



IE 313 Industrial Operations Research II, *Three semester hours*
Spring 2015,
TR 9:30-10:45 A.M./AG/IT 211

Instructor:

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“Appointment Recommended”

COURSE INFORMATION

COURSE TEXT

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

COURSE REFERENCE TEXT/MATERIALS

Operations Research, An Introduction, 8th 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 linear programming techniques. The models included in this course are Transportation, Assignment and Transshipment. The network models (Shortest Path; Maximum-Flow; Minimum-Cost; and CPM and Pert) are included. The course includes formulating integer programming problems. Prerequisites: 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 integer problems.
3. The student must be able to set up modeling inventory problems in which the demand over a given time period.
4. Be able to set up and solve 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 four-function calculator for each exam---unless the instructor states otherwise, it is the only computing electronic device and NO storage or other electronic devices are allowed during the exams. All cell phones will be silenced and placed at the front of the class room prior to taking the examinations.

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. The Class participation component of the course will be derived from the instruction's evaluation of these assignments and possible periodic quizzes. The reviewed assignments will be evaluated by the instructor in the following manner and will account for 10% of the student's course grade. The instructor selectively chooses 4 or 5 assignments for scoring of a regular assignment (Check minus, Check, Check plus). Check minus indicates the student needs to acquire a better understanding of the assignment subject matter. The other assignments will be given a cursory review---- (as Check minus or Check).by the instructor. Periodic quizzes maybe given during the class periods following instructor's presentation and after the student has had time to study these new concepts.

Each student will be expected to prepare these assignments, presentations of special topics and solutions of problems related to topics of the course and turn these assignments or presentations in on time. Late submittals will be subject to a late grade penalty., (Check minus) Further, late submittals will not be accepted if the student has already had more than two late submittals for the semester.

<u>Evaluation Factors:</u>	<u>Values</u>
Examinations:	50%
Final Examination (cumulative):	30%
Class Participation:	20%
Regular Assignment	5%
Reviewed Assignment	10%

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 the property of E. Delbert Horton, Ph.D., P.E. The instructor will keep all exam questions and presentation materials. The student will not be allowed to keep their examination submittals. If student desires to make a copy of their presentations, please make it before submitting the presentation materials.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

CONDUCT IN CLASSROOM

All students enrolled at the university shall follow the tenets of common decency and acceptable behavior conducive 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 CoSE 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 not to be using the computer terminal at their desk during the instructor's lecture except when the instructor has asked the class to use their desktop terminal for class participation. If the instructor has to ask a student for a second time during the semester to cease using their computer terminal the student final class grade will be reduced by one letter grade.

- 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 conducted dishonestly on course work, then that student will be assigned a grade of "0" for that 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
Student Disability Resources & Services**

COURSE OUTLINE / CALENDAR

<u>COURSE OUTLINE AND SCHEDULE</u>

TUESDAY	DATES	LECTURE: SUBJECT MATTER	
JAN	20	Chapter 5.1 / 5.2	Sensitivity Analysis
JAN	27	Chapter 5.3 / 7.1	Transportation Model
FEB	3	Chapter 7.1/7.5	Assignment Problems
FEB	10	Chapter 7.6	Transshipment Problems
FEB	17	Examination 1,	Chaps 5/Chapter 7
FEB	24	Chapter 8.1/8.2	Shortest Path Problems
MAR	3	Chapter 8.3/8.4	Maximum Flow/CPM
MAR	10	Chapter 8.4/8.5	CPM and PERT
MAR	17	SPRING BREAK	
MAR	24	Chapter 9.1/9.2	Minimum Cost/Integer
MAR	31	Chapter 9.2	
APRIL	7	Examination 2	Chapters 8, 9
APRIL	14	Chapter 11.1	Nonlinear programming
APRIL	21	Chapter 11.2	Nonlinear programming
APRIL	28	Chapter 11.3	Nonlinear programming
MAY	7	Chapter 11.4	Nonlinear programming
MAY	14	Final Exam	

EXAMINATION SCHEDULE (Estimated Schedule):

Exam #1, February 17, 2015, Chapters 5 and 7.

Exam #2, April 9, 2015, Chapters 8, and 9.

Final Exam, May 16, 2015, Comprehensive plus Chapter 11.

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.

E. Delbert Horton is the author of this syllabus, examinations and all lectures. Students are prohibited from selling (or being paid for taking) notes during this course to or by any person or commercial firm without the express written permission of the professor teaching this course.