

**Data Driven Decision Making**  
**QMB 6303 - CRN 13828**  
**Spring 2020**  
**Syllabus**

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Class Times & Room: Tuesday- 05:30pm - 08:15pm -- Lutgert Hall 1206

Office Hours:

Tuesday - 12 Noon to 12:30 PM & 3:15 pm to 5:15 pm

Thursday - 12 Noon to 12:30 PM & 2:00 pm to 4:00 pm

Other times by appointment only

The instructional materials are purposefully selected to align with the course and module/unit-level learning objectives/competencies and to integrate effectively with the tools, assessments, and learning activities selected for the course. Student achievement of the stated learning objectives is dependent upon the successful completion of all required course materials.

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**About the Course:** The course provides you with the fundamental concepts and tools needed to understand the emerging role of data driven decision-making in organizations. In this course, we will freely interchange the term data driven decision-making with business analytics, or sometimes just analytics, as it is commonly referred in many organizations. It will show you how to apply basic business analytics tools within a spreadsheet environment, and how to communicate with professionals to effectively interpret results for making better business decision. Emphasis is on applications, concepts and interpretation of results, rather than theory and calculations. You will use a computer software package for data analysis.

This course is organized around learning modules which provides a map of requirements for assignments and corresponding due dates. There are six modules to be completed, each containing a major topic in data driven decision making:

- Module 1: Decision analysis
- Module 2: Trendlines and Regression analysis
- Module 3: Forecasting techniques
- Module 4: Spreadsheet modeling, simulation and risk analysis
- Module 5: Linear and Non-linear optimization
- Module 6: Data mining

Class Schedule\*

The Schedule provides a map of the course to be completed in sequence. It is organized by modules and chapter content. The critical item to remember is that assignments and activities **cannot be delayed**. See Canvas for due dates.

Module	Activities
<p>Course Introduction</p> <p>Module 1: Decision analysis</p>	<p>Getting familiar with course structure:</p> <p>Verification of attendance requirement - survey via Canvas Course materials and software requirements Syllabus, course introduction &amp; description</p> <p>Decision Making as a science - Chapter 1 The nature of decision making: Decision Analysis - Chapter 9</p> <p>Complete assignment: ASG-decision analysis Complete online assignment LearnSmart (LS)     LS-chapter 1     LS-chapter 9</p> <p>Check online schedule for due dates and other requirements</p>
<p>Module 2: Regression analysis</p>	<p>Predictive models <i>Supplemental material available online</i></p> <p>Complete assignment ASG-regression Complete class activity CA-regression</p> <p>Check online schedule for due dates and other requirements</p>
<p>Module 3: Forecast</p>	<p>Predictive models Chapter 10</p> <p>Analytics in the boardroom Complete assignment ASG-forecast Complete class activity CA -forecast Complete online assignment LearnSmart (LS)     LS-chapter 10</p> <p>Check online schedule for due dates and other requirements</p>

Module	Activities
Module 4: Spreadsheet modeling and simulation	Prescriptive models Chapters 4, 12 and 13 ( <i>plus supplemental material available online</i> )  Complete assignment ASG-simulation Complete class activity CA -simulation Complete online assignment LearnSmart (LS) LS-chapter 4 LS-chapter 12  Check online schedule for due dates and other requirements
Module 5: Linear optimization	Prescriptive models Chapter 2, 3, 5, 6 and 7  Complete assignment ASG-optimization Complete class activity CA -optimization Complete online assignment LearnSmart (LS) LS-chapter 2 LS-chapter 3 LS-chapter 7  Check online schedule for due dates and other requirements
Module 6: Data mining	Descriptive models <i>Supplemental material available online</i>  Complete assignment ASG-datamining Complete class activity CA -datamining  Check online schedule for due dates and other requirements
Course conclusion	Complete Team Project Take Final Exam Check online schedule for due dates and other requirements

**Course Prerequisites:** None

**Required Text, Materials and Software:** In addition to the materials listed below, I will post supplemental materials, which may include research publications from peer-reviewed journals, white papers, reports, additional slides and problems, etc. Links to all these resources and/or pdf files will be posted on Canvas Announcements page.

**1. Textbook:** Intro to Management Science (with Connect Access) – Use Canvas to register with Connect Edition: 6th  
ISBN: 9781264178049  
Author Hillier  
Publisher: McGraw-Hill

**2. Software:** This course will use Microsoft Excel **and** other 3<sup>rd</sup> party software ( There is a cost for the Analytic Solver software. Instructions will be provided by the instructor)

**3. Recommended reading:** LCOB writing guidelines for information on types of business writings, mistakes to avoid, do's and don'ts, use of references, and styles.

**4. Optional reading material:** You may also want to read a good book about how companies are using what we cover in this course to gain a competitive edge in the business world:

Competing on Analytics: Updated, with a New Introduction: The New Science of Winning  
by Thomas H. Davenport, Jeanne Harris, David Abney (Foreword by). Harvard Business School Press.  
(paperback)

**Learning Objectives:** At the end of the course you should be able to:

1. Discuss and apply key concepts and principles of analytics in business
2. Interpret results of data analysis techniques utilized in business decision making
3. Select, develop and evaluate data models in a real-world context
4. Perform sensitivity analysis
5. Discover patterns from large amounts of data to solve problems and make predictions
6. Use spreadsheets for data analysis and decision making
7. Communicate the results of data analysis in a fair, objective and unbiased manner.

Data driven decision-making involves "learning by doing" assignments. That is, the course and assignments have been designed so you can learn essential skills and concepts from carefully selected applications used in the practice of business analytics.

**LearSmart assignment (LS)** are online assignments consisting of multiple choice type questions but may include fill in the blanks and short answers as well. They are designed to capture your understanding of concepts and your ability to interpret results. The lowest two LS grades are dropped from the overall LS grade computations.

**Assignments (ASGs).** Each learning module has a corresponding assignment to be completed individually. By solving these assignments, you will be able to develop an understanding of the techniques, concepts, tools and issues encountered by professionals in this area. These assignments require the use of a computer and appropriate software for model building and data analysis. Data analysis for all assignments will be done using Microsoft Excel. Some of the modules will require the assistance of a third party software (see course description and required material page). Upload the final work to Canvas.

Pay attention to the organization and quality of your work file, which may reduce your overall grade. **LATE ASSIGNMENTS WILL HAVE A 10% PENALTY PER DAY.** It is your responsibility to submit the document **on or before** the due date. If you plan to travel or observe a holiday, plan ahead and submit assignment(s) earlier.

**Class activities (CA).** These assignments are completed in class and collected during class. They are performed in teams requiring your presence in the classroom on the assigned dates. You are expected to collaborate with your teammates and provide evidence of your own contribution which may impact your grade. Teams will be formed by the instructor only. Due to the nature of these activities, there are no makeups for CA activities.

**Team project:** Students will complete a course project delivered at the end of the term. However, students will have to prepare an Course Collaborative Charter in conjunction with the assigned project. See Canvas for due dates.

**Cumulative final exam:** See university schedule for date, time and classroom information.

**Grades:** The final grade is computed as a percentage of the total points earned in the course using the following weights (activities in **bold** are performed in teams):

ACTIVITY	WEIGHT	Associated Learning Objective(s)
ASG Decision analysis	5%	3,7
ASG Regression analysis	5%	3,4,6,7
ASG Forecasting	5%	3,4,6,7
ASG Simulation and risk analysis	7%	3,4,6
ASG Optimization	7%	3,4,6
ASG Data mining	7%	3,5,7
LS Quizzes (lowest 2 grades dropped)	7%	1,2
Final exam	15%	1,2
<b>1 team project</b>	<b>17%</b>	<b>1,2,7</b>
<b>Class activities (CA)</b>	<b>25%</b>	<b>1,2,4,7</b>
Total:	100%	

Letter grades will be assigned based on the following criteria as a percentage of total points:

- 92 and above: A
- 90 to less than 92: A-
- 87 to less than 90: B+
- 82 to less than 87: B
- 80 to less than 82: B-
- 75 to less than 80: C+
- 70 to less than 75: C
- Below 70: F

Incomplete will be given by exception when a limited portion of the course material has not been completed by the last exam due date, in accordance with University policy published in the Catalog. The instructor on an individual basis will review each case.

Communication protocol: If you are contacting the instructor by email, a few items will help expedite solving the question:

1. When communicating with colleagues and the instructor, you are expected to use higher standards of courtesy and professionalism consistent with an MBA level.
2. Describe the issue/question you have as clearly as possible. If there are multiple parts, breakdown the question in multiple parts. I will address them one by one.
3. Attach a draft of the work
4. Expect a return within 24 hours. Therefore plan your work accordingly.
5. Submit your email with sufficient time for review and feedback.

Canvas Course Announcements: I use Canvas Course Announcements page very often to communicate with the class as a whole to convey important up-to-date information, provide general feedback and interact with the class. Please check announcement on a regular basis.

**Academic Misconduct:** Any material submitted for course credit must be your own work if it is an individual-based assignment or the work of your team if it is a group-based assignment. Students are not permitted to discuss, read, etc. the work, thoughts, and ideas regarding the case or exams with other students (or another team for case work). **If outside references are used**, they must be properly referenced. Also, with the case work, it is recommended that you take action to protect your work, such as collecting your materials from the lab printers and disposing of rough drafts at home. Case write-ups that are similar to current or past case write-ups or similar to on-line materials may initiate serious disciplinary action, so please do your own work as an individual or, when required, as a team. Suspected cases of academic misconduct will be reported to the appropriate university departments. Typical penalties include an F in the course, disciplinary probation and/or possible dismissal from the university. *Academic misconduct is a serious threat to the integrity and value of your degree and all that we do. Employers expect you to know the body of knowledge that is documented in your academic transcripts.* The FGCU Student Code of Conduct documents (pp. 11, 18-24) the policies related to academic misconduct and honesty so please read these materials. The FGCU Student Guidebook is available online at: <http://studentservices.fgcu.edu/judicialaffairs/new.html> (Links to an external site.)

**Academic Behavior Standards and Academic Dishonesty:** All students are expected to demonstrate honesty in their academic pursuits. The university policies regarding issues of honesty can be found in the FGCU Student Guidebook under **the Student Code of Conduct and Policies and Procedures** sections. All students are expected to study this document which outlines their responsibilities and consequences for violations of the policy. The FGCU Student Guidebook is available online at <http://studentservices.fgcu.edu/judicialaffairs/new.htm> (Links to an external site.)

**University Nondiscrimination Statement:** Florida Gulf Coast University is committed to ensuring equity and fairness for all University employees, students, visitors, vendors, contractors and other third parties. As such, the University prohibits discrimination on the bases of race, color, national origin, ethnicity, religion, age, disability, sex (including sexual harassment/assault), gender identity/expression, marital status, sexual orientation, veteran status or genetic predisposition with regard to admissions, employment, programs or other activities operated by the University. This prohibition extends to enforcement of **Title IX** of the Education Amendments of 1972. Questions or complaints should be directed to the Office of Institutional Equity and Compliance (OIEC). The OIEC's phone number is (239)745-4366; the OIEC email address is [OIEC@fgcu.edu](mailto:OIEC@fgcu.edu)

**Disability Accommodations Services:** Florida Gulf Coast University, in accordance with the Americans with Disabilities Act and the university's guiding principles, will provide classroom and academic accommodations to students with documented disabilities. If you need to request an accommodation in this class due to a disability, or you suspect that your academic performance is affected by a disability, please see me or contact the Office of Adaptive Services. The Office of Adaptive Services is located in the Wellness Building. The phone number is 239-590-7956 or Video Phone (VP) 239-243-9453. In addition to classroom and campus accommodations, individuals with disabilities are encouraged to create their personal emergency evacuation plan and FGCU is committed to providing information on emergency notification procedures. You can find information on the emergency exits and Areas of Rescue Assistance for each building, as well as other emergency preparedness materials on the Environmental Health and Safety and University Police Department websites. If you will need assistance in the event of an emergency due to a disability, please contact Adaptive Services for available services and information.

**Counseling and Psychological Services (CAPS)** provides free counseling and therapy services (including psychiatry) to all FGCU students. Please walk in to the second floor Howard Hall office any week day between 8:30 and 4:30 to schedule an initial contact appointment. Visit the CAPS website at [www.fgcu.edu/caps](http://www.fgcu.edu/caps) ([Links to an external site.](#)) for more information. CAPS offers a 24/7 Helpline at (239) 745-3277 (EARS).

**Student Observance of Religious Holidays:** All students at Florida Gulf Coast University have a right to expect that the University will reasonably accommodate their religious observances, practices, and beliefs. Students, upon prior notification to their instructors, shall be excused from class or other scheduled academic activity to observe a religious holy day of their faith. Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence. Students shall not be penalized due to absence from class or other scheduled academic activity because of religious observances. Where practicable, major examinations, major assignments, and University ceremonies will not be scheduled on a major religious holy day. A student who is to be excused from class for a religious observance is not required to provide a second party certification of the reason for the absence.

**Resources for Faculty General Education:** Information on General Education program requirements is available online at [http://www.fgcu.edu/General\\_Education/index.html](http://www.fgcu.edu/General_Education/index.html) ([Links to an external site.](#))

**Service-Learning:** Information on integrating service-learning into the course and course syllabus is available online at <http://www.fgcu.edu/Connect/> ([Links to an external site.](#))

**Distance-Learning:** Information on distance learning courses is available online at <http://itech.fgcu.edu/distance/> ([Links to an external site.](#))

**Online Tutorials:** Information on online tutorials to assist students is available online at <http://www.fgcu.edu/support/Approved> ([Links to an external site.](#))

**Canvas Learning Management System and Demonstration Site** Information on Canvas is available online at <http://canvas.fgcu.edu/> and <https://fgcu.instructure.com/courses/7692>

#### **Library Resources:**

Main page: <http://library.fgcu.edu/> ([Links to an external site.](#))

Tutorials & Handouts: <http://library.fgcu.edu/RSD/Instruction/tutorials.htm> ([Links to an external site.](#))

Research Guides: <http://fgcu.libguides.com/> ([Links to an external site.](#))

Faculty Support: [http://library.fgcu.edu/faculty\\_index.html](http://library.fgcu.edu/faculty_index.html) ([Links to an external site.](#))

**Respondus Monitor – Remote, Online Exam Monitoring:** In order to protect the integrity of online assessments that are delivered to students off site in a non-proctored location, this course may employ *Respondus Monitor* technology that will allow for the web-enabled monitoring of exams and quizzes. Students must own a computer device and an associated webcam that meet the minimum requirements of the University's standard remote monitoring system. Additional information:

*Respondus Monitor* overview: <http://respondus.com/products/monitor/> ([Links to an external site.](#))

**Respondus LockDown Browser – Classroom and/or Remote Online Exams:** In order to protect the integrity of classroom *or* remote online exams, this course may employ *Respondus LockDown Browser* technology that will allow for the student's temporary restriction to a designated online testing website, disabling the ability to print, copy, access other applications or move to any other URL for the duration of the assessment. This technology may be used on campus in University computer classrooms *or* for remote delivery of quizzes and exams. [For

online classes only: students must own a computer that meets the minimum requirements of the University's standard lock down browser application.] Additional information:

*Respondus LockDown Browser overview: <http://respondus.com/products/lockdown-browser/> (Links to an external site.)*

**Lecture Capture Technology/FGCU Capture – Classroom Recording:** This course may employ technology that will allow for audio and/or video recording of live classroom sessions. This lecture capture technology is utilized for the sole purpose of enhancing student learning. It may provide for supplemental student instruction via secure links to recorded session(s,) the live stream of courses, presentations of off-site guest speakers and/or the delivery of course instruction utilizing “flipped classroom” methodologies. Student questions and/or comments may be included as a part of any session being recorded. See FGCU-CAPTURE for additional details and training <http://aets.fgcu.edu/fgcucapture.asp>



\* This is a planned course structure and may change if necessary to meet learning goals