



**IE 313 Industrial Operations Research II, *Three semester hours***  
**Spring 2013,**  
TR 9:30-10:45 A.M./AG/IT 211

**Instructor:**

E. Delbert Horton, Ph.D., P.E.  
Assistant Professor  
Department Industrial Engineering & Technology

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***“Appointment Recommended”***

**COURSE INFORMATION**

**COURSE TEXT**

OPERATIONS RESEARCH Applications and Algorithms, 4<sup>th</sup> edition, Wayne L. Winston, Duxbury Press, ISBN 0-534-38058-1 includes software package.

***COURSE REFERENCE TEXT/MATERIALS***

Operations Research, An Introduction, 8<sup>th</sup> Edition,  
Hamdy A. Taha, Prentice Hall, ISBN 0-13-188923-0.

Instructor will provide handouts and use selected-  
Websites as references

**COURSE REQUIREMENTS**

This course focuses on the application of deterministic numerical methods to the solution

of resource allocation, distribution, and some use of statistical inventory control analysis in the business and industrial environments. Some techniques covered are sensitivity analysis, linear programming, and both deterministic and statistical inventory control theory. Prerequisite: IE 312

## **ASSESSMENT OF STUDENT OUTCOMES**

Upon satisfactory completion of the course, the student as an operations research analyst will:

1. The student must achieve an applied understanding of sensitivity analysis and interpretation of the computer outputs.
2. The student must be able to understand how linear programming can be used to solve certain inventory problems.
3. The student must be able to set up inventory problems in which the demand over a given time period is uncertain, or random.
4. Be able to set up and solve( using Solver or LINDO or LINGO) Integer Programming problems
5. Be able to set up and solve linear programming problems using the network models.
6. Be able to set up and solve three special types of linear programming problems: transportation, assignment and transshipment.

## **COURSE REQUIREMENTS**

## **COURSE EVALUATION**

The final grade will be based on the following factors.

Examinations: Two examinations plus the final examination. Each of the three examinations will be given in class. If a student misses one of the first two examinations, then that missed examination will be assigned 85.0% of that student's Final Exam grade, regardless of the reason(s) for missing the examination. An examination grade equal to "0" because of a violation of the student expectation or academic dishonesty policy stated earlier counts as a missed examination, but the grade cannot be replaced. If a student misses the Final Exam, then that student will be assigned a final grade "F" for the course, regardless of the reason(s) for missing the Final Exam. Students are required to use 8.5"x11" sheets of green engineering paper handwritten front and back. Any graphical requirements will be done on the green engineering paper. Students will need a scientific calculator for each exam---unless the instructor states otherwise, it is the only computing or electronic storage device allowed during exams.

Class Participation: Students are expected to participate in class presentations and any problem sessions. Each student will be expected to prepare presentations of assigned topics and to solve problems related to topics of the course and turn these assignments in on time. Late submittals will be subject to a late grade penalty.

<u>Evaluation Factors:</u>	<u>Values</u>
Examinations:	50%
Final Examination (cumulative):	30%
Class Participation:	20%
Regular Assignment	5%
Reviewed Assignment	15%

Class Participation: The instructor will make regular class assignments during the daily class periods. It is expected that the student will do these assignments for the student's benefit. This Class Participation component of the course grade will be derived from the instructor's evaluation of reviewed assignments. These reviewed assignments will be assigned and evaluated by the instructor in the following manner and will account for 15% of the students course grade. The instructor selectively chooses these 4 or 5 assignments for scoring. (Check minus, Check, Check plus)

Students are expected to participate in class presentations and any problem sessions. Each student will be expected to present if called on by the instructor their understanding of assigned topics and/or solutions to assigned problem to the class. Non participation in these exercises will be counted against the student's Class Participation component of the course grade.

Grading Scale:

A = 90-100%  
 B = 80-89%  
 C = 70-79%  
 D = 60-69%  
 Fail < 60%

Note

All handouts including syllabi, exams, and topic presentation materials are copyrighted. The instructor will keep all exam questions and presentation materials. The student will be allowed to keep their examination submittals. If you desire to make a copy of your presentations, please make it before submitting the presentation materials.

<b>COURSE AND UNIVERSITY PROCEDURES/POLICIES</b>
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**CONDUCT IN CLASSROOM**

All students enrolled at the university shall follow the tenets of common decency and acceptable behavior conductive to a positive learning environment. Attendance will

be kept and evaluated as part of class participation. The no sounding of cell phones and using a cell phone or text messaging is prohibited in class. No tobacco products, food and drinks are allowed in the classroom. Each student will be expected to sign and turn in the TAMU-Commerce CoSEA Academic Honesty Policy.

### **STUDENT EXPECTATIONS:**

- Students are expected to attend all class periods. Students who do not attend class regularly may find this course to be more challenging than it should be. Students missing more than four class meetings will be assigned a final grade of "F" for the course and will not be allowed to attend any more class meetings, regardless of the reason(s) for the absences. Students are considered absent from a class meeting if they miss any portion of class time. Class time begins when the instructor arrives, but no earlier than the scheduled start of class time. Class time ends when the instructor dismisses class, but no later than the scheduled end of class time.
- Students are expected to make a legitimate attempt to pass the course, as judged by the instructor. Students who do not make a legitimate attempt to pass the course will be assigned a final grade of "F" for the course and will not be allowed to attend any more class meetings.
- No assignment will be excused. Late work will receive a deduction in score/grade. Students are expected to attend class and to participate in a manner to facilitate the educational process.

Any violations of the following student expectations, as judged by the instructor, will result in letter grade reductions to course work grades and/or to the final course grade of the offending student.

- Students are expected to have complete knowledge of and to be fully compliant with the Code of Student Conduct in the current Student Guidebook at <http://www.tamu-commerce.edu/studentlife/guidebook.htm>
- Students are expected to be fully prepared for each class before it meets.
- Students are expected to refrain from any disruptive behaviors during class. This includes (but is not limited to) not being in their seat at the scheduled start time of class; packing up and leaving class before it is dismissed by the instructor; talking or making other noises while the instructor is presenting material or a student is asking a question; sleeping; doing work for another course; reading newspapers, magazines, or other non-course materials; and using a computer at times and for purposes other than those designated by the instructor.
- Students are expected to have cell phones (NO TEXTING), music devices, and pagers turned off during class.

### **ACADEMIC DISHONESTY**

Efforts made by any student to achieve dishonestly will not be tolerated. Course work that students submit to the instructor is to be their own. Students may discuss course work and other course material with the instructor and/or fellow students (except during tests), but it is inappropriate to have another student do their course work or provide them with any portion of it. If the instructor determines a student has achieved dishonestly on course work, then that

student will be assigned a grade of "0" for that entire course work. If the instructor determines a student has committed a second act of academic dishonesty, then that student will be assigned a final grade of "F" for the course and will not be allowed to attend any more class meetings.

### **University Specific Procedures:**

#### *ADA Statement*

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

**Office of Student Disability Resources and Services  
Texas A&M University-Commerce  
Gee Library 132  
Phone (903) 886-5150 or (903) 886-5835  
Fax (903) 468-8148  
[StudentDisabilityServices@tamu-commerce.edu](mailto:StudentDisabilityServices@tamu-commerce.edu)  
[Student Disability Resources & Services](#)**

### **COURSE OUTLINE / CALENDAR**

#### COURSE OUTLINE AND SCHEDULE

TUESDAY	DATES	LECTURE: SUBJECT MATTER	
JAN	15	Chapter 5.1 / 5.2	Sensitivity Analysis
JAN	23	Chapter 5.3 / 7.1	Transportation Model
JAN	29	Chapter 7.1/7.5	Assignment Problems
FEB	5	Chapter 7.6	Transshipment Problems
FEB	12	Examination 1,	Chaps 5/Chapter 7
FEB	19	Chapter 8.1/8.2	Shortest Path Problems
FEB	26	Chapter 8.3/8.4	Maximum Flow/CPM
MAR	5	Chapter 8.4/8.5	CPM and PERT
MAR	12	SPRING BREAK	
MAR	19	Chapter 9.1/9.2	Minimum Cost/Integer
MAR	26	Chapter 9.2,	
APRIL	2	Examination 2,	Chapters 8, 9
APRIL	9	Chapter 15.1/15.2	
			Deterministic EOQ
APRIL	16	Chapter 15.3	Inventory Model
APRIL	23	Chapter 16.1,.2	

MAY	23	Chapter 16.3, .4 FINAL	Probabilistic Inventory
MAY	30	EXAMINATIONS	

**EXAMINATION SCHEDULE:**

Exam #1, February 12, 2013. Chapters 5 and 7.  
Exam #2, April 2, 2013, Chapters 8, and 9.

Final Exam, May 9, 2013, Comprehensive

**SYLLABUS CHANGES:** The instructor has made every effort to provide the students with an accurate syllabus. However, situations may arise during the semester resulting in changes in the information provided in this syllabus. If this occurs, the changes will be announced in class. If students miss a class, it is their responsibility to find out if any changes have been made.

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