



**Instructor:** Choong Y. Lee  
**Office:** 110 F Kelce  
**Hours:** by appointment through Canvas or email  
**Phone:** (620) 235-4587 (office)  
**E-mail:** cylee@pittstate.edu

**Textbook**

- (1) Anderson, Sweeny, and Williams, *An Introduction to Management Science*, 15th ed.; Cengage, 2016 (ISBN: 978-1-337-40652-9).
- (2) Packet of PowerPoint Slides as Learning Module (This is available from the CANVAS.)

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**Catalog Course Description**

Quantitative and analytical approaches to management problems.

**Prerequisites**

“C” in MATH 143 - Elementary Statistics, MGT 320 Basic Quantitative Business Methods, and junior standing.

**Course Objectives / Learning Outcomes**

The purpose of this course is to extend the problem solving and analytical techniques you have developed in earlier quantitative courses. The objective is to learn to use the basic tools of operations research as applied to business/economic problems. Quantitative modeling of the real world and the tools and techniques of finding optimal solutions will be discussed. Topics include modeling and decision-making, linear programming, transportation problems, assignment problems, network analysis, Integer Linear Programming.

**Course Outline**

Module (Week)	Chapter	Topic
Module 1 (1st week)	1	Introduction
Module 2 (2nd week)	4	Linear Programming (LP): Formulation (1)
Module 3 (3rd week)	4	Linear Programming (LP): Formulation (2)
Module 4 (4th week)	2	Review of Linear Algebra for Graphical Solution
Module 5 (5th week)	2	LP: Graphical Solution (1)
Module 6 (6th week)	2	LP: Graphical Solution (2)
Module 7 (7th week)	3	LP: Computer Solution (1) – Basic



Module 8 (8th week)	3 & 18	LP: Computer Solution (2) - Duality
Module 9 (9th week)	3 & 18	LP: Computer Solution (3) - Duality
Module 10 (10th week)	6	Distribution System Models (1)
Module 11 (11th week)	6	Distribution System Models (2)
Module 12 (12th week)	6	Distribution System Models (3)
Module 13 (13th week)	7	Integer Programming Models (1)
Module 14 (14th week)	7	Integer Programming Models (2)
Module 15 (15th week)	6 & 9	Network Models

The above schedule is only **a guide**. **The instructor reserves the right to make any necessary changes as the semester progresses.**

### Teaching Methods

In addition to the textbook, every week there will be given a set of PowerPoint slides through Canvas as the weekly lecture note, called the weekly module, to help each student understand the assigned subjects. The students are required to read the associated chapter of the textbook as well as the supplement lecture note assigned and try homework assignments by himself or herself individually and independently. This course requires usage of the LINDO software package accessible on the PC on campus or available free from its website, [www.lindo.com](http://www.lindo.com) Students may download the PC version of “Classic Lindo” from the website (**No Mac version is available**). Students are encouraged to plan their activities to ensure that computer practices/assignments can be completed in a timely manner.

### Course Participation

Students are strongly urged to make their best attempts to actively engage themselves in learning. Online courses require your **voluntary devotion**: It’s a **learning-by-doing** model. If you don’t actively engage in the online course, you will not learn anything. Usually, there is a direct correlation between class participation and performance on exams. When you are not diligently involved in all activities even online, you and you alone are responsible for any announcements and lectures given during the entire period of the course. The class participation with your voluntary devotion is critical especially in the event the student is on the borderline between two grades when the final letter grade for each student is determined.

### Course Communication Policy

Although all communication will take place online via email, Canvas Inbox, or in the Canvas course discussion boards, **Canvas Inbox** or **email** may be more effective since the instructor usually checks them more frequently. Expect to receive a reply to your question(s) within 48 hours in most cases, Monday through Friday, unless otherwise posted by the instructor. Please do not call the instructor's office phone as he won't be there reliably during the span of the course in this semester.



### **Course Communication Guidelines (Netiquette)**

Netiquette is a set of rules for behaving properly online. Much of our communication in this course will take place in the forums and through email. Here are the requirements for online communication in this course, behavior and communication that do not meet these guidelines will not be tolerated.

- Be sensitive to different cultural and linguistic backgrounds, as well as different political and religious beliefs.
- Use good taste when composing your responses. Swearing and profanity should be avoided. Also consider that slang terms can be misunderstood or misinterpreted.
- Don't use all capital letters when composing your responses. This is considered "shouting" on the Internet and is regarded as impolite or aggressive. It can also be stressful on the eye when trying to read your message.
- Be respectful of others' views and opinions. Avoid "flaming" (publicly attacking or insulting) others.
- Be careful when using acronyms. If you use an acronym, it is best to spell out its meaning first, then put the acronym in parentheses afterward, for example: Frequently Asked Questions (FAQs). After that you can use the acronym freely throughout your message.
- Use good grammar and spelling and avoid using text messaging shortcuts.
- In emails, always identify yourself and what class and section you are in. It is a good practice to put your course and section in the subject line. This helps your instructor identify course related emails.

In addition, specifically, there are rules needed to maintain high quality class in professional manners. Please use the following rules of netiquette as you post to online discussions and send messages to your instructor and fellow students in the course:

1. Use **professional language**. Always say please and thank you and leave text messaging abbreviations out of messages and posts. Be positive and constructive in your feedback to replies to students.
2. **Try not to use all caps**--it comes across as shouting to the reader. Use "**bold**" formatting or use quotes to emphasize a word or phrase. It may be okay at times for headings or to place emphasis on a web page but try to avoid it when communicating on discussion boards or corresponding with others electronically.



3. User **proper language and titles**--no slang or profanity. Even if a word is one you consider to be "not so bad", it could be offensive to others.
4. **Review posts and messages before saving.** Check for grammar and spelling errors and restate your message when necessary.
5. **Ask for clarification.** If you do not understand an assignment or feedback from me, please ask for clarification. I will do my best to word my posts/messages as clearly as possible, but in an online environment, I cannot "see" if my messages are being understood.

**\*\*\* If proper Netiquette is not followed, you may lose points on your performance.**

### **Computer/Technology Requirements**

Online students will need regular access to a personal computer that runs on a broadband Internet connection. Also, in case, they may need to have a webcam if a camera is not included in their computer or smart device. More specifically, each student needs:

1. **High-speed internet access** is required. Make sure to have a back-up plan if your primary access is not available.
2. **A computer** to access Canvas and complete assignments. Mobile devices are not normally recommended for submitting assignments and taking Canvas quizzes and exam. See the Canvas Privacy Policy and Canvas Accessibility Statement.
3. A current version of an **Internet Browser**, preferably Google Chrome or Mozilla Firefox. See the Canvas Guides for the latest browser and plug-in requirements.

### **Academic Integrity**

All Pitt State students are bound by the academic integrity policies of the university as described and outlined in the current Syllabus Supplement. Please familiarize yourself with these rules and guidelines. In addition, as a course offered through the Kelce College of Business, students in this class are obligated to adhere to the college's Student Code of Ethics as outlined below.

Students shall:

- Refrain from class disturbances.
- Arrive on time and remain until dismissed at all class sessions and to notify instructors in advance of anticipated absences, late arrivals, or early departures whenever possible.
- Turn off cell phones or other electronic devices while in class, unless permission to use them has been granted.



- Prepare for and participate in all classes.
- Treat fellow students, staff, faculty, and administrators with respect.
- Prepare assignments and exams honestly.
- Avoid plagiarism or unacknowledged appropriation of another's work in any academic work.
- Refrain from giving or receiving inappropriate assistance.
- Dress appropriately, avoiding clothing that is revealing, provocative, or includes offensive language or visuals. Dress as a professional when appropriate at ceremonies and interviews.
- Respect University property and use resources in the most effective and efficient manner.
- Be fair and constructive in the evaluation of faculty.
- Obey the policies, regulations, and laws of the United States of America, The State of Kansas, The Kansas Board of Regents, Pittsburg State University, and the Gladys A. Kelce College of Business.

The instructor will administer a **course grade of "F"** to any student who chooses to partake in dishonest conduct with regards to **any** exam, quiz, or assignment.

### **Students with Disabilities**

Please inform the instructor if you have a learning or physical disability that interferes with course requirements. Assistance and/or appropriate accommodations may be available through the contacts listed on the current Syllabus Supplement.

Students seeking assistance with academic programs because of a *physical* disability (such as visual or hearing problems, mobility issues, etc.) should contact Cindy Johnson, Director, Equal Opportunity/ Affirmative Action in the Equal Opportunity Office, 218 Russ Hall (235-4185) to request accommodation. Students seeking assistance with academic programs because of *learning, mental, or emotional disabilities* should see Tami Hennigh, Coordinator, Center for Student Accommodations, 218 Russ Hall (235-6584). If a student has both physical and mental disabilities, the student may see either Cindy Johnson or Tami Hennigh and they will work together on providing accommodations. Please inform the instructor if you have a disability that the instructor should know about.

### **Course Evaluation Methods**

Problems: A student can most easily learn the material and test his/her understanding by working problems. Accordingly, problems will be assigned basically **for self-study**, but still should be collected for grading. In other words, although many exercise problems basically from the textbook will be assigned as suggested problems for your learning through practicing problems by yourself, they should be **required** homework problems to be **collected for grading**. **Late submission**



**of those designated homework problems will not be accepted for credit.**  
Sample examples will be provided in the modules.

Exams: **Three exams**, including a comprehensive final, will be scheduled. All will be **problem solving**. It means that there will be **no** multiple choices **nor** true/false questions in your exams. Each exam, which is typically a 2-hour exam, will be given in a 5-hour window on the following days:

**Exam 1: February 27, Monday, 5:00 – 10:00 pm**

**Exam 2: April 10, Monday, 5:00 – 10:00 pm**

**Final Exam: May 8, Monday, 5:00 – 10:00 pm**

You could start your exam any time during the **5-hour window**, 5:00 – 10:00 pm on the exam day, but must finish it within **two (2) hours** (120 minutes) each time. It means that you must start your exam **no later than 8:00 pm** each time to finish it by 10:00 pm on the exam day.

Grading: The letter grade you earn in this course is determined by the total points you earn on quizzes, homework, and exams. The distribution of points is provided below:

<u>Items</u>	<u>Points</u>
Exam 1	100
Exam 2	100
Final Exam	150
Homework Assignments	250
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Total	600

The final letter grade in this course will be determined by the total points you earn through the semester. The **basic** guideline is as follows:

90% or above of the <b><u>highest</u></b> ( <b><u>not</u></b> the possible point):	A
80% or above “ :	B
70% or above “ :	C
60% or above “ :	D
below 60% “ :	F

Using the above **modified** curve (not traditional straight curve), more students could get a **better or higher** letter grade for the course.



More additional adjustments could be made to encourage students to work hard. For example, **lowering** the above cutoff points could give more **favorable** final letter grades to all hard-working students.

### **How to Take Exams (how to start and upload exam/test files)**

Due to the nature of all exams in this course, which is a quantitative course, all exam questions will be problem-solving without multiple choices nor true/false questions. Under the current teaching/learning resources we have, the best way to have exams and tests in this class is to send exams in a MS-Word or PDF document to each student through Canvas. When a student clicks on the exam in Canvas and starts it, a link to the exam will be shown. Students can download the test file and file out the pdf on the computer, but we recommend printing out the test and filling out the test with a pencil. Before the test timer runs down, submit your test through the file upload on the exam. The best way to do this is to either take pictures of your exam with a smart phone or similar devices and copy them into a Word or PDF document or scan all of them back to the computer and submit that combined file back to the instructor through Canvas or email. If any technical issues happen, you can always email your test to Dr. Lee at [cylee@pittstate.edu](mailto:cylee@pittstate.edu).

### **Other Policies**

You are invited to ask questions about any topic we have in the class and/or make comments for making a better class to which the particular session of the class is devoted or about other related subjects.

When you have a question about the operation of the course, need extra help on a topic, or simply would like to discuss a topic further, you are invited to talk to me any time you feel comfortable. It is my pleasure to help you learn from the class when you need and want such help.

### **Note**

**The instructor reserves the right to amend and to reorganize this syllabus at any time,** especially when we are asked or required to adjust class settings or other related items to unexpected interruptions or changes due to the pandemic or a similar situation during the semester.