



UNIVERSITY OF THE INCARNATE WORD

Extended Academic Programs

Term: UIW Online Fall 2 2016

Syllabus: PMBA 6312 Quantitative Methods and Research

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Office Hours: By appointment

Catalog description:

Quantitative methods and research applies quantitative methods including decision theory, linear programming, regression analysis, simulation, etc. to real-world business problems in the areas of marketing, finance, and operations. Operations applications will be extended to include concepts related to business process improvement, supply chain management, and job, facility, and office design. Students will also learn techniques to collect, organize, and structure data for analysis including sampling, measurement, and the evaluation of survey worth. This course will culminate in research that applies knowledge to a real-world business problem. Key steps include defining a problem, assessing current knowledge, determining the value of additional information, measuring where information value is high, and using the results to prepare a detailed action plan.

Context:

Prerequisite: BMDS 3370 or BMDS 3371 or the equivalent in the past five years (or the instructor's approval).

Course overview:

Topics to be included / Teaching strategies / Technological skills development

- ✚ Topics include probability, descriptive statistics, decision theory, linear programming, sensitivity analysis, network models, transportation models, applied information economics, decision analysis, forecasting, process improvement, supply chain analytics, office layout, waiting line models, inventory management, and PERT/CPM
- ✚ In addition to the supplementing the text with lectures, student-centered, problem-based learning techniques including case studies, simulations, in-class activities, group work, and student presentations and/or facilitation of materials will be utilized.
- ✚ MS Excel will be used to model, analyze, and evaluate problems in quantitative methods and research

Text:

Anderson, D. R., Sweeney, D. J., Williams, T. A., Camm, J. D., Cochran, J. J., Fry, M. J., Ohlmann, J. W. (2016). *Quantitative Methods for Business*. Cengage. ISBN: 978-1-285-86631-4

Hubbard, D. (2014). *How to Measure Anything: Finding the Value of Intangibles in Business*. Wiley. ISBN: 978-1118539279

Course outcomes: Upon completion of the course, students will be able to	Assessment: The objectives will be assessed
Apply quantitative methods to problems in the areas of marketing, finance, and operations management	By Critical analysis questions, examinations, and student-centered, problem-based learning activities
Make data-driven decisions through an integration of quantitative analysis, critical thinking, and leadership	By Critical analysis questions, examinations, and student-centered, problem-based learning activities
Use applied information economics to collect data, perform analysis, and evaluate results	By Critical analysis questions, examinations, and student-centered, problem-based learning activities

Graded Material and Relative Weight:

Participation in Weekly Discussion Boards	15%
Applied Information Economics Research Project	20%
Problem Sets	20%

Midterm Examination
Final Examination

20%
25%

Weekly Discussions:

This consists of your weekly postings to our general discussion thread. Weekly threaded discussions have two objectives: 1) for students to demonstrate their understanding of key concepts and 2) for students to engage their peers in a discussion that examines how to app. Your grade will be based on the degree to which you demonstrate learning through *frequent* and *meaningful* discussion with your peers. In order to receive a passing grade, please post your initial response by midnight Wednesday night. Another good rule of thumb is to enter the boards at least three different days per week, and to make sure that you consistently engage your peers in sufficient detail. Threaded discussions must be completed each week before midnight Sunday night.

Problem Sets:

After reading the text, each week you are to enhance your understanding of the material by reviewing presentations for each chapter. You will then use this knowledge to solve problems. Problem sets will be comprised of either end-of-chapter problems and/or online multiple choice questions. Answers to all questions must be submitted before midnight Sunday night. Since students have been provided with advanced notice of due dates for all assignments, late work is strongly discouraged. If for some reason a student has a valid excuse with documentation, late work will be accepted with a deduction up to, equal to, or greater than 15% per day. Further, in order to receive full credit for problems, please show your work when necessary. Finally, complete your work using MS Word or MS Excel.

Group Projects/Presentations:

Select a decision-oriented issue from your organization that can be measured using Applied Information Economics (AIE) to come to a specific recommendation. Write a report that describes the AIE framework as follows:

- ✚ Define the decision
- ✚ Determine what you know
- ✚ Compute the value of additional information
- ✚ Measure where information value is high
- ✚ Make a decision and act on it (or prepare a detailed action plan)

This report should be written in APA format. Also, please make sure that your final project is within 7-10 pages written plus exhibits. Finally, students are encouraged to work in groups comprised of less than or equal to 4 individuals.

Midterm and Final Examinations:

Objective-type examination consisting of multiple choice questions, technical exercises and/or essay problems that cover topics from the 1st half of the term for the midterm examination and topics from the 2nd half of the course for the final examination. Each student will be given a different examination, and examinations must be completed by midnight Sunday night. Again, since students have been provided with advanced notice of due dates for all examinations, late work will generally not be accepted. If for some reason a student has a valid excuse with documentation, late work will be accepted with a deduction up to, equal to, or greater than 15% per day.

Each week you will notice a number in parenthesis. This is the Alternative Learning Equivalency for this course. It is the expected minimum amount of time (hours) you will spend on that particular week's activity in addition to your regular studies (recommended 6 to 10 hours per week for a "B" range grade).

Week	Chapter Readings	Homework
1 10-17 to 10-23	Chapter 2 (Anderson et al.) – An Introduction to Probability Chapters 1 to 2 (Hubbard)	Presentation/Problems <ul style="list-style-type: none"> • Review notes packets for chapter 1 in Anderson et al. and read chapters 1 and 2 in Hubbard before answering critical analysis questions (3) Discussion <ul style="list-style-type: none"> • Take part in Week One General Discussion (3) Problem Set 1: Due by midnight Sunday night

<p>2 10-24 to 10-30</p>	<p>Chapter 3 (Anderson et al.) – Probability Distributions</p> <p>Chapter 4 (Anderson et al.) – Decision Analysis</p> <p>Chapters 3-5 (Hubbard)</p>	<p>Presentation/Problems</p> <ul style="list-style-type: none"> Review notes packets for chapters 3 and 4 in Anderson et al. and read chapter 3 in Hubbard before answering critical analysis questions (3) <p>Discussion</p> <ul style="list-style-type: none"> Take part in Week Two General Discussion (3) <p>Problem Set 2: Due by midnight Sunday night</p>
<p>3 10-31 to 11-6</p>	<p>Chapter 13 – PERT/CPM</p> <p>Chapter 16 – Simulation</p> <p>Chapter 5-7 (Hubbard)</p>	<p>Presentation/Problems</p> <ul style="list-style-type: none"> Review notes packets for chapter 16 in Anderson et al. and read chapter 4 in Hubbard before answering critical analysis questions (2) <p>Work on AIE Research Projects (2)</p> <p>Discussion</p> <ul style="list-style-type: none"> Take part in Week Three General Discussion (2) <p>Problem Set 3: Due by midnight Sunday night</p>
<p>4 11-7 to 11-13</p>	<p>Chapter 6 (Anderson et al.) – Time Series Analysis and Forecasting, Moving Averages, Exponential Smoothing, and Linear Regression Analysis</p> <p>Chapters 8-9 (Hubbard)</p>	<p>Presentation/Problems</p> <ul style="list-style-type: none"> Review notes packets for chapter 6 in Anderson et al. and read chapters 5 and 6 in Hubbard before answering critical analysis questions (2) <p>Work on AIE Research Projects (2)</p> <p>Discussion</p> <ul style="list-style-type: none"> Take part in Week Four General Discussion (2) <p>Problem Set 4: Due by midnight Sunday night</p> <p>Midterm Examination Due by Midnight Sunday Night (Chapters 1 to 6 in Anderson et al.)</p>
<p>5 11-14 to 11-20</p>	<p>Chapter 7 (Anderson et al.) – An Introduction to Linear Programming</p> <p>Chapter 8 (Anderson et al.) – Linear Programming: Sensitivity Analysis and Interpretation of a Solution</p> <p>Chapter 11 Hubbard</p>	<p>Presentation/Problems</p> <ul style="list-style-type: none"> Review notes packets for chapters 7 and 8 in Anderson et al. and read chapters 7 and 8 in Hubbard before answering critical analysis questions (2) <p>Discussion</p> <ul style="list-style-type: none"> Take part in Week Five General Discussion (2) <p>Work on AIE Research Projects (2)</p> <p>Problem Set 5: Due by midnight Sunday night</p>

<p>6 11-21 to 11-27</p>	<p>Chapter 10 (Anderson et al.) – Distribution and Network Models</p> <p>Chapter 14 (Anderson et al.) – Inventory Models</p>	<p>Presentation/Problems</p> <ul style="list-style-type: none"> Review notes packets for chapters 10 and 14 in Anderson et al. and read chapter 9 in Hubbard before answering critical analysis questions (2) <p>Work on AIE Research Projects (3)</p> <p>Discussion</p> <ul style="list-style-type: none"> Take part in Week Six General Discussion (1) <p>Problem Set 6: Due by midnight Sunday night</p>
<p>7 11-28 to 12-4</p>	<p>Chapter 13 (Anderson et al.) – Project Scheduling: PERT/CPM</p>	<p>Presentation/Problems</p> <ul style="list-style-type: none"> Review notes packets for chapter 13 in Anderson et al. and read “Business Process Analytics” by Gray and Leonard <p>Work on AIE Research Projects (5)</p> <p>Discussion</p> <ul style="list-style-type: none"> Take part in Week Seven General Discussion (1) <p>Submit AIE Research Projects by Midnight Sunday Night</p>
<p>8 12-5 to 12-9</p>	<p>Chapter 15 (Anderson et al.) – Waiting Line Models</p>	<p>Presentation/Problems</p> <ul style="list-style-type: none"> Review notes packet for chapter 15 in Anderson et al. <p>Discussion</p> <ul style="list-style-type: none"> Take part in Week Eight General Discussion (2) <p>Final Exam (Chapters 7, 8, 10, 13, 14, and 15) (4) Note: All assessments including the Final Exam must be completed by Friday at 5pm Central Standard Time (CST)</p>

Technical Help:

Students that have forgotten a username or password need to contact the Help Desk: 210-829-2721 or helpdesk@uiwx.edu. They are available 24/7/365 for this purpose. Other major issues will most likely have to wait until regular office hours.

Drop Policy for Online:

IMPORTANT “DROP COURSE” INFORMATION: It is the student's responsibility to drop their course within the 100% refund period to avoid assessment of tuition and fees. There will not be a university-initiated drop for non-participation. If you do not plan to attend, you must drop your courses by Friday at 5pm of the first week of the term to be within the 100% refund period. Please submit your drop to <http://online.uiw.edu/course-drop-form>. A \$50 administrative fee is applied for all drops from courses offered through the Virtual University.

ARMY Students must drop their course(s) through GoArmyEd. All active duty military students do not get charged a drop fee.

Participation, Punctuality and Attendance: Requirements and Expectations:

- Attendance: Abide by the UIW Attendance Policy as stated in the Catalog, page 92 (<http://www.uiw.edu/registrar/documents/uiw-ug-catalog-2013-2015--final-published-printed-version.pdf>).

- Participation in Virtual courses is expected three out of seven separate days.
- Participation in Hybrid courses is expected in class, and two out of seven separate days.
- Copies of homework, tests, exams, and e-mail communication: Save for your records.
- Assignments and Homework with due dates: Expected to be turned-in on time.

Academic Honesty Statement:

(<http://www.uiw.edu/registrar/documents/uiw-ug-catalog-2013-2015--final-published-printed-version.pdf>, page 99). University of the Incarnate Word is strongly committed to the nurturing of academic excellence. The University expects its students to pursue and maintain truth, honesty, and personal integrity in their academic work. Academic dishonesty, in any form, constitutes a serious threat to the freedoms, which define an academic community. The following definitions and guidelines have therefore been established to secure the maintenance of academic integrity at Incarnate Word. Forms of academic dishonesty include, but are not limited to:

- Cheating on tests, examinations, or other class or laboratory work.
- Plagiarism (appropriation of another's work and the unacknowledged incorporation of that work in one's own written work offered for credit).
- Counterfeit Work – including turning in as one's own, work which was created, researched, or produced by someone else.
- Falsification of Academic Records – knowingly and improperly changing grades on transcripts, grade sheets, electronic data sheets, class reports, projects, or other academically related documents.
- Unauthorized Reuse of Work – the turning in of the same work to more than one class without consent of the instructor involved constitutes academic dishonesty.
- Theft – unauthorized use or circulation of tests or answer sheets specifically prepared for a given course and as yet not used or publicly released by the instructor of a course, or theft of completed tests.
- Collusion – Involvement in Collusion -unauthorized collaboration with another to violate a provision of the Code of Academic Integrity.
- Facilitating Academic Dishonesty – intentionally or knowingly helping or attempting to help another to violate a provision of the Academic Integrity Policy of the University.

Class Syllabus Statement regarding Disability and Title IX

Disability Accommodations:

The University of the Incarnate Word is committed to providing a supportive, challenging, diverse and integrated environment for all students. In accordance with Section 504 of the Rehabilitation Act – Subpart E, Title III of the Americans with Disabilities Act (ADA), and Title III of the ADA Amendments Act of 2008 (ADAAA), the University ensures accessibility to its programs, services and activities for qualified students with documented disabilities. To qualify for services, the student must provide Student Disability Services with the appropriate documentation of his or her disability at the time services and/or accommodations are requested.

Pregnancy Accommodations:

Under the Department of Education's (DOE) regulations implementing Title IX of the Education Amendments of 1972, the University does not discriminate against any student on the basis of pregnancy or pregnancy related conditions.

To request reasonable accommodations for disability, temporary disability (e.g., injury, surgery) or pregnancy, please contact:

Student Disability Services
4301 Broadway CPO 286
Administration Building – Suite 105
San Antonio, TX 78209

(210) 829-3997
 (210) 829-6078
www.uiw.edu/sds

Title IX Information:

Unlawful discrimination has no place at the University of the Incarnate Word. It violates the University's core values, including its commitment to equal opportunity and inclusion, and will not be tolerated. The University of the Incarnate Word prohibits sexual misconduct, that can include: (1) sex and gender based discrimination; (2) sexual and sex and gender based harassment (including a hostile environment based on sex or gender); (3) sexual assault; (4) sexual exploitation; (5) stalking; and (6) relationship violence (including dating and domestic violence). For more information, or to report an incident, please visit www.uiw.edu/titleix.

Alternative Instructional Equivalency (AIE) Weekly Summary:

Week	Alternative Instructional Equivalent (AIE) for Activity	Estimated Hours
#1	Problem/solution work packet (2 hours) AIE Readings and Project (2 hours) General Discussion (2)	6 hours
#2	Problem/solution work packet (2 hours) AIE Readings and Project (2 hours) General Discussion (2)	6 hours
#3	Problem/solution work packet (2 hours) AIE Readings and Project (2 hours) General Discussion (2)	6 hours
#4	Problem/solution work packet (2 hours) AIE Readings and Project (2 hours) General Discussion (2)	6 hours
#5	Problem/solution work packet (2 hours) AIE Readings and Project (2 hours) General Discussion (2)	6 hours
#6	Problem/solution work packet (2 hours) AIE Readings and Project (2 hours) General Discussion (2)	6 hours
#7	Problem/solution work packet (2 hours) AIE Readings and Project (2 hours) General Discussion (2)	6 hours
#8	Problem/solution work packet (2 hours) AIE Readings and Project (2 hours) General Discussion (2)	6 hours
	Total	48 hours