# Syllabus for QUMT 2398: Decision Analytics

**Instructor:** Jun Sun  
**Email:** jun.sun@utrgv.edu  
**Term:** Spring 2017  
**Phone:** 665-3353 (Dept.) or 665-2850 (office)  
**Meeting times and location:** TR 3:05 pm - 4:20 pm @ EACSB 2.102  
**Office:** MAGC 3.280  
**Office Hours:** TR 1:30 pm – 2:30 pm  
All other times by appointments only

**Credit Hours:** 3  
**Prerequisite:** MATH 1340 or equivalent

**Textbook and/or Resource Material**  

**Understanding this course:**  
In this course, students develop quantitative literacy by applying appropriate quantitative tools to analyses for decision-making in a variety of contexts. Students use mathematical and statistical techniques that are essential for all learning, both during and after the university experience. This course provides students with intellectual and practical proficiency in solving problems in a logical manner by examining the patterns and relationships of data available, then developing and carrying out the mathematical and logical algorithms required to arrive at optimal solutions. Students will complete hands-on activities and exercises in class, homework assignments, case analyses and discussions, and team projects to develop and apply their knowledge and skills.

**Student Learning Objectives:**  
Upon successful completion of this course, students will be able to:

1. Understand various methods of logic and logical reasoning to determine which method is best to solve a given problem  
2. Critically evaluate potential sources of empirical data relevant to specific problems  
3. Translate descriptions of problems from various contexts into models, critically evaluate multiple alternatives, and select the best course of action  
4. Understand mathematical and statistical principles available for real-world problem-solving  
5. Develop oral and written communication skills by formulating and analyzing various decision scenarios and interpreting the results

**Learning Objectives for Core Curriculum Requirements**  
This course satisfies 3 hours of the credit requirement in the General Education Core #090-Integrative/Experiential Learning Option. Courses in this category involve interdisciplinary topics or approaches and/or learning through direct experience. This course is explicitly designed as integrative, in that students will be taught how to bring quantitative analysis techniques and critical judgment to solve problems and achieve goals in their own majors, classes, and career development. It is experiential, in that student experiences in university and career development activities are the source materials for all of
Students Learning Objectives for this area include:

- **Critical Thinking** – For this objective, students are to demonstrate comprehension of a variety of information sources by analyzing and evaluating the logic, validity, and relevance of the information available to solve challenging problems, to arrive at well-reasoned conclusions, and to develop and explore new questions. For QUMT 2398, students will be required to collect and evaluate data in both quantitative and written form, making judgments about its truthfulness, timeliness, reliability, and usefulness for the decision-making goal. Students will exercise critical judgment about the empirical data, the mathematical and statistical principles to be applied, interpretation of the results, and the validity of decisions reached thereby.

- **Communication** - For this objective, students are to demonstrate the ability to adapt their communications to a particular context, audience, and purpose using language, genre conventions, and sources appropriate to a specific discipline and/or communication task. In QUMT 2398, students will have multiple activities in which they present the reasoning and results of their analyses in clear, concise form.

- **Empirical and Quantitative skills** - For this objective, students are to make and communicate informed conclusions and predictions based on the interpretation, manipulation, and analysis of empirical and quantitative data. In QUMT 2398 students learn to apply mathematical and statistical tools on real-life problem contexts. Students will carry out empirical data collection, using their critical judgment about data from many potential sources. They will use the patterns and relationships of the relevant data to create their own algorithms for generating optimal solutions.

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**Robert C. Vackar College of Business and Entrepreneurship Learning Goals and Mission**

<table>
<thead>
<tr>
<th>BBA Learning Goals</th>
<th>How measured</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demonstrate foundational knowledge of functional area concepts and theories.</strong></td>
<td>☑ Class Quizzes</td>
</tr>
<tr>
<td><strong>Demonstrate effective business communication skills.</strong></td>
<td>☑ Case analysis and discussion, team project</td>
</tr>
<tr>
<td><strong>Apply sustainable practices (economic, social and ethical, and environmental) to business decision-making.</strong></td>
<td>☑ Hands-on activities and exercises, homework assignments,</td>
</tr>
<tr>
<td><strong>Demonstrate an understanding of globalization, including conditions on the US-Mexico border, shape effective business decision making.</strong></td>
<td>☐</td>
</tr>
<tr>
<td><strong>Apply quantitative analytical skills to business decision-making.</strong></td>
<td>☑ Hands-on activities and exercises, homework assignments, case analysis and discussion, team project</td>
</tr>
<tr>
<td><strong>Demonstrate the ability to critically analyze business issues.</strong></td>
<td>☑ Hands-on activities and exercises, homework assignments, case analysis and discussion, team project</td>
</tr>
</tbody>
</table>
INFS Major Learning Objectives

<table>
<thead>
<tr>
<th>INFS Major Learning Objectives</th>
<th>This course contributes to the following Department of Management learning objectives:</th>
<th>How measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the role of the Information Systems department is to align Information Systems projects to the strategic goals of the company and to enhance organizational effectiveness.</td>
<td>☑</td>
<td>Hands-on activities and exercises, homework assignments, case analysis and discussion, team project</td>
</tr>
<tr>
<td>Students will understand concepts needed to design and implement information systems infrastructure.</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Students will be able to design and implement information systems infrastructure.</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Students will be able to communicate effectively orally and in writing.</td>
<td>☑</td>
<td>Homework assignments, case analysis and discussion, team project</td>
</tr>
</tbody>
</table>

**Grading Policies**

- Hawkes learning assignments ..................................................................................................... 360 points
- Attendance quizzes ........................................................................................................................ 40 points
- Individual projects ....................................................................................................................... 150 points
- Group projects ............................................................................................................................. 150 points
- Tests (100 x 3) ............................................................................................................................. 300 points

**Grading Scale**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Points</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 and above</td>
<td>(900 points or more)</td>
<td>A</td>
</tr>
<tr>
<td>80 up to 90</td>
<td>(800 to 899 points)</td>
<td>B</td>
</tr>
<tr>
<td>70 up to 80</td>
<td>(700 to 799 points)</td>
<td>C</td>
</tr>
<tr>
<td>60 up to 70</td>
<td>(600 to 699 points)</td>
<td>D</td>
</tr>
<tr>
<td>Below 60</td>
<td>(less than 600 points)</td>
<td>F (Fail)</td>
</tr>
</tbody>
</table>

**Calendar of Activities**

Include in this section a table or list that provides information for students regarding important dates, assignments or activities. The UTRGV academic calendar can be found at http://my.utrgv.edu at the bottom of the screen, prior to login. Some important dates for Spring 2017 include:

- Jan 17: Spring classes begin
- Jan 30 (Mon.): Last day to add or register for Spring classes
- Jan 23 (Mon.): Last day to withdraw (drop all classes) for a 80% refund
- Feb 1 (Wed.): Census day (last day to drop without it appearing on the transcript)
- Mar 13 – Mar 18 (Mon. – Sat.): Spring Break. No classes
- April 13 (Thurs): Last day to drop (DR grade) a class or withdraw (grade of W)
- May 4 (Thurs): Study Day, no classes
UTRGV Policy Statements

STUDENTS WITH DISABILITIES:
If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. Brownsville Campus: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at ability@utrgv.edu. Edinburg Campus: Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at ability@utrgv.edu.

MANDATORY COURSE EVALUATION PERIOD:
Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available: April 12 - May 3 for full spring semester courses

CLASS ATTENDANCE AND PARTICIPATION
Students are expected to attend all lectures. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Federal regulations require that attendance of veterans be carefully monitored. Veterans with excessive absences will be reported. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations. Absences in excess of three class hours without acceptable documentation may result in a failing grade or a drop from the course. Students arriving late or leaving early will be recorded as tardy. Every two tardy records will count as an absence. Students with excessive tardiness (6 or more) may be dropped from the course.

The faculty member will check for attendance at the beginning of class hour. Students are advised to be punctual for class because they will be counted as absent when they are not in their assigned seat when attendance is taken.

MISSED EXAM/LATE ASSIGNMENT POLICY
Prior arrangements must be made with the instructor, whenever possible. To be fair to all other students, the weight of the missed test will be added to the next test. In the case of the final test, the student will be given a comprehensive examination.

This arrangement will only be given to students who are able to produce an official document within a reasonable time (within 7 days) period. Examples of official documents are medical reports, accident or traffic violations, and other unforeseen circumstances. Official documents should be written in English. All non-United States documents must be authenticated and verified.

Without an official document, the following rules will apply to late assignment submissions:

- Within 24 hours: 80 %
- Within 48 hours: 50 %
- After 48 hours: 0 %
SCHOLASTIC INTEGRITY:
As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE:
In accordance with UT System regulations, your instructor is a “responsible employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student’s time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

COURSE DROPS:
According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Student Learning Objectives addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction to Decision Analytics – Getting Started – Logic</td>
<td>EQS, COM, CT</td>
</tr>
<tr>
<td>Week 2</td>
<td>Algebraic applications I: 1-variable solutions</td>
<td>EQS, COM, CT</td>
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<tr>
<td>Week 3</td>
<td>Algebraic applications II: Solutions under constraints</td>
<td>EQS, COM, CT</td>
</tr>
<tr>
<td>Week 4</td>
<td>Empirical Sampling and Coding Methods:</td>
<td>EQS, COM</td>
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<tr>
<td>Week 5</td>
<td>Hypothesis Testing Population vs Sample data</td>
<td>EQS</td>
</tr>
<tr>
<td>Week 6</td>
<td>Regression Analysis I Concepts</td>
<td>EQS</td>
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<tr>
<td>Week 7</td>
<td>Regression Analysis II Applications with empirical data</td>
<td>EQS</td>
</tr>
<tr>
<td>Week 8</td>
<td>Algebraic applications III: Developing and using scoring scales</td>
<td>EQS, CT</td>
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<tr>
<td>Week 9</td>
<td>Analyzing time series I: comparing two alternatives</td>
<td>EQS, CT</td>
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<tr>
<td>Week 11</td>
<td>Middle of term presentations</td>
<td>COM</td>
</tr>
<tr>
<td>Week 12</td>
<td>Analyzing time series data II: comparing multiple alternatives</td>
<td>EQS, CT</td>
</tr>
<tr>
<td>Week 13</td>
<td>Middle of term presentations</td>
<td>COM</td>
</tr>
<tr>
<td>Week 14</td>
<td>Predictive modeling:</td>
<td>EQS, CT</td>
</tr>
<tr>
<td>Week 15</td>
<td>Final Presentations</td>
<td>COM</td>
</tr>
</tbody>
</table>

*This syllabus and schedule are subject to change in the event of extenuating circumstances.*
Student Directions – Web based

Important Information
Course ID: UTRGVVLMc
Instructor Name: Jun Sun
Section Name: QUMT2398-06

Do NOT purchase a used License Number or Access Code (from other students or online vendors). License Numbers and Access Codes are registered to the original purchaser only.

Create Your Hawkes Account
Go to learn.hawkeslearning.com and click Create an Account to create an account.

1. If you have already purchased your materials, enter your License Number (located on the yellow sticker in your materials) or Access Code and click Validate. OR If you need to purchase an Access Code, use the link to purchase one from the Hawkes website.
   a. Select the option to Purchase an Access Code.
   b. Fill out the form with your information.
   c. Click Submit to receive your personalized Access Code.
   d. Copy and paste or type your Access Code into the New User Setup page.

2. Fill out the form with your information or confirm the preloaded information.

3. Set your password, time zone, and security questions.

4. Add a profile image.

Enroll in Your Course
Select your instructor and section from the drop-down menus and click Enroll.
You are now ready to complete assignments for this course!

Explore Your Course
Watch the Video Tour located under the profile menu to learn more about Hawkes.

1. The Dashboard includes your course information and the mini To-Do List.
2. The To-Do List shows you when you need to complete homework or take a test.
3. The Navigation Toolbar contains links to important tools such as your grades, eBooks, the notifications center, and messages.
Complete Your Homework
Each lesson involves three phases: Learn, Practice, and Certify. Use Learn and Practice to learn the concepts and work out practice problems. When you feel confident in the material, move to Certify to complete your homework.
For additional help, go to http://www.hawkestv.com to watch videos on every lesson.

Get Help
If you have any questions about registering your email address and password, enrolling in your course, or using the site, please contact Hawkes Technical Support.

Phone: 800.426.9538
Phone Hours: Monday - Friday, 8:30am - 10:00pm ET

Online Chat Support: http://www.hawkeslearning.com/chat
Chat Hours: 24 hours a day, 7 days a week

Technical Support Email: support@hawkeslearning.com