

Instructor:	Geza Bottlik, E-mail: bottlik@usc.edu
Office Hours:	Mon/Tue/Wed/Thu, 3:30 P.M. – 4:45 P.M, Room GER 202 or by appointment
Phone	213 740 – 5050
TA:	TBD
TA Office Hours:	TBD
Class time/place:	Tuesdays and Thursdays 2:00 P.M. – 3:20 P.M., Room THH210

Web Page: [http:// www.gezabottlik.com](http://www.gezabottlik.com) - Lecture notes, assignments, solutions and grades.
<https://blackboard.usc.edu> - for uploading assignments

Prerequisites:

ISE 330. You must have this prerequisite to enroll in this class. You will be expected to apply methods from this course.

Test Schedule:

Midterm 1:	Thursday, February 15, 2018	2:00 P.M. – 3:20 P.M.
Midterm 2:	Thursday, March 22, 2018	2:00 P.M. – 3:20 P.M.
Final:	Thursday, May 3, 2018	2:00 P.M. – 4:00 P.M.

The midterms and final will be based on problems homework, quizzes and the discussions in class. **All tests and quizzes are open book and open notes and laptops.** Students are expected to **apply** what they should have learned up to that point to analyzing situations, identifying the problems and applying the appropriate techniques to solve them or interpreting computer solutions.

Assignments:

Readings, problems and software exercises will be included in each week's assignment. These are assigned on Tuesday and are due on the following **Wednesday at midnight on the assignment manager on Blackboard.** The assignment manager assigns a file name. The grader will return the assignments electronically only if there are any points taken off. Reading assignments are due when the material will be covered in class. It is imperative that you **prepare for class** -- you will find it extremely difficult to follow the discussion if you have not read the material.

I will **not accept** late homework, unless **prior** arrangements have been made (e.g. out of town funeral). Homework is to be a **digital Word (or Excel) 97 or later printable file.** Do not type results into spreadsheets – use formulas. If it is a team assignment, the team members' names, assignment number, the date and any other team that you worked with must be in the **header.** Use a consistent template and format the output for a professional appearance. The assignment manager assigns the file name – use very short names like 410-1. A sample will be available on the web site. **There can only be one file per homework. (no zip files!).**

The assignments should be as professional in appearance as if you were preparing reports at work or for publication. Clearly label the problem number and your conclusions for each problem, followed by the supporting calculations. **The problems must be in the order assigned. Out of sequence problems will receive no credit.**

Assignments will be either individual or team. If two teams discuss or collaborate on a homework, they must indicate that on their assignments. Each team must turn in a separate homework. Generated data and essay questions must be unique to each team. Team assignments should have all team members' names on them, but only if they worked on it.

It's OK to work on individual homework together, but finish it by yourself and indicate whom you worked with. For individual homework each student must turn in a separate homework. Do not give your files to others, and do not use others' files. Do not copy solutions from people you have worked with or from anyone else. Generated data and essay questions must be unique to each student. If you use solutions from prior semesters, indicate that. **If the answer is given in a book, don't just copy it, explain how you got it**

Objectives and Content

This course covers planning and scheduling systems. While the emphasis is on implementing effective production planning and scheduling systems, the material is equally applicable to service systems. While a prior knowledge of operations research, probability and statistics, and engineering economy is assumed, each of these will be reviewed briefly as the need arises. The focus is on mathematical models for solving problems arising in planning and scheduling.

It is up to you to become familiar with and learn the mechanics of the material in the text. I am here to explain things you don't understand, to add things that are not in the book, and to evaluate whether you can apply the material to real problems.

The lecture and class discussions are a supplement to what is contained in the book. It is NOT intended to be a duplication of what is contained in the book.

I am looking forward to an intellectually stimulating and rewarding semester with you.

Grading:

Homework	~16%	16.5 points	1.5 pts each (- 0.5 if not submitted)
Midterm Exam 1	~19%	18.5 points	
Midterm Exam 2	~15%	15 points	
Final Exam	~29%	29 points	
Participation (Attendance on non quiz days, <u>discussion</u> , <u>preparedness for class</u>)	~ 7%	7.5 points	0.3 pt. each, drop 2 lowest
Quizzes	~14%	13.5 points	1.5 pt. each, drop 1 lowest

The grade for the course will only be based on the required work listed above and cannot be improved with additional work. Note that the usual average difference between adjacent grades is less than 0.5%.

Quizzes:

We will have about 9 quizzes during the semester. These are short, usually with one or two problems or about 10 True and False or fill in the blank. **We will start on 1/25**. The lowest grade will be dropped. There are no make up quizzes.

Required Text:

Manufacturing Planning and Control – Jacobs, Berry, Whybark and Vollman, McGraw-Hill 2011, ISBN 978-0-07-337782-7

Approximate Course Outline:

Session	Date	Material	Homework No. due in week on Tue	Quiz
01	01/09	Introduction and Organization		
02	01/11	Inventory, Cost Components, Chapter 11		
03	01/16	Inventory, Economic order quantity	No. 1	
04	01/18	Inventory, Order points	No. 2	
05	01/23	Inventory, Safety stock		
06	01/25	Inventory, Lot sizing	No. 3	QU1
07	01/30	Forecasting, Chapter 3		
08	02/01	Forecasting, Regression	No. 4	QU2
09	02/06	Forecasting, Smoothing		
10	02/08	Forecasting, Seasonality	No. 5	QU3
11	02/13	Review		
12	02/15	Midterm 1		

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13	02/20	Review Midterm		
14	02/22	Enterprise Resource Planning (ERP) Chapters 4 thru 6		
15	02/27	ERP - Sales and operations		
16	03/01	ERP - materials	No. 6	QU5
17	03/06	Review ERP - Capacity		
18	03/08	Scheduling Chapter 8	No. 7	QU6
19	03/20	Review		
20	03/22	Midterm 2		
21	03/27	Review midterm 2		
22	03/29	Scheduling, Performance and Gantt charts	No. 8	
23	04/03	Scheduling, Single machine		
24	04/05	Scheduling, Flow shops, job shops	No. 9	QU7
25	04/10	Scheduling, Heuristics		
26	04/12	Scheduling, Simulations, Advanced Production Systems	No. 10	QU8
27	04/17	Integrated Production Planning, Chapter 9		
28	04/19	Just-in Time, Lean, Kan-ban, Theory of Constraints	No. 11	QU9
29	04/24	Just-in Time, Lean, Kan-ban, Theory of Constraints		
30	04/26	Review	No. 12	
	05/03	Final 2:00 P.M. – 4:00 P.M.		

ALWAYS BE SURE TO GIVE THE SOURCE OF ALL YOUR INFORMATION. ANYTHING TAKEN VERBATIM FROM SOMEONE ELSE MUST BE IN QUOTATION MARKS AND REFERENCED. THIS INCLUDES PARTIAL SENTENCES.

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This is intended to be an interactive class and your participation should increase as the semester progresses. Attendance at **all** classes for the **whole** class is expected of everyone. Frequent absences will result in a reduction in grade. Punctuality is expected. If you are late, be sure not to disturb the class as you enter.

PLEASE DO NOT BRING FOOD OR DRINKS TO THE CLASS. BEVERAGES IN PLASTIC CONTAINERS ARE OK. NEATNESS, SPELLING, AND GRAMMAR COUNT. THEY ARE AN EXPRESSION OF YOUR COMMITMENT TO DO A GOOD JOB. USE THE TOOLS IN WORD AND EXCEL!

The use of phones, Ipad, laptop or similar devices in class is discouraged.

Last, but most important:

Academic Conduct

Plagiarism - presenting someone else's ideas as your own, either verbatim or recast in your own words is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the Office of Equity and Diversity <http://equity.usc.edu> or to the Department of Public Safety <http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us>. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. The Center for Women and Men <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage <http://sarc.usc.edu> describes reporting options and other resources.

Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the American Language Institute <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. The Office of Disability Services and Programs http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, USC Emergency Information <http://emergency.usc.edu> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.