

**Deterministic Operations Research  
IE 3800  
Spring 2018**

**Instructor**

Sandra D. Eksioglu, Ph.D.  
Associate Professor  
Department of Industrial Engineering

277C Freeman Hall  
(864) 656-5645  
[seksiog@clemson.edu](mailto:seksiog@clemson.edu)

**Class Hours**

T and TH 2:00pm-3:15pm, Hardin 100

**Official Course Description**

Introduction to operations research models, including linear programming, integer linear programming, transportation and assignment problems, and network flows.

**Official Course Prerequisite**

MATH 1060 or MATH 1070 with a C or better.

**Required Textbook (available at CU Bookstore)**

“Operations Research – Applications and Algorithms,” by Wayne L. Winston, 4<sup>th</sup> edition, Brooks/Cole, 2004.

**Office Hours**

Wed. 4:00-5:00pm  
Fr. 10:00am-12:00pm

**TA**

Nitin Srinath ([nsrinat@g.clemson.edu](mailto:nsrinat@g.clemson.edu)). Office Hours and location TBD.

**Course Topical Outline**

- Introduction
- Review of Linear Algebra
- Formulating linear programs
- Graphical solution and the Simplex method
- Duality theory
- Sensitivity analysis
- Integer programming
- Applications of linear programming (e.g., inventory replenishment, network flow models, assignment problem, etc.)

**Course Learning Objectives:**

This course introduces deterministic mathematical models and optimization procedures for solving them. It emphasizes modeling linear optimization systems, fundamental optimization algorithms, and the role of these algorithms in solving real-world problems.

**Grading**

Your opportunities to earn points in this course are as follows:

- Quizzes 60%
- Homework 20%
- Final exam 20%

**Quizzes:** All quizzes are closed-book and closed-notes. You are allowed to bring a formula sheet and a calculator only. The formula sheet is a standard (8.5” by 11”) printer paper on which you can write (not type) anything. **No make-up quiz** will be given regardless of what the excuse is. There will be a quiz every week on **Thursday**. I expect to give about ten quizzes of which the **best eight** will contribute to your average. No cellphone use during the quiz.

**Final Exam:** is scheduled for Thursday, May 2<sup>nd</sup>, 8-10:30am.

**Assignments:** Take-home assignments will be given about every other week. I expect to give about five assignments. **Four of your best assignments** will contribute to your average. Assignments can be done in **groups of at most two**. They should be **typed** and submitted online via the course website. Late assignments will not be accepted.

*Letter grades will be determined as follows:*

A: [90-100]    B: [80-90)    C: [70-80)    F: Below 70.

Grades will be posted on the course web site and updated periodically. It is your responsibility to verify that your grades have been correctly entered. You have **one week** after an exam is returned to discuss changes in your grade. Note that grade changes may result in either an increase or a decrease.

### **Email**

You are responsible for all e-mail messages sent by the instructor. Public messages intended for the entire class are sent automatically to campus accounts. If the student elects to forward campus mail to an off-campus account, the student remains responsible for these messages regardless of whether or not they are successfully delivered.

### **Attendance**

Attendance at lectures is not mandatory, but is expected. If you are going to attend class, be on time, as lectures will start promptly at the scheduled time. However, each student is responsible for all information distributed and/or presented during lecture periods.

Students are authorized to leave if the instructor or his assistant is more than 10 minutes late for a lecture. However, every possible effort will be made to inform you for any classes that are canceled due to an unscheduled conflict or emergency. Always check your e-mail!

### **Academic Integrity**

“As members of the Clemson University community, we have inherited Thomas Green Clemson’s vision of this institution as a ‘high seminary of learning.’ Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form. In instances where academic standards may have been compromised, Clemson University has a responsibility to respond appropriately to charges of violations of academic integrity.”

The university’s graduate academic integrity policy can be found at the following URL: <http://gradspace.editme.com/academicgrievancepolicyandprocedures#integritypolicy>

Students may not submit any work that has been turned in for credit for a previous course.

**Disability Access Statement from the Office of Student Disability Services**

“It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities. Students are encouraged to contact Student Disability Services to discuss their individual needs for accommodation.”

**Clemson University Title IX (Sexual Harassment) Statement**

Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veteran’s status, genetic information or protected activity in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. This policy is located at <http://www.clemson.edu/campus-life/campus-services/access/title-ix/>. Ms. Alesia Smith is the Clemson University Title IX Coordinator, and the Executive Director of Equity Compliance. Her office is located at 110 Holtzendorff Hall, 864.656.3181 (voice) or 864.656.0899 (TDD).

**Emergencies**

Emergency procedures have been posted in all buildings. Students are reminded to review these procedures for their own safety.