

Canvas
If you have problems logging into your online course, or an issue within the course site, please contact the Technology Support Center:

- Phone: (314) 516-6034
- Email: helpdesk@umsl.edu
- Website: http://www.umsl.edu/technology/tsc/

If you are having difficulty with a technology tool in Canvas, consider visiting the Canvas Student Guides, which has overviews of each tool and tutorials on how to use them.

If you continue to experience problems or just have questions, you can also contact the Learning Resource Lab:

- Phone: (314) 516-6704
- Email: lrl@umsl.edu
- Website: http://www.umsl.edu/technology/lrl/

VoiceThread

- Online Contact Form: https://voicethread.com/support/contact/
- Website: https://voicethread.com/howto/
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Academic Support

Math Academic Center (Math Lab)
The Math Academic Center offers free individual assistance on a walk-in basis to students needing help with any mathematics from basic math through calculus or any course involving mathematical skills.

- 222 Social Sciences and Business Building (SSB)
- Website: http://www.umsl.edu/mathcs/math-academic-center/