

# Decision Support Systems for Business Intelligence

INFSYS 6833-001 and INFSYS 3843-001 Fall 2019

<b>Instructor:</b>	Vivek K. Singh	<b>Email:</b>	vsingh@umsl.edu
<b>Office hrs.:</b>	Thursday (5:00 pm -6:00pm)	<b>Lecture hours and</b>	6:00 pm – 8.30 pm (Thursday)
<b>Office:</b>	ESH 228	<b>Room:</b>	ESH 00104

**Phone:** 314 516 6288 (Office)

**Required Texts:** [Decision Support Systems for Business Intelligence, 2<sup>nd</sup> Edition](#)  
By: Vicki L. Sauter, Wiley Publications  
Digital copy available in UMSL library: <https://ebookcentral.proquest.com/lib/umsl-ebooks/detail.action?docID=706599>

**Software:** Tableau, Python Anaconda

**Description:** This is a basic course in Decision Support Systems for Business Intelligence.

**Prerequisite** (SCMA 5300, or permission of instructor)

**Description:** This class examines the applications of data and analytics (models) to support the needs of decision makers. Descriptive, predictive and prescriptive analytics tools are coupled with Big Data and well-designed user interfaces to provide the necessary tools. Topics such as how to construct the data warehouse, how to clean and store data in the appropriate form, how to construct and implement a useful visualization of data, and how to construct and support decision makers are included. DSS component design in response to decision making and business intelligence needs are discussed.

**Objective** The objective of this course is to introduce decision support systems for business intelligence. The decision support systems include data handling, modeling (predictive), visualization, and infrastructure for running DSS systems – Cloud computing. The students taking this course will understand design, development, and deployment of DSS systems in Big-Data world.

**Learning Outcomes**

- Understand Data Programming and Visualization.
- Supervised and Unsupervised Machine Learning
- Social Media Analytics.
- Running DSS applications in Cloud computing applications.

**Procedures:** Students should read the slide and book chapter for recommended reading prior to lecture. The assignments' due dates are provided in the syllabus. The late assignments will be evaluated with a penalty of 5% of the assignment points.

**Attendance:** There is attendance/participation point for each lecture.

**Evaluation:** Attendance: 10%

Mid-term exam: 20% (Closed book) – Multiple choice questions in lecture room.

Assignments: 60 % (Open book) – Online through Canvas [4 Assignments of 15% each]

Project presentation (10%): Present best assignment.

**Grading:** (as per University guidelines)

**Grading Scale:** The UMSL Grading System is based on a four-point scale. The grade value for each letter grade is as follows:

A = 4.0	B- = 2.7	D+ = 1.3	EX = Excused
A- = 3.7	C+ = 2.3	D = 1.0	DL = Delayed
B+ = 3.3	C = 2.0	D- = 0.7	FN = Failure/Non-
B = 3.0	C- = 1.7	F = 0	Participation

Name:	Range:	
A	100 %	to 94.0%
A-	< 94.0 %	to 90.0%
B+	< 90.0 %	to 87.0%
B	< 87.0 %	to 84.0%
B-	< 84.0 %	to 80.0%
C+	< 80.0 %	to 77.0%
C	< 77.0 %	to 74.0%
C-	< 74.0 %	to 70.0%
D+	< 70.0 %	to 67.0%
D	< 67.0 %	to 64.0%
D-	< 64.0 %	to 61.0%
F	< 61.0 %	to 0.0%

Day/Week	TOPIC
August 22, 2019 (Thursday)	CRISP-DM
August 29, 2019 (Thursday)	Visualization - Tableau
September 5, 2019 (Thursday)	Python Programming <b>Assignment 1 published.</b>
	<b>Assignment 1: Due on September 11, 2019 (Wednesday)</b>
September 12, 2019 (Thursday)	Machine Learning
September 19, 2019 (Thursday)	Supervised Learning
September 26, 2019 (Thursday)	Unsupervised Learning <b>Assignment 2 published.</b>
	<b>Assignment 2: Due on October 2, 2019 (Thursday)</b>
<b>October 3, 2019 (Thursday)</b>	<b>Mid-term exam</b>
October 12, 2019 (Thursday)	Social Media Analytics 1
October 19, 2019 (Thursday)	Social Media Analytics 2
October 24, 2019 (Thursday)	Social Media Analytics 3 <b>Assignment 3 published.</b>
	<b>Assignment 3: Due on October 30, 2019 (Wednesday) at 11:59 PM</b>
October 31, 2019 (Thursday)	Cloud computing 1
November 7, 2019 (Thursday)	Cloud computing 2
November 14, 2019 (Thursday)	Cloud computing 3
November 21, 2019 (Thursday)	Cloud computing 4 Assignment 4 published
November 28, 2019 (Thursday)	Fall Break <b>Quiz 4 published and due on December 2, 2019 (Monday)</b>
December 5, 2019 (Thursday)	<b>Project Presentation</b>

**Instructional Strategies:** The course involves on campus lecture twice a week. Each lecture consists of discussions of material, programming demonstrations, and in-class programming activities. The assignments are individual. The Canvas will be used to post assignments and submissions. The students are expected to check emails for course updates and grades. Students are encouraged to meet and discuss during office hours if they face any queries related to course content, assignment, and final exam.

**Communication Strategies:** Important information is available to you through MyConnect. Throughout the term, you may receive emails regarding your course grades or academic performance. Please pay attention to these emails and consider taking the recommended actions. They are sent to help you be successful!

## Course Policies

### 1. Participation (expectations)

- It is vitally important that our classroom environment promote the respectful exchange of ideas. This entails being sensitive to the views and beliefs expressed during discussions whether in class or online. Please speak with me before recording any class activity. It is a violation of University of Missouri policy to distribute such recordings without my authorization and the permission of others who are recorded.
- Your success in this course will heavily depend on your ability to communicate, engage and participate in all course activities. Successful completion of this course requires that a student keep up with all assignments, coursework and discussions. Active participation in discussions is a very important part of this course and participation in these discussions, and other activities as assigned, is not optional. You are expected to prepare for each class period. Daily preparation is essential to steady and sustained learning in this course. Lack of preparation for class negatively affects your learning.
- If you are unable to participate in the scheduled class activities or discussions, you must notify the instructor within the week of that class period. The instructor reserves the right to make judgment to accept and/or make-up assignments missed because of failed participation in the course activities.
- **E-mail etiquette:** E-mails to faculty are a type of professional communication. They should include an appropriate salutation and your name at the bottom of the message. If the answer to your question can be found in your notes, text, or assignment, then first consult the appropriate resources such as this syllabus. This is an important skill to acquire, practice, and demonstrate while in college. Please think about what you are asking and saying before hitting “send.” I’ll respond to e-mail messages Within 24 hours.

### 2. Attendance Policies

- *Attendance* in class will be measured using daily in-class attendance.
- Make-up tests must be taken within a week. Arrangements will be made with the Campus Testing Center to administer this test. *A make-up test may be offered only if the absence is documented (doctor’s note, evidence of emergency) and only if you contact your instructor prior to the test.* Please arrange to take the test as soon as you return to campus.
- Assignments are due as per the schedule. Points will be deducted for each day that the report is overdue.
- Create a plan to ensure assignments will be submitted on time as I do not accept late work.
- UMSL does not have a grade of Incomplete or I. Please speak with me early to resolve problems you encounter.
- Class attendance and participation is essential for success. When you are absent, it is your responsibility to clarify missed assignments with classmates or with me prior to the next class.
- If you expect to miss class to participate in a university-sanctioned activity, be sure to submit a [Student Absence Form](#) early in the semester so that we can discuss your responsibilities and make plans to fulfill the requirements of the classes you will miss.
- If you expect to miss class due to a religious observance, early in the semester submit a Request for [Student Absence for Religious Observance](#) so that we can discuss your responsibilities and plan so that you meet course obligations and requirements.
- Please make an appointment to discuss with me any requests for exceptions to these policies.

### 3. 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](#)
- Citations should be included in APA format.
  - A. 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](#).
  - B. Students are responsible for being attentive to and observant of campus policies about academic honesty as stated in the [Code of Student Conduct](#)
  - C. 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 @UMSL](#).

### 4. Class Behavior

- Classroom discussion should be civilized and respectful to everyone and relevant to the topic we are discussing. Everyone is entitled to their opinion. Classroom discussion is meant to allow us to hear a variety of viewpoints. This can only happen if we respect each other and our differences.
- Meaningful and constructive dialogue is encouraged in this class and requires a degree of mutual respect, willingness to listen, and tolerance of opposing points of view. Respect for individual differences and alternative viewpoints will be maintained at all times in this class. One's words and use of language should be tempered and within acceptable bounds of civility and decency.
- Since every student is entitled to full participation in class without interruption, all students are expected to come to class prepared and on time, and remain for the full class period.
- Disruptive behaviors, including excessive talking, arriving late to class, sleeping, reading newspapers, using unauthorized electronic devices during class is not permitted.
- Please remember:
  - Without giving up your own convictions, accept that disagreement will exist.
  - Be a respectful listener.
  - Comments are made on issues, not on individuals.
  - Comments are supported by reasons and logic.
  - Speakers take turns; don't interrupt.
  - Respectful words and strategies should be used.
  - If you don't agree with a classmate, seek to understand your peer first. Begin with "Help me understand..."

- Non-verbal expressions and body language should reinforce a positive learning environment. Avoid rolling your eyes, crossing your arms in anger, or gasping out loud.
- Understand your triggers or “hot buttons.” Knowing what makes you angry and frustrated enables you to manage your reactions and respond in a more appropriate manner.
- Consider how your use of technology helps or hinders a respectful learning environment.

## 5. Title IX Policies

### **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 whose staff are exempt from Title IX mandated reporting, when the information is learned in the course of a confidential communication (e.g., Counseling Services, Health Services, Community Psychological Service, Center for Trauma Recovery, and Student Social Services).

## 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
- Phone: (314) 516-6554
- Email: [cramert@umsl.edu](mailto:cramert@umsl.edu)
- Web: <http://www.umsl.edu/services/disability>

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

### **Office of International Students and Scholar Services:**

- Phone: (314) 516-5229
- Email: [iss@umsl.edu](mailto:iss@umsl.edu)
- Web: <http://www.umsl.edu/~intelstu/contact.html>

### **Technical Support**

UMSL provides students with a variety of technology supports on campus. The information listed below connects you with the most commonly sought supports.

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

- Phone: (314) 516-6034
- Email: [helpdesk@umsl.edu](mailto:helpdesk@umsl.edu)
- Web: <http://www.umsl.edu/technology/tsc/>

If you are having difficulty with a technology tool in Canvas (Voicethread, Kaltura, etc.) explore these websites with more information about each toolset:

- Learning Resource Center: <http://www.umsl.edu/technology/lrl/>
- Center for Teaching and Learning:  
<http://www.umsl.edu/services/ctl/techguides/studenttechguide.html>
- VoiceThread Support: [pro-support@voicethread.com](mailto:pro-support@voicethread.com) or  
<https://voicethread.com/support/howto/Basics/>
- Google Apps for UMSL: <http://www.umsl.edu/technology/google-apps/>

## Academic Support

**The Writing Center** provides free face-to-face as well as online writing consultations. For face-to-face consultations, please make an appointment online at [www.umsl.mywconline.com](http://www.umsl.mywconline.com) or visit 222 SSB. At their Canvas site, students can send their papers to our tutors, who will read them and send them back with suggestions. Students can also access Turnitin, which identifies quoted material in their essays.

- Visit the [online Writing Lab page](#) to submit drafts online.
- We try to respond within 48 hours, but it may take longer, so allow ample time.

## Tutoring Services

- Academic Support Centers across campus:  
<http://www.umsl.edu/services/sea/Student%20Success%20Network/academicsupport.html>
- **NetTutor:** Online tutoring tool in many subjects is now available through NetTutor. Students can get real-time, personal tutoring via video conference. In your courses on Canvas, click on Tools and select NetTutor® to log in.

**MyConnect:** Provides you with a central location to connect to the support services on campus. MyConnect makes it easy to schedule a meeting with your instructor, advisors or counselors. It can help you manage the steps you need to take to stay on track and meet your educational goals. Log in to your UMSL MyConnect Home page by going to Current Students from the UMSL website. Then, access MyConnect through the [MyGateway Student Portal](#).

**Student Enrichment and Achievement** offers assistance tailored to specific student needs.

- 107 Lucas Hall
- Phone: (314) 516-5300
- Email: [umslsea@umsl.edu](mailto:umslsea@umsl.edu)
- Web: <http://www.umsl.edu/services/sea>

## Campus Safety

- All members of the UMSL community are encouraged to register their home, cell, and office phone numbers to receive notification of any pending danger on campus. Find instructions here: <http://safety.umsl.edu/police/notification/index.html>
- In the event of an emergency on campus, call Campus Police at 314.516.5155. A call to 911 on a cell phone only, will go to the St. Louis County Police. The St. Louis County Police will notify UMSL Police, but this may cause a delay in response. Campus Police know the best way to escort emergency vehicles to locations on campus.
- If you do not feel comfortable walking to a parking lot, MetroLink stop, or anywhere else on campus, contact the Campus Police for an escort: 314.516.5155.
- The University of Missouri – St. Louis is committed to creating and maintaining a safe environment for all members of the campus community (faculty, staff, students and visitors). Please familiarize yourself with campus emergency procedures by reviewing the UMSL Police Department web pages at: <http://safety.umsl.edu/police/emergency/index.html>. These pages highlight possible safety concerns and alert you to procedures to follow should there be an emergency on campus. The site also includes a link to the campus plan for disaster preparedness. It is important to review this information and be prepared to take action in the event of an emergency. If a person's safety is ever at risk, **call the Campus Police at 314-516-5155 immediately.**

The Center for Teaching and Learning's website includes sample statements of civility, academic honesty, and disability access. These are available for faculty to adapt at:

<http://www.umsl.edu/services/ctl/faculty/resourcesforteaching/index.html>

Some departments expect all syllabi to include standard statements of these policies in each course syllabus. Be certain to check whether this is the case in your program.