DEPARTMENT OF MANAGEMENT | COLLEGE OF BUSINESS
ILLINOIS STATE UNIVERSITY
Spring 2026

MBA 427 Operations and Quality Management

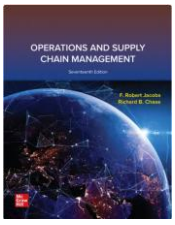
COURSE INFORMATION

Instructor:	Dr. Sandeep Jagani
Course Number & Title:	MBA 427 Operations and Quality Management
Prerequisites:	Business Math and Statistics or equivalent
Credit Hours:	3 credit hours
Meeting Time:	**Section 001 –** Thursdays from 7:45 pm to 9:15 pm SFHB 0147
	Section 002 – Thursdays from 7:45 pm to 9:15 pm via Zoom, The Zoom link will be available on Canvas.
	Section 003 – Thursdays from 6:00 pm to 7:30 pm SFHB 0147
	Section 004 – Thursdays from 6:00 pm to 7:30 pm via Zoom, The Zoom link will be available on Canvas.

INSTRUCTOR INFORMATION

Phone:	(309) 438-5774
E-mail:	sbjagan@ilstu.edu (Put MBA427:<Section #> in the subject line section)
Office Location:	SFHB 217
Zoom Office Hours:	1:00 pm to 2:00 pm Mondays and Thursdays and by appointment.
Zoom Office Link:	https://illinoisstate.zoom.us/j/85329234961

RESOURCES/MATERIALS REQUIRED



Authors:	F. Robert Jacobs and Richard B Chase,
Title:	Operations and Supply Chain Management 17e
Publisher:	McGraw-Hill/Irwin;
Edition:	17th edition SmartBook + CONNECT
ISBN13:	9781265282691

Required Harvard Business School Publishing (HBSP) Course Pack:

Course pack content:
Simulation game: Global Supply Chain Management Simulation V2

UNIVERSITY CATALOG COURSE DESCRIPTION

Issues related to managing the processes by which organizations transform resources into quality goods and services. Topics include operations strategy, project management, quality management, and inventory management.

COURSE PURPOSE (What is this course about?)

This course provides a strategic and analytical examination of operations and supply chain management in both manufacturing (e.g., Ford) and service (e.g., McDonald's) environments. We focus on how managers design, plan, and control processes to deliver high-quality products and services efficiently and responsively. Key topics include capacity planning, process and service design, materials procurement, scheduling, inventory management, project management, quality management, continuous improvement, and facility location decisions. Through case analyses, simulations, and applied assignments, you will develop the ability to integrate operational decisions with broader business strategy and to apply analytical tools for data-driven decision-making in complex, real-world contexts.

COURSE-LEVEL LEARNING OBJECTIVES (What will you learn from this course?)

By the end of this course, you will be able to:

1. **Analyze** organizational capacity and develop strategies that optimize resource utilization and responsiveness to demand changes.
2. **Apply** project management techniques and simulation tools to plan, monitor, and control projects under uncertainty.
3. **Compare** and **evaluate** manufacturing and service process designs to recommend improvements in efficiency, flexibility, and quality.
4. **Assess** waiting line systems using queuing theory to improve operational flow and customer experience.
5. **Implement** Six Sigma methodologies and **interpret** statistical quality control outputs to guide quality improvement initiatives.
6. **Design** and **optimize** business processes to eliminate waste, streamline flow, and enhance value creation.
7. **Select** and **justify** forecasting techniques to generate accurate demand predictions for operational planning.
8. **Integrate** sales and operations planning to align supply capabilities with organizational objectives.
9. **Construct** inventory management strategies using quantitative models and simulation-based decision tools.
10. **Evaluate** process bottlenecks using the Theory of Constraints to recommend throughput improvement strategies.
11. **Synthesize** operations and supply chain concepts in a global simulation to make coordinated sourcing, production, and distribution decisions.

COURSE REQUIREMENTS (What do you need to take this course?)

Canvas: Lecture slides, announcements, and grades will be posted on Canvas. Access it at Canvas.ILSTU.edu/. Please allow me up to one week after each assignment to grade and upload your scores to Canvas. To stay updated with course announcements and notifications, please check Canvas regularly.

Connect and Canvas assignments (575 points): Group assignments will be available on Canvas during class hours. Several quizzes and exercises will be administered on CONNECT, the publisher's website for the course. You must register on the course site (the procedure to register using the access code that comes with your text is in the following section) to work on assignments promptly.

A note about working on CONNECT at the publisher's website – multiple-choice questions are more structured like quizzes. Exercise questions are algorithmic, so no two students will see the same inputs for any questions. Feedback for Connect assignments will be available after the assignment's due date. It can be found along with your submission on Connect. Late submissions may not be accepted; if accepted, they will incur significant penalties.

Connect Registration Instructions: Log in to your Canvas MBA427 class. Locate any assignment on the Modules tab. Click on it, follow the displayed instructions, and get registered. Connect provides complimentary access for two weeks. It is a good idea to make use of it.

Tests (3 x 75 = 225 points): There will be three tests in this course. Each test will contribute toward 7.5% of your course grades. Each test will be administered in two parts. Multiple-choice questions (MCQ) (25 points) and problem-solving (50 points).

Mini cases (150 points): Three mini cases will be given throughout the semester. Directions to approach the case will be given when the case opens.

Simulation game (50 points): You will work in groups for this assignment. A course pack from the Harvard Business School Publishing website shall be purchased and downloaded using the above link. I will provide further instructions at the time of administering this assignment.

GRADING POLICIES (How do we calculate grades?)

Category	Points
Connect and Canvas assignments	575
Tests (3 x 75)	225
Mini cases (3 x 50)	150
Simulation game	50
Total	**1000**

Grading System:

Grade	Scores
A	900 – 1000
B	800 – 899
C	700 – 799
D	600 – 699
F	Less than 600

SUPPORT AND RESOURCES (How will you be supported to succeed in this class?)

Support from the instructor: I aim to create the best learning environment possible, and I welcome your questions, concerns, or feedback — it helps me improve and helps you succeed. You can reach me by email, phone, or Zoom. I respond to emails within 24 hours on weekdays and within 48 hours on weekends (not between 8 pm–8 am). Feedback and grades will be provided within 10 days of the due date. Asking for help is encouraged — please reach out early if you need support.

Campus Support: The following units are ready to help ISU students with various needs. Please contact them directly for more information. A list of additional student support units and resources is available in the module tool on our Canvas course site.

- ISU Help Desk: (309) 438-4357, supportcenter@illinoisstate.edu for technical support.
- Student Access and Accommodation Services: (309) 438-5853 (voice) or (309) 438-8620 (TDD) - for special accommodations (including religious accommodations)
- Student Counseling Services (SCS): (309) 438-3655 or http://counseling.illinoisstate.edu/ - Counseling support for stress or difficult emotions. Services are FREE and confidential.

- Visor Academic Center: (309) 438-3217 or https://universitycollege.illinoisstate.edu/help/ - Writing assistance, tutoring, and various workshops are available.
- Dean of Students Office: (309) 438-2008 or https://deanofstudents.illinoisstate.edu/ - for student organizations, events, and services, also for extended absence notification.

COURSE POLICIES (What policies would affect my success in this class?)

Attendance: Follow ISU's attendance policy. Notify me and the Dean of Students for extended absences.
- Link to ISU's policy for which absences are excused, and which are not.
- Link for contact for Dean of Students Office.

Accommodation: Contact Student Access and Accommodation Services:
- 308 Fell Hall, (309) 438-5853, Website StudentAccess.IllinoisState.edu.

Electronics Use: Laptops/tablets only for relevant activities. Phones must be silenced in class.

Generative AI Use: Not permitted for graded assignments.
- Allowed for self-study (e.g., summarizing textbook content, generating practice problems).
- Any AI-generated work submitted for grading will be treated as academic dishonesty.

Academic Integrity: Follow the Code of Student Conduct. Plagiarism, unauthorized collaboration, or AI-generated submissions for graded work will result in disciplinary action.

VIDEO RECORDING NOTICE (What should an online/hybrid modality mean to you?)

- **Sections 01 & 03**: Meets in person for 1.5 hours on Thursdays plus 1.5 hours of weekly asynchronous online activities.
- **Sections 02 & 04**: Meets on Zoom for 1.5 hours on Thursdays plus 1.5 hours of weekly asynchronous activities. Webcams must remain on during class to ensure engagement and maintain academic integrity.

Class Recordings:
- The instructor may record class sessions. Recordings, if shared, are for enrolled students only and may not be reproduced, shared outside the class, or posted publicly.
- Students may not record or photograph the class without written permission from the instructor or an approved accommodation from Student Access and Accommodation Services.
- Approved recordings may only be used for personal or group study by enrolled students and may not be shared outside the class.

TENTATIVE SCHEDULE* (What will I study each week of the semester?)

Week	Date	Topic
1	Week of Jan 15	Chapter 5 – Strategic Capacity Management Connect assignment due next Wednesday
2	Week of Jan 22	*Assignment 1*: Using linear programming for capacity management, due next Wednesday. Mini case 1 is introduced today
3	Week of Jan 29	Chapter 4 Project Management Connect assignment due next Wednesday *Assignment 2*: Using simulations for project management, due next Wednesday Mini case 1 is due next Wednesday
4	Week of Feb 05	Chapter 7 – Manufacturing Processes Connect assignment due next Wednesday Chapter 9 – Service Processes Connect assignment due next Wednesday
5	Week of Feb 12	**Test 1** (Chapters 4, 5, 7, and 9) **In-person for all sections**, (Timed 30 minutes for Part 1 and 1 hour for Part 2)
6	Week of Feb 19	Chapter 10 – Waiting Line Analysis and Queuing Theory, Connect assignment due next Wednesday *Assignment 3*: Use simulations for waiting line analysis, due next Wednesday.
7	Week of Feb 26	Chapter 12 – Six Sigma Quality Connect assignment due next Wednesday Chapter 13 – Statistical Quality Control Connect assignment due next Wednesday Mini case 2 is introduced today
8	Week of Mar 05	Chapter 11 – Process Design and Analysis Connect assignment due next Wednesday
9	Week of Mar 12	**SPRING BREAK – NO CLASS**
10	Week of Mar 19	Chapter 18 – Forecasting, Connect assignment due next Wednesday. *Assignment 4*: Comparing forecasting methods - Excel exercise, due next Wednesday.
11	Week of Mar 26	**Test 2** (Chapters 10, 11, 12, and 13) **In-person for all sections**, (Timed 30 minutes for Part 1 and 1 hour for Part 2) Mini case 2 is due next Wednesday

Week	Date	Topic
12	Week of Apr 02	Chapter 19 – Sales and operations planning Connect assignment due next Wednesday
13	Week of Apr 09	Chapter 20 – Inventory Management Connect assignment due next Wednesday *Assignment 5*: Inventory Management by Simulation, due next Wednesday. Mini case 3 is introduced today
14	Week of Apr 16	Mini case 3 is due next Wednesday
15	Week of Apr 23	Chapter 22s – Theory of Constraints Connect assignment due next Wednesday Global Supply Chain Simulation is introduced today
16	Week of Apr 30	Global Supply Chain Simulation Presentation
17	Week of May 04	**Test 3** (Chapters 18, 19, 20, and 22s) **In-person for all sections** on the date published by the registrar's office (Timed 30 minutes for Part 1 and 1.5 hours for Part 2)

*Note: Changes to the above tentative schedule can be made to enrich the course's learning objectives. However, you will be notified as early as possible if any change occurs.

Connect, and Canvas assignments point distribution.

Assignments	Platform	Points	Relevant Study Problems in the Chapter*
Ch 04 Projects - MCQ	Connect	15	
Ch 04 Project - Problems	Connect	30	4-12; 4-8; 4-9; 4-10
Project management by simulations	Canvas	30	
Ch 05 Strategic Capacity Management - MCQ	Connect	15	
Capacity Management using linear programming	Canvas	30	
Ch 07 Manufacturing Processes - MCQ	Connect	20	
Ch 07 Manufacturing Processes - Problems	Connect	30	7-8; 7-16; 7-10; 7-13
Ch 09 Service Processes - MCQ	Connect	20	
Ch 10 Waiting Line Analysis and Queuing Theory - MCQ	Connect	10	
Waiting line analysis by simulations	Canvas	30	
Ch-11 Process Design and Analysis - MCQ	Connect	20	
Ch 11 Process Design and Analysis - Problems	Connect	25	11-1; 11-6; 11-7
Ch 12 Six Sigma Quality - MCQ	Connect	20	
Ch 12 Six Sigma Quality - Problems	Connect	15	12-7; 12-10
Ch 13 Statistical Quality Control - MCQ	Connect	20	
Ch 13 Statistical Quality Control - Problems	Connect	40	13-2; 13-5; 13-6; 13-9
Ch 18 Forecasting - MCQ	Connect	15	
Ch 18 Forecasting - Problems	Connect	25	18-3; 18-4
Comparing forecasting methods - Excel exercise	Canvas	30	
Ch 19 Sales and Operations Planning - MCQ	Connect	10	
Ch 19 Sales and Operations Planning - Problems	Connect	20	19-7; 19-14;
Ch 20 Inventory Management - MCQ	Connect	20	
Ch 20 Inventory Management - Problems	Connect	35	20-4; 20-12; 20-23; 20-19; 20-14
Inventory Management by Simulation	Canvas	30	
Ch 22s Theory of Constraints - MCQ	Connect	6	
Ch 22s Theory of Constraints - Problems	Connect	14	23-12; 23-18
Total		**575**	

*Notation - "4-12" means problem 12 in chapter 4: Projects (it is always better to identify the chapter by name - in the full version of the text)