IS 6833 -- Winter/Spring, 2017
Decision Support Systems for Business Intelligence

Dr. Vicki L. Sauter  Telephone:  314-516-6281
Office:  226 ESH  FAX: 314-516-6827
Secretary: Mrs. Karen Walsh, 211 ESH  Secretary’s Telephone Number: 314-516-6267
Electronic Address: Vicki.Sauter@umsl.edu  Home Page: http://www.umsl.edu/~sauter/
Mailbox: 210 ESH  Facebook: Vicki TheGeek Sauter  LinkedIn: Vicki Sauter
Office Hours: MW 12:30 - 1:30 pm  W 5:00 - 5:30 pm or by scheduled appointment
Class Sessions: W 6:55 - 9:35 in 005 ESH

GENERAL INFORMATION
Computing Information: http://www.umsl.edu/technology/
Advanced MIS Lab Information: http://www.umsl.edu/business/mis/MISlab.html
Library Information: http://www.umsl.edu/services/library/library.html
Networking Opportunities http://www.umsl.edu/~sauterv/analysis/event_schedule.html
Student Technology Guide http://www.umsl.edu/technology/publications/stutechguide/
Student Conduct Code http://www.umsl.edu/~studentconduct
UMSL Home Page http://www.umsl.edu/
IS Home Page http://mis.umsl.edu/


ONLINE MATERIALS
Class Web Site http://www.umsl.edu/~sauter/DSS/start.html
DSS Current Page http://www.umsl.edu/~sauter/DSS/current.html
Readings http://www.umsl.edu/~sauter/DSS4BI/links.html
Student Information Form http://www.umsl.edu/~sauter/DSS/student_info.html
Group Evaluation Form http://www.umsl.edu/~sauter/DSS/group_eval.html

PREREQUISITES: LOM 5300: Statistical Analysis

SEMESTER GOALS: Decision Support Systems are tools decision makers use to gain a better understanding of their business. They are the "front-end" technology that is generally associated with a data warehouse, and which provides the modeling and analysis capabilities to help decision makers see avenues through which to gain competitive advantage. As the name suggests, a DSS focuses how models, data, and other analytical tools decision makers might use in the reasoned consideration of the options available to them. In the current environment in most businesses, DSS are being implemented as intranets and so require web-based technologies.

ASSIGNMENTS

INDIVIDUAL ASSIGNMENTS:

1. “NETWORKING” ACTIVITIES:
Learning to network, and learning to learn about new topics is an important part of any IS Professional's life. Therefore, you are going to practice that activity this semester by attending at least three external events. These might include the IS Mentoring Program, the IS Programming Club, the Executive Leadership Institute's events, Student Night Seminars sponsored by the Institute of Internal Auditors and the Information Systems Audit and Control Associations, the local Web Developers Chapter, Saint Louis Visual Basic Users Group, the XPSTL Group, the Wireless SIG or any other IS-related seminar by a campus based or local professional organization (if it is not in this list, be sure to get permission before you go). The base grade will be the percentage of the expected events (3) you attend. So, if you have attended one event, this grade is 33.3, two events, the grade is 66.7, etc. You may attend one additional event for extra credit. A list of campus events, including those that are eligible for networking credit, is available at http://www.umsl.edu/~sauterv/analysis/event_schedule.html. To get credit for attendance, you must complete the required form and have it signed by some official of the organization or the event.
2. **PAPERS**

Each student must complete a term paper on a topic of Business Intelligence. These papers must include content that goes beyond what is covered in the book, web references, lectures, etc. Each student will select a topic from a list compiled by the professor.

Each paper must include at least 20 independent references (not recounting the same book, article, etc. across multiple footnotes) such as journal articles, newspapers, short videos, or relevant websites. Be sure to check high-quality but non-refereed publications such as the *Harvard Business Review*, *Wall Street Journal*, *Economist*, etc for relevant articles. At least 10 of these references must be from *refereed journals*. Refereed journals assure some level of validation. The best source to find refereed journal articles is ABI-INFORM, available online to UMSL students. To find refereed articles, simply tick the box for "Scholarly journals, including peer-reviewed " while in ABI inform.

The papers should be no longer than 15 pages plus citations. The papers must be typed (or word-processed), double-spaced, numbered, with one-inch margins on all sides. All citations must be complete references to the material.

Final papers are due no later than **April 19**.

**GROUP ASSIGNMENTS** For the group assignments, students will work in groups of 3-5, which will be created randomly by the instructor. However, she will take into account students' preferences for group members. No later than **February 1** each individual must email the instructor with a list of names of individuals with whom he or she does want to work and a list of names of individuals with whom he or she would prefer not to work. Groups should be announced no later than **February 8**.

You have been given about two years' worth of data from an arts organization. The arts organization is skeptical about what they can learn from BI. The data and the field guide is available on MyGateway. You will use these data for both the visualization assignment and the analytics assignment.

3. **VISUALIZATION ASSIGNMENT:** One of the hardest things about analytics is helping the user to understand the data, and how the user’s organization is working. Part of the solution for that problem can be addressed with creative visualizations. For this assignment, you must use appropriate visualizations to help the Commissioner of the NYPD. As it does frequently, the “Stop, Question and Frisk” procedure. The Department has provided you data from 2003 to 2015, see data at [http://www.nyc.gov/html/nypd/html/analysis_and_planning/stop_question_and_frisk_report.shtml](http://www.nyc.gov/html/nypd/html/analysis_and_planning/stop_question_and_frisk_report.shtml) for analysis. Your task is to provide a creative visualization for the Commissioner to help explain what impact the program has had on the city. You should be ready to explain the contribution of every pixel in the display. We will be using Tableau for the visualization.

The presentations will all occur on **March 15**, and will be scheduled by lottery. Students must turn in their URL or ppt file to Professor Sauter by **March 14** so it can be linked on the current page. The should be informative and attractive.

4. **ANALYTICS ASSIGNMENT:** The goal of this assignment is to use statistical techniques to help the Commissioner know whether or not “Stop, Question and Frisk” procedure is decreasing the guns (or the type of weapon) during this period, whether crime in general has decreased, and whether there seems to be a bias on the part of the officers. Your main deliverable for this assignment is a presentation that describes how you approached the problem, what data you considered, and your predictions. This may require cleaning of the data and/or finding other data with which to merge to strengthen your conclusions. You may use PowerPoint (or equivalent), the web, or a combination for your presentation.

The presentations will all occur on **May 3**, and will be scheduled by lottery. Students must turn in their URL or ppt file to Professor Sauter by **May 2** so it can be linked on the current page. The presentation should be informative and attractive.

**EXAMS:** There will be a final exam.

Final exam: **Distributed on May 3; Due on May 10 at 5:30 pm**

Make-up exams will be provided only if Dr. Sauter has been notified prior to the exam and if you have an acceptable reason for missing the exam. Under all other circumstances, a grade of zero (0) will be assigned.

**DROP POLICY:** For the purposes of this policy, the "effective drop date" is the date which I am informed of the drop or the actual date of the drop, which ever is later. Students can and may inform me by leaving me a note in my mailbox,
leaving me a message (on voice mail or email) or by speaking to me in person or over the telephone.

A student may drop this class until March 3 with a passing grade. (Note the University policy states that you may drop until February 13 without receiving a grade; this policy is simply an extension of the University policy.) Between March 4 and April 17, a student will receive either a passing grade (excused) or a failing grade (F) depending upon his or her performance (current grade) in the course. A student may withdraw after April 17 only with and solely with the approval of the dean of his or her division. If you want to withdraw after this date, go directly to your dean; do not ask for my signature -- my signature is not needed and I will not provide it. Under no circumstance may a student drop this class after May 3, 2017.

**Grading Policy:** The following proportions will be used for grading.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Networking Activities</td>
<td>10%</td>
</tr>
<tr>
<td>Visualization Assignment</td>
<td>15%</td>
</tr>
<tr>
<td>Paper</td>
<td>30%</td>
</tr>
<tr>
<td>Analytics Assignment</td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
</tbody>
</table>

Approximate letter grades will be assigned when exams and projects are returned. Students should remember, however, that the term average is a weighted average of the numerical grades, not an average of the approximate letter grades.

**Academic Honesty:** According to the University Standard of Conduct, Section 6.0101,

> The Board of Curators recognizes that academic honesty is essential for the intellectual life of the University. Faculty members have a special obligation to expect high standards of academic honesty in all student work.

Students have a special obligation to adhere to such standards.

Furthermore, note that the University’s *Collected Rules* 200.010 B.1 REQUIRE faculty to notify Academic Affairs of suspected cases of dishonesty. It states, “In all cases of academic dishonesty, the instructor shall make an academic judgment about the student’s grade on that work and in that course. The instructor shall report the alleged academic dishonesty to the Primary Administrative Officer.”

For the purposes of this class, cheating will include: plagiarism (using the writings of another without proper citation), copying of another (either current or past student’s work), working with another on individually assigned work or exams, unauthorized marking on a graded paper or exam, or in any other way presenting as one’s own work that which is not entirely one’s own work. It is unacceptable to seek the help of another (whether in the class or not) for help on an exam; this is considered academic dishonesty.

Any student who is caught cheating on any assignment or exam will receive a grade of zero (0) for that assignment or exam. Further, a recommendation will be made to the appropriate university officials that additional disciplinary action be taken.

**My Expectations:**

- I assume you are here to learn about DSS in preparation for your ultimate career. To accomplish that:
  - You must come to class prepared; you must read and think about the material before you get here.
  - You must demonstrate critical thinking skills.
  - You must participate in class discussions and class activities.
  - You must participate fully in the class project. This means that you will think about your project, go to group meetings, participate in the data collection and analysis. Each person must accept the responsibility for the project.
  - It is your responsibility to ask questions in class or office hours when you are confused.
  - I expect you to be courteous and respectful to me and your classmates, and professional to class visitors and to your clients.
  - While I will not monitor your use of the computers during class, I expect you to be respectful in your use of the computer and I expect you to pay attention regardless of what you are doing with the computer.
Your success in this course is important to me. When I believe that the programs offered by Student Retention Services (SRS) will help you academically, I will send a referral via MyConnect, the campus Academic Alert System. The SRS offers assistance tailored to specific instructional needs. Learn about the MyConnect system in the online Student Planner, http://www.umsl.edu/~umslsrs/Academic%20Intervention%20Programs/alert.html

CLASSROOM COURTESY: I realize that I should not have to tell you these things, and I apologize to those of you for whom this is unnecessary, but in the past few years I have noticed a significant increase in bad classroom manners and inconsiderate behavior. So please adhere to the following rules. Repeated violations of these will be grounds for reducing your course grade, and you will be reported to the Office of Homeland Security as a threat to national learning.

• Turn off your phone's and pager's volume before entering class; do not talk on the phone in class.
• Come to class on time. In those cases where being late is unavoidable, please enter the classroom quietly and take a seat as close to the door as possible. If the class period is more than half done, don't bother to come to the class. Once in class, do not get up and leave unless it is truly an emergency.
• Open beverage cans and bottles and snack bags before class starts. If you eat during class, please do so quietly.
• Keep talking with your neighbor to a minimum. If you are confused about something in class, please ask me - that is my job and I'm happy to answer questions.
• When you use the computers, do so quietly. Recently the typing by students has gotten so loud that it is very distracting both to me and the members of the class.
• Bring a handkerchief or tissue to class to blow your nose in case you get the sniffles.

TITLE IX REQUIREMENTS: 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.

DISABILITIES: Please inform me of any physical disabilities that could affect your learning. I am happy to make reasonable accommodations to improve the learning environment, but I need to know about them in order to help. If, during the semester, you are experiencing a serious emotional trauma, please inform me of this before taking an exam; once an exam is taken the grade must be counted and no "retake" is possible.

RELIGIOUS OBSERVANCE: I am committed to creating an inclusive campus community that values and respects all its members, and achieves educational excellence through diversity and nondiscrimination. This includes supporting students regardless of their religious affiliation or non-affiliation. I will make a good faith effort to accommodate your religious practice or belief, unless such accommodation would create undue hardship. Accommodations for makeup assignments, presentations, homework, quizzes, or exams should be arranged with me early in the semester and well in advance of the anticipated class absence and requested accommodation. To request an accommodation for a religious observance, submit the form to me as the semester begins and no later than two weeks prior to the religious observance. Submit a separate form for each observance.

SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction and Definitions</td>
<td>1</td>
</tr>
<tr>
<td>2-3</td>
<td>Decision Making</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Business Intelligence</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Descriptive Analytics and Dashboards</td>
<td>5, 10</td>
</tr>
<tr>
<td>6-8</td>
<td>Predictive Analytics and Model Management</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Prescriptive Analytics</td>
<td></td>
</tr>
<tr>
<td>9-10</td>
<td>User Interface Design</td>
<td>5</td>
</tr>
<tr>
<td>11-12</td>
<td>The Data Component</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Data Warehousing</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Intelligence and Data Mining</td>
<td>4S</td>
</tr>
<tr>
<td>14</td>
<td>International Issues in Decision Making</td>
<td>6</td>
</tr>
<tr>
<td>15</td>
<td>Design and Implementation</td>
<td>9</td>
</tr>
</tbody>
</table>

* Approximate allocation of time to topics. See web page for more specific information.