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Office Hours: Before Class Hour or By Appointment

**BSAD 443, Business Analytics**  
**Spring Quarter 2019, Thursday 6-9pm Schreiber Center Room 302**

**Catalog Description**

Business analytics leverages the vast amount of streaming data (“big data”) to extract actionable insights and drive better business decisions. It incorporates the best in data engineering, analytics methods, visualization techniques and communication of results. Business analytics rely heavily on statistical and quantitative analysis, predictive and prescriptive models to provide a forward looking business decision making.

**Course Overview**

This class introduces students to basic principles in data investigation and modeling, and the fundamentals on how to turn big data into intelligent actionable insights. Equal time is devoted to class presentations and hands-on laboratory sessions. Emphasis is placed on the business analytics process design, use of analytical techniques, data mining methodologies, and data visualization to make evidence-based decisions. Through the use of real business case studies and lab sessions students will develop a comprehensive, innovative, and practical approach to analytics that enables them to tackle diverse and complex business problems.

**Course Objectives and Learning Outcomes**

1. Explain the key factors differentiating business intelligence from business analytics
2. Frame a problem in a business analytics context to drive better decision making and to gain the competitive edge
3. Identify the major steps in the design of a typical business analytics process
4. Explain core design concepts and methodologies in data modelling, and data management specific to business analytics
5. Describe the big data effect, and its main implications including social and ethical issues
6. Appraise various technological solutions for different data conditions
7. Determine the proper analytics methods for descriptive, predictive, and prescriptive analyses and applications
8. Acquire hands-on experience with various tools for data analytics, data visualization, and smart reporting of results
9. Create a compelling and novel case study depicting some of today's real world examples

**Course Materials**

**Recommended Book:** *Business Analytics Principles, Concepts, and Applications* by Marc J. Schniederjans et al, Pearson FT Press, 2014

**Optional Book:** *Keeping Up with the Quants* by Thomas H. Davenport, Harvard Business Review Press, 2013

### **Lab Resources**

Students will have the opportunity to work with real data and some leading-edge tools in the industry such as R (statistical computing and graphics) and Tableau (visual analytics), as needed.

### **Additional Resources**

Additional notes, reading material and on-line references will be shared as needed during class

### **Special Notes**

This class may occasionally deviate from the course outline above. The instructor reserves the right to make changes as needed to the course syllabus. As a courtesy to others and to minimize distractions please turn-off or mute any cellphones, or audible devices.

Laptops and alike are to be used solely for class purposes and only when permitted.

## **Quinlan School of Business Policies:**

### **Attendance & Participation**

Class attendance and participation are fundamental components of learning, so punctual attendance at all classes, for the full class meeting period, is expected of Quinlan students. Participation is about prompt attendance, and active engagement during class and lab session reflected by asking questions, maintaining a focus, completing assignments, and exhibiting a genuine interest to learn

If you must miss a class or leave early, please notify in advance. You are responsible for any class assignments or requirements missed during an absence.

### **Make-Up Examinations**

Loyola University academic policy provides that tests or examinations may be given during the semester or summer sessions as often as deemed advisable by the instructor. Because Quinlan faculty believe examinations represent a critical component of student learning, required examinations should be taken during the regularly scheduled class period. **Make-up examinations are discouraged.** Exceptions may be granted only by the faculty member or department chair, and only for unavoidable circumstances (illness verified by a signed physician's note, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, or religious observance). A make-up final examination may be scheduled only with the permission of the appropriate Quinlan Assistant or Associate Dean.

### **Academic Integrity**

All members of the Quinlan School shall refrain from academic dishonesty and misconduct in all forms, including plagiarism, cheating, misrepresentation, fabrication, and falsehood...Plagiarism or cheating on the part of the student in individual or group academic work or in examination behavior will result minimally in the instructor assigning the grade of "F" for the assignment or examination.

For further information about expectations for academic integrity and sanctions for violations, consult the complete Quinlan School of Business Honor Code and Statement of Academic Integrity on the Quinlan website.

## **Grading Criteria**

### **Examination, Lab Work, and Final Project**

There will be one mid-term exam and a final exam. Exams are open notes and laptops are allowed. Grading is heavily based on methodology, formulating and steps clarity in solving a problem. Attention is placed on acquiring analytical thinking and problem-solving skills in a business environment driven more and more by data and metrics.

The instructor may decide to have a final project instead of final exam. The final project provides an opportunity to put in action the material learned in class and during the lab sessions.

Equally important are the applied lab sessions. Assigned lab work counts towards the final grade and will need to be submitted.

Missing an exam without a valid excuse and prior notice will result in a zero grade. The instructor reserves the right to deem an excuse valid or not.

### **Self-Study**

Take-away review problems and reading materials will be assigned. It is highly recommended for students to enhance their learning in class by following up with these self-studies. Homework will not be graded but will be selectively reviewed in class. Exams are based on material covered in class lecture and lab work, and assigned review problems.

### **Grading**

Mid-Term Exam	40
Lab Sessions	20
Final Exam	40

### **Course Grading Scale**

A	100-93%
A-	92-90
B+	89-87
B	86-83
B-	82-80
C+	79-77
C	76-73
C-	72-70
D+	69-67
D	66-60
F	59 and below

### **Loyola University Grading Weights**

A	4.00
A-	3.67
B+	3.33
B	3.00
B-	2.67
C+	2.33
C	2.00
C-	1.67
D+	1.33
D	1.00
F	0.00

**Weekly Course Outline**

<b>Class Week</b>	<b>Class Lecture</b>	<b>Lab Work</b>
<b>Week 1 Feb 21</b>	Introduction to Business Analytics	Tools and Technology
<b>Week 2 Feb 28</b>	Design Concepts & Business Discovery	Data Modeling & Basic Statistical Calculations on R
<b>Week 3 Mar 7</b>	<u>Spring Break</u>	<u>Spring Break</u>
<b>Week 4 Mar 14</b>	Data Sourcing, Preparation & Flow	ERD Data Modeling & R Basic Statistics
<b>Week 5 Mar 21</b>	Descriptive & Predictive Analytics	Descriptive Analytics, Linear Regression
<b>Week 6 Mar 28</b>	Mid-Term Exam	Mid-Term Exam
<b>Week 7 Apr 4</b>	Prescriptive Analytics & Simulations	Optimization & Sensitivity Analysis
<b>Week 8 Apr 11</b>	Industry Case Studies & Project Outline	Predictive Modeling
<b>Week 9 Apr 18</b>	Visual Analytics & Smart Reporting	Visual Analytics
<b>Week 10 Apr 25</b>	Data Management, Governance, Privacy & Ethics	Practical Studies
<b>Week 11 May 2</b>	Final Exam/Presentation	Final Exam/Presentation