WKU©

School of Engineering and Applied Sciences
AMS 356 System Design and Operations
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## On-Demand Course Syllabus

Office Hours
By appointment

Catalog Description
A study of manufacturing organizations and their administration, facilities layout, work systems, forecasting and decision making. Applications of resource planning determining product demand, controlling inventory, goods and services.
 Prerequisite(s): AMS 271

Required Textbooks
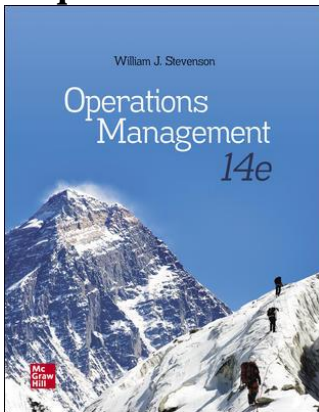
Stevenson, W. J. (2021). *Operations Management (14 edition)*. New York: McGraw-Hill/Irwin. ISBN 978-1-260-23889-1

Course Objectives
By the end of the course, the student will be able to:
- Make forecasts and plan for productivity, capacity, and a balanced system in relation to facilities, equipment, and long-term planning.
- Set up production rates based upon product demand and standard data systems.
- Use the center of gravity method to optimize the location of a facility.
- Identify the benefits and practice of JIT and lean and their fit with systems design and operations.

- Compute EOQs, EPQs, quantity discounts, FOIs, SPMs, and ROPs for a variety of operation scenarios.
- Compute a trial and error overview of an aggregate plan and disaggregate the plan into a master schedule.
- Compute an MRP plan for a given production scenario.
- Compute operations scheduling requirements regarding both loading and sequencing for a low volume system.

Course Topics

This is an introductory course to systems design and operation. The course will increase your knowledge of business strategy, competiveness, productivity, forecasting methods, design of products and services, capacity planning, selection of processes, process layouts, and work design. Topics include simple linear regression, the Kano model, market feasibility studies, cost-volume analysis, break-even analysis, product line balancing, and job analysis. Also included are location planning and analysis, just-in-time production, lean operations, and inventory management. Other topics include aggregate planning and disaggregation, material requirements planning, and scheduling.

Course Structure and Design

The course will consist of readings from the assigned text and other supplemental materials, chapter quizzes, assignments, and assessments.

Homework Assignments, Journal Essays, and Video Reports Various activity assignments, essays, and reports homework are assigned over the duration of the course. These assignments are designed to help you keep up with the readings and give you material that is helpful for the quizzes and the exams.

Quizzes. Quizzes will be given on the content of the assigned readings and provided material. Quizzes will cover the previously assigned content for each unit.

Examinations. There are three exams that cover the content material of the course. They must be taken in a proctored setting.

Grading

The grading for the course is as follows:

Homework Assignments	20%
Video Reports	5%
Journal Essays	5%
Exams	40%
Quizzes	30%
Total	**100%**

Twenty percent of the grade is based on activity assignments. Forty percent of the grade is based upon the exams. Thirty percent is based on the quizzes and ten percent on the

essays and video reports. Grades are earned based on the General Grading Info and Criteria (see the Grading and Assignment Info section of the course).

This course uses a web-based delivery method. The course will consist of reading assignments, activity assignments, essays, and quizzes. You are expected to spend the appropriate amount of time preparing for the assessments
.
You will know in advance the standards for each assignment. You are responsible for:
- Asking for help or clarification when needed
- Completing all course deliverables
- Committing to a high level of professional development and learning

The grade for this course is based upon performance to a standard. Students are expected to put forth effort congruent with the highest standard. The grade is based upon your performance to a standard. The earned final grade is based on Overall Grading Criteria listed above. The final grade is per my discretion.

You are ultimately responsible for your learning. Those who take responsibility for their learning are generally more successful in the course. Successful students are active learners who read the text, complete the assigned work, ask questions as needed, and participate fully in the course.

Grading Criteria
There are five grade levels possible:

Mastery, A+, A, 100% – ≥ 90%
Demonstrates superior work performance and mastery of the subject content. The work/performance is commendable and demonstrates exceptional thinking and/or performance. The work or research exceeds expected requirements with substantial depth and efficiency. The work is highly organized, formatted correctly, and communicates effectively.

Competency, B+, B, <90% – ≥ 80%
Demonstrates a clear understanding of the subject content with no flaws. The work or research accomplishes the purpose of the task and identifies the most important ideas. The work is over and beyond the minimum requirements with depth. The work is organized, formatted correctly, and communicates effectively.

Minimal Competency, C+, C, < 80% – ≥ 70%
Performance at minimum standard. Work displays some understanding of major concepts. Main points of content are covered and required elements included, but the work lacks competent professionalism.

Deficient, D, < 70% – ≥ 60%
Shows an incomplete understanding of the task/project. The purpose of the task or research was not accomplished. The work/performance is ineffectual or

inappropriate. One or more important elements are omitted. The work is vague, incomplete, and incorrectly formatted. The presentation is so flawed that it obscures the meaning.

Unacceptable; Standard not yet met, F, $< 60\% - 0\%$
Significantly incomplete and/or deficient. Significant parts omitted or plagiarized. Work shows no understanding of the subject content. Important purpose of the task or research was not achieved. Work did not meet the minimum requirements. Work suggests incompetence.

Course Policies General
General communication and expectations. Students should work independently on assignments unless the instructor gives prior permission for collaboration. Students will communicate with the instructor using the learning management system Blackboard or other communication media such as e-mail, voicemail, or Skype. Access to a late-model computer with standard business software and an Internet connection is required.

This is a paperless course. This course and all associated communication within or as part of should adhere to the WKU Information Technology Acceptable Use Policy. All assignments and related documents will be submitted on-line via Blackboard. Students must make prior arrangements before submitting hard copy reports or papers. If you have problems transmitting information, telephone or e-mail immediately, and we'll get the problem solved.

Ground rules for communication
1. Use e-mail for private or personal messages to the instructor and questions regarding grades.
2. Please submit papers as text/word files (e.g., DOC, RTF, TXT, HTML, or PDF), PowerPoint files (e.g., PPT), or spreadsheet files (e.g., .XLS, WKS) uploaded to the Blackboard. Use other file formats at your own risk. If I can't read them, I can't grade them!
3. For **all** assignments that are uploaded to Blackboard, include your name at the top of the document AND as part of the **file name** (e.g., Doggett_Homework.doc). With NetID, your name is no longer associated with documents uploaded to Blackboard. Thus, when I download your file, I am no longer able see your name associated with the file. If you do not put your name at the top of the document, then go back to BB to locate it. This is time-consuming. It is much easier for you to simply put your name on the document and as part of the file name.

Important: Blackboard has a difficult time processing file sizes over 10 MB. If your file does not upload correctly, you may need to change to a different file format that uses less memory!

Instructor availability. My availability during the week is from 8:00 AM to 5:00 PM CT M-F with limited availability on the weekends. Students may reasonably expect a response from me within 24 hours during the week, but not necessarily on the weekends.

Extra Credit. There is no extra credit work available. Additional work beyond what is assigned will not be considered.

Academic Honesty. All Western Kentucky University policies are in effect. All work must reflect APA citation standards. All your work must be your own, unless I authorize collaboration. Presenting the words, ideas, or expressions of another person in any form and claiming them as one's own is plagiarism and will not be tolerated. The claim of ignorance is no excuse. (See academic offenses in the WKU student handbook.) The University Catalog states, "Students who commit any act of academic dishonesty may receive from the instructor a failing grade in that portion of the coursework in which the act is detected or a failing grade in the course without possibility of withdrawal."

Student Accessibility Resource Center. In compliance with university policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Student Accessibility Resource Center at Downing Student Union, 1074. The phone number is 270.745.5004. Please do not request accommodations directly from the instructor without a letter of accommodation. This course is complaint with the WKU standards for web accessibility.

Title IX statement. Western Kentucky University (WKU) is committed to supporting faculty, staff and students by upholding WKU's Title IX Sexual Misconduct/Assault Policy (#0.2070) at https://wku.edu/eoo/documents/titleix/wkutitleixpolicyandgrievanceprocedure.pdf and Discrimination and Harassment Policy (#0.2040) at https://wku.edu/policies/hr_policies/2040_discrimination_harassment_policy.pdf.

Add/Drop Policy. Students who have trouble working independently are encouraged to drop the course. Please check On Demand's policy to drop a course as there are deadlines in place based on the day you registered for the course.