COURSE SYLLABUS

DAB 440
Analytics and Decision Making
Fall 2019

1. COURSE INFORMATION

1.1. *Instructor Information*

Instructor:	Eduardo Rodriguez
Office:	CPS 416
Physical Office Hours:	Mo and We 11:00 -12:00 and 1:00 to 1:30 PM and by appointment
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1.2. *Course Information*

Course Description:	This course is about the decision-making process. This means in the course we consider decisions as the outcome of a set of organized steps that look for information/knowledge to guide the selection of possible solutions to organizational problems. The decision-making process is part of the core of organizations administration and the individual levels. This is the most difficult endeavor of any member of organizations.
	There are methodologies to help in the best selection of alternatives, problem-solving, and identifying the orientation for strategy design and implementation. The decision-making process includes aspects that are technical, human, operational, and in general, it is a mix of intuition and reason, a search of deterministic and stochastic solutions, and an ongoing search of reduction of uncertainty. It is the exploration of options according to value scales, creation of sustainable advantages, and feasibility of implementing the selections. Organizations are more intelligent when they learn how to adapt themselves better to the changes that are affecting the organization. The Analytics approach helps to connect reason and intuition for supporting the organizations to adapt them to new business conditions. The modeling process in analytics, for example, can help to discover aspects to consider in the decision-making process that sometimes are hidden, that require to use data to create knowledge to drive decisions. The issues of not having knowledge and to drive into an uncertainty world are very common and related to any kind of decisions.
	In this course we will examine the methods-frameworks that can support the decision-making process, identifying factors affecting the process and connecting the results with the need of actions.
	The main point in the course is the orientation of the decision-making process to add value to the organization. Value that can be defined in monetary terms or in creation of benefits to different stakeholders. The concept of value creation as the driver of decision making has the assumption of ongoing improvement, innovation development, proactivity actions, etc. All these aspects are components of the heart of the analytics process.

Credits:	3
Prerequisites:	BUS 350, BUS 360

1.3. *Textbook & Course Materials*

Required Text:	• Saxena R and Srinivasan A, 2013, Business Analytics: A practitioner's guide, Springer, New York • Instructor's material: review the master course table for the course readings • Complementary book: Grunig R and Kuhn R, 2013, Successful Decision-Making: A Systematic Approach to Complex Problems, Third Edition, Springer, New York

1.4. *Master Course Table*

Week	Session	Topic	Material	Activity	Main Competencies to develop								
					Data literacy	Data Preparation	Data analysis	Data Communication	Data Governance	Influence	Team Participation	Curiosity	Problem Solving
Sept 03	1	Business Analytics Context	Saxena 1 - Buchanan L. and O'Connell A. - A brief history of decision making - HBR - January 2006	Conceptualization - Explaining Case for the term and cases as exercises - First example of decision making								x	x
	2	Analytics and Decisions	Saxena 2	Conceptualization - First Case - No grades at the university	x	x	x			x		x	x
Sept 9	1	Decision Needs	Saxena 3	Conceptualization								x	x
	2	Decision Needs	Saxena 3	Practice cases - Cost of using a car	x	x	x			x		x	x
Sept 16	1	Decision Modeling	Saxena 4	Conceptualization								x	x
	2	Decision Modeling	Saxena 4	Practice cases - Designing a product	x	x	x			x		x	x
Sept 23	1	Decision Making	Saxena 5	Conceptualization								x	x
	2	Decision Making	Saxena 5	Practice cases - Producing/Using Enviromental Friendly Products	x	x	x					x	x
Sept 30	1	Decision Execution	Saxena 6	Conceptualization								x	x
	2	Decision Execution	Saxena 6	Practice cases - Selecting People, products, promotion, investments	x	x	x			x		x	x
Oct 7	1	Decision Tools Qualitative	Inst. Material	Conceptualization								x	x
	2	Decision and Intuition	Inst.Material - DiFilippo D and Blasé P. Gut and gigabytes - The Economist Intelligence Unit	Class review of the reading									
Oct 14	1	Review - Theory	Inst. Material	Evaluation									
	2	Review - Project Advance	Inst. Material	Evaluation									
Oct 21	1	Decision Trees - Decision Analysis	Inst. Material	Conceptualization	x	x	x					x	x
	2	Decision Trees - Decision Analysis	Inst. Material-Hammond J, Keeney R and Raiffa H, The hidden traps in Decision Making, HBR September-October 1998	Class review of reading - Pharmaceutical product development	x	x	x			x		x	x
Oct 28	1	Decisions and Mathematical Programming	Inst. Material	Conceptualization	x	x	x					x	x
	2	Decisions and Mathematical Programming	Inst. Material	Practice cases - Deciding a portfolio								x	x
Nov 4	1	Data Mining and Decisions	Inst. Material	Conceptualization	x	x	x					x	x
	2	Data Mining and Decisions	Inst. Material - Bazerman M and Chugh D. Decisions without Blinders , HBR Jaunuary 2016	Class review of the reading - Variables that affect decisions								x	x
Nov 11	1	Decisions - Multicriteria - Goals	Inst. Material	Conceptualization	x	x	x					x	x
	2	Decisions - Multicriteria - Goals	Inst. Material	Practice cases - Short cases	x	x	x	x	x	x	x	x	x
Nov 18	1	Decision - Montecarlo Simulation-Proforma Financials	Inst. Material	Conceptualization	x	x	x					x	x
	2	Decision - Montecarlo Simulation-Proforma Financials	Inst. Material	Practice cases - Budgeting analysis	x	x	x	x		x		x	x
Nov 25	1	Decisions and Corporate Performance Evaluation	Inst. Material	Conceptualization	x	x	x					x	x
	2	Decision Management Systems	Inst. Material - Big data,Analytics and Decision Making - European Commision	Conceptualization and class review of the reading	x	x	x					x	x
Dec 2	1	Cases Presentation	Saxena Chapter 12 - Product Lifecycle- Channel effectiveness - Next Likely purchase - Resource Management	Presentation	x	x	x	x	x	x	x	x	x
	2	Cases Presentation	Saxena Chapter 12 - Product Lifecycle- Channel effectiveness - Next Likely purchase - Resource Management	Presentation	x	x	x	x	x	x	x	x	x
Dec 9	1	Project Presentation		Presentation	x	x	x	x	x	x	x	x	x
	2	Project Presentation		Presentation	x	x	x	x	x	x	x	x	x
Dec 16				Submission final project report - Exam Period									

1.5. *Course Technology*

Course Website:	The course is On Canvas
Other Websites:	
Course Delivery:	Face to face

UWSP Technology Support:	The Office of Information Technology (IT) provides a Service Desk to assist students with connecting to the Campus Network, virus and spyware removal, file recovery, equipment loan, and computer repair. You can contact the Service Desk via email at techhelp@uwsp.edu or at (715) 346-4357 (HELP) or visit: https://www.uwsp.edu/infotech/Pages/ServiceDesk/default.aspx

2. LEARNING OUTCOMES

2.1. *Course Goals*

This course has been designed to develop competencies for the decision-making and problem-solving processes in organizations. The course looks for a balance between qualitative and quantitative approaches for supporting decision-making and mainly to use as a guideline the identification of decision-makers and their roles, controllable variables, un-controllable variables, constraints, possible results, and steps to follow.
Students will gain capabilities to deal not only with deterministic tools, qualitative and quantitative, but also with tools to reduce uncertainty, and to manage ambiguity.

2.2. *Course Learning Objectives*

Knowledge Related
- Recognize possible courses of action
- Select the appropriate options according to the available knowledge
- Reproduce the steps of problem-solving process in different settings

Comprehension Related
- Explain the decision making-process, results of choices and their reasons
- Summarize the main analytics aspects considered in the decision-making process
- Interpret the results and steps performed

Application Related
- Construct conceptual and quantitative models to support the decision-making process
- Perform the search of best alternatives to proceed with strategy under real conditions
- Employ the knowledge from different courses to create the support means for decisions

Analysis Related
Differentiate the approaches for tackling problems
- Quantify the payoffs and value generated under different decisions
- Measure the effects of possible choices and decisions

Communication Related
• Report the direction to follow for the organization
• Transfer knowledge among participants of the course
Evaluation Related
• Compare results and alternatives under several variables
• Assess the quality of the decision models and process
• Measure the impact of the decisions made

2.3. *Methodology*

This course has as methodology aspects the following:

• Frame the discussion as a strategy design and implementation situation
• Embed the analytics thinking concepts into the decision process of strategic/tactic choices
• Create social interaction-sharing knowledge among participants of the course
• Generate questions and inductive and deductive solutions based on data available
• Promote the creativity and non-boundaries for the analysis: technical and qualitative
• Evaluate tool alternatives for the analysis of the decisional situation
• Create mechanisms to identify takeaways and possible use in different situations
• Expose students to several qualitative and quantitative methods of decision-making

2.4. *Academic Unit*

SBE Mission:	The UWSP School of Business and Economics educates and inspires students and prepares graduates for success in positions of leadership and responsibility. We serve the students, businesses, economy, and people of the greater central Wisconsin region. Our students achieve an understanding of regional opportunities that exist within the global economy. Evidence of our graduates' level of preparation will be found in their ability to:
	• Analyze and solve business and economics problems
	• Understand the opportunities and consequences associated with globalization
	• Appreciate the importance of behaving professionally and ethically
	• Communicate effectively

3. COURSE POLICIES

3.1. *Attendance*

You will be responsible for anything that goes on in class.

3.2. *Late Work*

Late work may not be accepted. If accepted, late work will lose 25% per calendar day

3.3. *Etiquette/Netiquette*

POSITIVE LEARNING ENVIRONMENT. It is my goal to provide a safe and nurturing learning environment for all students. Therefore, breaches of classroom courtesy are defined as any behaviors that are disruptive to the learning environment. The following examples provide a foundational description of classroom courtesy:

• Displaying respect for others is required at all times. It is not required that you share the perspectives of your classmates, but rather that you do not discredit their right to have their own opinion. Expressing alternate viewpoints is important, but this should be done in a collegial manner.

• Side discussions, listening to head phones, sleeping in class, and abusive language is considered disruptive behavior.

• No shouting, no profane language, no verbal or physical threats, no intimidation of any kind.

• Not arriving to class under the influence of any alcohol or drugs

4. GRADING

4.1. *Grading Scheme*
Grading will start with a traditional 90, 80, 70 scale. Grades may be curved from there at the discretion of the professor. If curved, they generally place roughly the top 25% of the students with a A or A- and roughly 75% of students with a A, A-, B+, B or B-. I will use whichever system gives students the higher grade.

5. COURSEWORK

5.1. *Exams*

Two reviews:
First review 20%
Second review 20%

5.2. *Short presentations and participation*

Short presentations of related to cases and readings plus class participation 20%

5.1 *Assignments*

Final project report 25%
Final presentation 15%

5.2. *Project Evaluation*
See the section on Canvas

5.3. *Presentation Evaluation*
Se the sections on Canvas

6. SCHEDULE

6.1. *Dates and Deadlines*

The instructor will provide a tentative course schedule in a supplementary file. All provided course schedules are organized by week number in accordance with the official UWSP Academic calendar. A direct link to the UWSP Academic calendar can be found here: https://www.uwsp.edu/acadaff/Pages/AcademicCalendar.aspx

7. OTHER ADMINISTRATIVE DETAILS

7.1. *ADA / Equal Access for Students with Disabilities*

The American Disabilities Act (ADA) is a federal law requiring educational institutions to provide reasonable accommodations for students with disabilities. For more information about UWSP's policies, see: https://www.uwsp.edu/datc/Pages/uw-legal-policy-info.aspx

UW-Stevens Point will modify academic program requirements as necessary to ensure that they do not discriminate against qualified applicants or students with disabilities. The modifications should not affect the substance of educational programs or compromise academic standards; nor should they intrude upon academic freedom. Examinations or other procedures used for evaluating students' academic achievements may be adapted. The results of such evaluation must demonstrate the student's achievement in the academic activity, rather than describe his/her disability.

If modifications are required due to a disability, please inform the instructor and contact the Disability and Assistive Technology Center to complete an Accommodations Request form. The Disability and Assistive Technology Center is located on the 6th Floor of Albertson Hall. For more information, call 715-346-3365 or visit: https://www.uwsp.edu/datc/Pages/default.aspx

7.2. *Inclusivity/Nondiscrimination Statement*

It is the responsibility of the instructor to present materials and activities that are respectful of diversity, such that students from all diverse backgrounds and perspectives be well-served by this course. No person shall be discriminated against because of race, ethnicity, color, age, religion, creed, gender, gender identity, sexuality, disability, nationality, culture, genetic information, socioeconomic status, marital status, veteran's status, or political belief or affiliation and equal opportunity and access to facilities shall be available to all. To address concerns regarding any of these issues please call 715-346-2606 or visit: http://www.uwsp.edu/hr/Pages/Affirmative%20Action/About-EAA.aspx

7.3. *Religious Beliefs Accommodation*

It is UW System policy (UWS 22) to reasonably accommodate your sincerely held religious beliefs with respect to all examinations and other academic requirements. A direct link to this policy can be found here: https://docs.legis.wisconsin.gov/code/admin_code/uws/22

7.4. *Help Resources*

The Tutoring and Learning Center helps with Study Skills, Writing, Technology, Math, & Science. The Tutoring and Learning Center is located at 018 Albertson Hall. For more information, call 715-346-3568 or visit: https://www.uwsp.edu/tlc/Pages/default.aspx

If you need healthcare, UWSP Student Health Service provides student-centered healthcare that empowers and promotes wellness for all UWSP students. Student Health Service is located on the 1st floor of Delzell Hall. For more information, call 715-346-4646 or visit: http://www.uwsp.edu/stuhealth/Pages/default.aspx

The UWSP Counseling Center is staffed with licensed mental health professionals dedicated to assisting students as they navigate difficult circumstances or resolve personal concerns. Therapy and consultation services are free of charge for registered students. The UWSP Counseling Center is located on the 3rd Floor of Delzell Hall. For more information, call 715-346-3553 or visit: http://www.uwsp.edu/counseling/Pages/default.aspx

In addition to the support services provided by Student Health Service and the UWSP Counseling, there are also professional support services available to students through the Dean of Students. The Office of the Dean of Students supports the campus community by reaching out and providing resources in areas where a student may be struggling or experiencing barriers to their success. Faculty and staff are asked to be proactive, supportive, and involved in facilitating the success of our students through early detection, reporting, and intervention. As such, an instructor may contact the Office of the Dean of Students if he or she senses that a student is in need of additional support beyond what the instructor is able to provide. For more additional information, please go to http://www.uwsp.edu/dos/Pages/default.aspx

UWSP students may also share a concern directly if they or another member of our campus community needs support, is distressed, or exhibits concerning behavior that is interfering with the academic or personal success and/or the safety of others. Please report any concerns of this nature at https://www.uwsp.edu/dos/Pages/Anonymous-Report.aspx

7.5. *Emergency Response Guide*

In the event of an emergency, follow UWSP's emergency response procedures. For details on all emergency response procedures, please go to http://www.uwsp.edu/rmgt/Pages/em/procedures

7.6. *UWSP Community Bill of Rights and Responsibilities*

UWSP values a safe, honest, respectful, and inviting learning environment. In order to ensure that each student has the opportunity to succeed, a set of expectations has been developed for all students, staff, and faculty. This set of expectations is known as the Rights and Responsibilities document, and it is intended to help establish a positive living and learning environment at UWSP. For more information, go to: https://catalog.uwsp.edu/content.php?catoid=10&navoid=422#section-1-communal-bill-of-rights-and-responsibilities

7.7. *University Attendance Policy*

In addition to the course attendance policies determined by the instructor (noted above if applicable), the university provide standard guidelines by which students are to abide. All exceptions to the course attendance policy or the university guidelines should be documented in writing. A link to the university's attendance guidelines can be found at: https://www.uwsp.edu/regrec/Pages/Attendance-Policy.aspx

7.8. *University Drop Policy*

You are expected to complete the courses for which you register. If you decide you do not want to take a course, you must follow the procedures established by the university to officially drop the course. If you never attend or stop attending a course and fail to officially drop, you will receive an F in the course at end of the semester. A link to the university's drop policy can be found at: https://catalog.uwsp.edu/content.php?catoid=11&navoid=431&hl=add%2Fdrop&returnto=search#Drop/Add/Withdrawal_Procedures

7.9. *Academic Honesty*

UW System policy (UWS 14) states that students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Students suspected of academic misconduct will be asked to meet with the instructor to discuss the concerns. If academic misconduct is evident, procedures for determining disciplinary sanctions will be followed as outlined in UWS 14. A direct link to this policy can be found here: https://docs.legis.wisconsin.gov/code/admin_code/uws/14

7.10. *Grade Reviews/Appeals*

A formal grade appeal, also known as a Grade Review, can be requested in instances when the student feels that he or she was not provided a syllabus with a grading scale in a timely manner (i.e., the end of the second week of classes) and/or the instructor did not stick with the grading scale published in the syllabus. Questions of whether or not the instructor appropriately graded one or more of the course assignments, quizzes, exams, etc. are not matters to be decided by a formal grade appeal, but rather should be taken up with the instructor directly. Information on grade reviews can be found in the University Handbook, Chapter 7, Section 5. A link to the university's policies on non-academic misconduct can be found at https://www.uwsp.edu/acadaff/Pages/gradeReview.aspx

7.11. *Non-Academic Misconduct*

Information on non-academic misconduct can be found in Chapters 17 and 18 of the Student Rights and Responsibilities Document. A link to the university's policies on non-academic misconduct can be found at https://www.uwsp.edu/dos/Pages/stu-conduct.aspx.

7.12. *Confidentiality*

Learning requires risk-taking and sharing ideas. Please keep your classmates' ideas and experiences confidential outside the classroom unless permission has been granted to share them.

It is important for students to understand that faculty are required to report any incidents of maltreatment, discrimination, self-harm, or sexual violence they become aware of, even if those

incidents occurred in the past, off campus, or are disclosed as part of a class assignment. This does not mean an investigation will occur if the student does not want that, but it does allow the university to provide resources to help the student continue to be successful.

7.13. *Sample Coursework Permission*

The instructor may wish to use a sample of your work or some of the feedback you provide on the course in future teaching or research activities. Examples: showing students an example of a well-done assignment; analyzing student responses on a particular question; discussing teaching techniques at a conference. If your coursework or feedback is used, your identity will be concealed. If you prefer not to have your work included in any future projects, please send the instructor an e-mail indicating that you are opting out of this course feature. Otherwise, your participation in the class will be taken as consent to have portions of your coursework or feedback used for teaching or research purposes.

7.14. *Revision Clause*

This syllabus, the provided schedule, and all aforementioned coursework, are subject to change. It is the student's responsibility to check the course website for corrections or updates to the syllabus. Any changes will be clearly noted in a course announcement or through email.