Syllabus for
ACT 320 --Quantitative Analysis
3 Credit Hours
Fall 2010

I.   COURSE DESCRIPTION

A study of quantitative analysis interpretations of data for business decision-making; probability theory, linear programming, special-purpose algorithms, inventory models, PERT/CPM, forecasting, and other quantitative methods.
Prerequisites: MAT 232, ACT 215 and ACT 216.

II.   COURSE GOALS

A.   The purpose of this course is to enable the student to gain a basic understanding of the scientific approach to managerial decision-making (quantitative analysis) as well as the management of systems or processes that create goods and/or provide services (operations management). This approach involves the comprehension and use of mathematical models to solve business problems.

B.   In line with the purpose of this University, this course seeks to do the following:
1.   Contribute to the education of the whole person.
2.   Sharpen the communication, computation, and critical analysis skills of each student.
3.   Encourage the student in acquiring basic knowledge.

C.   In line with the purpose of the business administration program, this course is designed to prepare a student for an active role in the business world. Quantitative Analysis is part of a program to educate students who will be spiritually alive, intellectually alert, and physically disciplined to go into every man's world and be a positive influence on the business world.

D.   In line with the departmental objectives, this course seeks to prepare students in the following areas:
1.   Critical thinking (skills in reasoning, objectivity, analysis, interpretation, research, or decision making relevant to the discipline).
2.   Communication (abilities in areas such as written, oral, and nonverbal communication; group process; information technology and/or media production).
3.   Broad interpretation of the dynamics of business within the social and professional context.
4.   Internalization of Christian business ethics and professionalism.

III.   STUDENT LEARNING OUTCOMES FOR THIS COURSE

A.   Terminal Objectives
As a result of successfully completing this course, the student will be able to solve quantitative models and problems by utilizing the decision-making techniques taught in the course.

B.   Unit Objectives
As a result of successfully completing each unit, the student will be able to solve, differentiate, and analyze models as related to statistical analysis, financial analysis,

accounting analysis, IS applications, and management analysis using each of the following:
1. Probability Theory
2. Forecasting Models
3. Decision Theory
4. Inventory Control Models
5. Linear Programming
6. Transportation Models
7. Waiting Line Models
8. Project Management Models
9. Supply Chain Models
10. Quality Control Models

IV. TEXTBOOKS AND OTHER LEARNING RESOURCES

A. Required Textbook
Stevenson, William J., *Operations Management*, (**10th Ed**.). Boston: McGraw-Hill Irwin, 2009. ISBN: 978-0-07-337784-1

B. Required Materials
1. TI 83Plus (or better) Calculator
2. Internet Access, Web Browser, e-mail account
3. Spreadsheet software (preferably MS Excel)

C. Recommended Materials
1. Class notes available in the ORU Copy Center

V. POLICIES AND PROCEDURES

A. University Policies and Procedures
1. Attendance at each class or laboratory is mandatory at Oral Roberts University. Excessive absences can reduce a student's grade or deny credit for the course.
2. Students taking a late exam because of an unauthorized absence are charged a late exam fee.
3. Students and faculty at Oral Roberts University must adhere to all laws addressing the ethical use of others' materials, whether it is in the form of print, electronic, video, multimedia, or computer software. Plagiarism and other forms of cheating involve both lying and stealing and are violations of ORU's Honor Code: "I will not cheat or plagiarize; I will do my own academic work and will not inappropriately collaborate with other students on assignments." Plagiarism is usually defined as copying someone else's ideas, words, or sentence structure and submitting them as one's own. Other forms of academic dishonesty include (but are not limited to) the following:
   a. Submitting another's work as one's own or colluding with someone else and submitting that work as though it were his or hers;
   b. Failing to meet group assignment or project requirements while claiming to have done so;
   c. Failing to cite sources used in a paper;
   d. Creating results for experiments, observations, interviews, or projects that were not done;
   e. Receiving or giving unauthorized help on assignments.
   By submitting an assignment in any form, the student gives permission for the assignment to be checked for plagiarism, either by submitting the work for

electronic verification or by other means. Penalties for any of the above infractions may result in disciplinary action including failing the assignment or failing the course or expulsion from the University, as determined by department and University guidelines.

4. Final exams cannot be given before their scheduled times. Students need to check the final exam schedule before planning return flights or other events at the end of the semester.

5. Students are to be in compliance with University, school, and departmental policies regarding Whole Person Assessment requirements. Students should consult the WPA handbooks for requirements regarding general education and the students' majors.

    a. The penalty for not submitting electronically or for incorrectly submitting an artifact is a zero for that assignment.

    b. By submitting an assignment, the student gives permission for the assignment to be assessed electronically.

B. Course Policies and Procedures

    1. Evaluation Procedures

    Grading Procedures

    There are 600 points possible in the course as follows:

Exam 1	100 points
Exam 2	100 points
Exam 3	100 points
Exam 4	100 points
Minus Lowest of 4 exam grades	-100 points
Total Exam points	**300** points
Homework/Quizzes	**150** points
Final Exam	**150** points
Total Points possible	**600** points

    Grades are assigned on the basis of total points earned:

A = 90% * 600 points = 540 points
B = 80% * 600 points = 480 points
C = 70% * 600 points = 420 points
D = 60% * 600 points = 360 points
F = Below 60% * 600 points < 360 points

    2. Whole Person Assessment Requirements - None

    3. Attendance Policy

        a. Students with perfect attendance will receive ten (10) bonus points. These points are added to the total points earned at the end of the semester.

        b. Students with up to two (2) unexcused absences will not receive any bonus points nor will any points be taken away. For every unexcused absence after two (2), 5 points are deducted from the total points earned during the semester.

        c. Absences are excused at the discrepancy of the Professor and **only if** acceptable documentation is presented in writing.

        d. Athletes are excused to go to their respective events but must provide the Professor with a schedule of dates for which the athlete will be gone.

    4. Homework Problems

        a. Homework assignment due dates are announced upon the completion of the chapter.

      b.   Homework is considered late if not turned in during class on the due date. Twenty percent (20%) is deducted for late homework turned in by the day of the exam for those chapters. However, no homework is accepted after the exam over which those chapters are covered.

      c.   Partial credit is not given on homework assignments. It is important that the student understand how to do the problem. Therefore, the student can correct any problems which were **attempted** and missed and turn them back in by the specified due date for re-grading. This applies only for incorrect problems and not for incomplete or un-attempted problems. Late corrections are not accepted.

      d.   Homework problems must be worked out on paper for full credit. No credit is given if only the answer is turned in without any supporting formulas, graphs, etc.

      e.   Students are encouraged to help each other. However, copying of homework assignments is not allowed! **Identical homework assignments** will result in grades of **0** for all parties involved. This includes identical spreadsheets for Excel assignments. Persistent violators will be reported to the department Chair.

5.   Quiz

Pop quizzes and take-home quizzes are given at the discretion of the professor and may cover **any topic**. Pop quizzes may often be used to encourage students to arrive to class on time. Only students with academically excused absences may make up missed quizzes. Quiz points are added to the homework points.

6.   Extra Credit

Extra Credit assignments are given at the discretion of the professor and are strictly voluntary. Extra credit points are added to the homework points.

7.   Professional Development Points

Also voluntary, professional development points (PDP's) are added to the student's total points at the end of the semester.

8.   Attending Different Sections

The student may attend any of the three sections but is responsible for making sure they are counted on the role. The only exception is on exam days when the students must attend the section in which they are enrolled.

9.   Exams

      a.   You need to provide four (4) scantrons to the Professor.

      b.   Exams **must** be taken during the section for which you are enrolled. **No Exceptions**.

      c.   Makeup exams **do not** consist of multiple choice questions and must be taken when it is convenient for the professor.

      d.   The late exam fee is strictly enforced.

      e.   Only calculators are allowed during an exam. Laptops, cell phones, MP3 devices, PDA's or other handheld devices **cannot** be used during the exam. **Points are deducted from the exam if caught using any of these devices or your cell phone goes off for any reason.**

      f.   The lowest exam grade is dropped before the final grade is calculated.

      g.   The Final Exam is comprehensive and must be taken according to the ORU final exam schedule. The Final Exam cannot be dropped.

10.   Cellular Phones, Pagers, MP3 devices and other electronics

These devices **must be turned off** during class and **will not** be allowed during exams (see 8e above).

11.	Food and drink in the classroom
    a.	No food is to be consumed in classrooms during class.
    b.	Beverages are acceptable in lecture halls and classrooms as long as the student is quiet and no trash is left behind. However, if the class is held in the School of Business Computer Lab, no drinks will be allowed.

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VI. COURSE CALENDAR

Class	Chapter	Topic
1	1	Introduction to the course, Introduction to Operations Management
2-5	Class Notes	Statistics Review
6	-	Review for Statistics Review Exam
7	-	Statistics Review Exam
8		Review Exam
9, 10	3	Forecasting
11	5S*	Decision Theory
12	6S*	Linear Programming
13	-	Review for Exam 2
14	-	Exam 2 (Chapters 3, 5S, 6S)
15		Review Exam 2
16, 17	8S**	Transportation
18, 19	10	Quality Control
***	11	Supply Chain
20	-	Review for Exam 3
21	-	Exam 3 (Chapters 8S, 10, 11)
22	-	Review Exam 3
23, 24	12	Inventory Management
25	17	Project Management
26, 27	18	Waiting Lines

28   -   Review for Exam 4

29   -   Exam 4 (Chapters 12, 17, 18)

30   -   Review Exam 4, Review for Final

* Supplemental Chapter
** Chapter on the CD accompanying the Text
*** Instructions for this chapter will be given in class.

Course Inventory for ORU's Student Learning Outcomes

Quantitative Analysis ACT 320
Fall 2010

This course contributes to the ORU student learning outcomes as indicated below:
Significant Contribution – Addresses the outcome directly and includes targeted assessment.
Moderate Contribution – Address the outcome directly or indirectly and includes some assessment.
Minimal Contribution – Address the outcome indirectly and includes little or no assessment.
No Contribution – Does not address the outcome.
The student Learning glossary at http://ir.oru.edu/doc/glossary.pdf defines each outcome and each of the proficiencies/capacities.

	OUTCOMES and Proficiencies/Capacities	Significant Contribution	Moderate Contribution	Minimal Contribution	No Contribution
1	**Outcome #1 – SPIRITUALLY ALIVE**				
	Proficiencies/Capacities				
1A	Biblical knowledge			x	
1B	Sensitivity to the Holy Spirit			x	
1C	Evangelistic capability			x	
1D	Ethical behavior	x			
2	**Outcome #2 – INTELLECTUALLY ALERT**				
	Proficiencies/Capacities				
2A	Critical thinking	x			
2B	Analytical problem solving	x			
2C	Global and historical perspectives		x		
2D	Aesthetic appreciation				x
2E	Intellectual creativity	x			
2F	Information literacy	x			
3	**Outcome #3 – PHYSICALLY DISCIPLINED**				
	Proficiencies/Capacities				
3A	Healthy lifestyle				x
3B	Physically active lifestyle				x
3C	Properly balanced nutrition plan				x
4	**Outcome #4 –SOCIALLY ADEPT**				
	Proficiencies/Capacities				
4A	Communication skills		x		
4B	Interpersonal skills			x	
4C	Appreciation of cultural and linguistic differences				x
4D	Responsible citizenship			x	
4E	Leadership capacity		x		