

## SCM 844: Global Manufacturing and Service Operations – Fall 2025



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Office Hours: By Appointment, please email to schedule a date/time

### Introduction:

No supply chain degree would be complete without a thorough understanding of the production function in the supply chain. The purpose of this course is to give you tools for understanding and analyzing the production function as well as using it to coordinate important aspects of the broader supply chain.

### Course Learning Objectives:

- Gain an intuitive understanding of production parameters and their effect on performance
- Be able to diagnose whether a production line is performing well
- Be familiar with visualizations of production flow problems through studying *The Goal*
- Build a rich understanding of how variability in process and flow times impacts the performance of a production line
- Be familiar with Six Sigma methodology and Lean Production principles for process improvement
- Evaluate the advantages and disadvantages of ERP systems
- Differentiate between the tools of capacity planning, location planning, and scheduling
- Develop supply chain strategies to improve operations and increase supply chain coordination and profitability

### Course Materials:

#### Books:

- Goldratt, E. M., & Cox, J. (2014). *The Goal: A Process of Ongoing Improvement* (30th Anniversary ed.). Great Barrington, MA: North River Press. (3<sup>rd</sup> and 25<sup>th</sup> Anniversary editions are also ok)
- Meredith, J. R., & Shafer, S. M. (2023). *Supply Chain and Operations Management for MBAs* (8th edition). Hoboken, NJ: John Wiley & Sons.

#### Other Materials:

Instructions for accessing these materials are provided in the Course Orientation module in Canvas.

- Case studies and readings provided through Penn State’s Library Course eReserves.
- Case studies and readings provided through Harvard Business Online. *Purchase required.*

## Expectations:

### What is expected of you, the student?

Students must actively participate throughout the course. You should maintain regular contact with your team and log on regularly to keep up with the latest posts. The expectation is that your contributions will be professional, timely, substantive, positive, and energetic. If you face unexpected personal or professional difficulties that hinder your performance, please let us know as soon as possible.

Most important, you are expected to maintain the highest level of academic integrity. You may neither give nor receive any help on team assignments except from your team. Individual written assignments must represent your work and must not be byproducts of a joint work effort.

In this course, we will use many tools to help you learn the material, but it is up to you whether you meaningfully engage or simply go through the motions. One of the most important components of learning is the degree to which a student engages with the material. For example, in a Discussion you can think deeply about the questions, prepare carefully your comments and responses (i.e., not just a draft or stream-of-consciousness), and contribute multiple times; or you can pick a couple of easy spots to say something that “fits” and meets the grading requirement. I strongly encourage you to do the former.

### What can you expect from the course instructor?

I will be online frequently during the week to answer questions and respond to comments that you may have. I typically respond to individual emails within 24 hours. Please understand, if I am occasionally slow. I will provide feedback and scores on assignments within 7 days of the submission date.

## Communication

In this course, we will communicate mainly through email. I will send course emails to the whole class through Canvas. To have your Canvas notifications forwarded to your Penn State email or another address, please visit **Lesson 4: Course Communication and Notifications** of the Course Orientation module in Canvas for instructions.

For individual emails, I will use my PSU email and ask you to do the same. Please include SCM 844 in the subject line to help me quickly recognize a course email.



Generative Artificial Intelligence (GenAI) Course Policy – GenAI is Prohibited

**The use of Generative AI (GenAI) is prohibited in this course for all assignments.** This policy applies to the use of all GenAI tools, including but not limited to ChatGPT, Gemini, Claude, Perplexity, Quillbot, Penn State's freely available version of Copilot, etc., and is reflective of the notion that your personal mastery of the course material is front and center.

Please refer to the university policies regarding academic integrity in [part 2 of the syllabus](#).

## Course Activities:

### Screencasts

Most of the material is delivered through course videos, with supplemental written text.

### Text Readings

Most lessons will also include a reading from the course textbook which you should complete.

### Other Readings

Sometimes lessons will also include outside readings that should be read as part of the lesson.

### Thought Experiments

From time to time a lesson will include a thought experiment, which is much like an assignment, but it is not submitted for grading. You might consider taking notes to help you think.

### Outside Videos

Occasionally a lesson will include videos from outside sources to help illustrate concepts and principles.

## Course Assignments (submitted):

### Individual Homework

There are several homework assignments in the course. These are to be completed individually. They will involve some calculations and so you are encouraged to do them by hand—but your handwriting must be readable! Scan and post your work to Canvas.

### Discussions

This course includes three online discussions. Instructions for each are in Canvas.

### Team Assignments

Your team will analyze a series of assigned questions relating to case studies and submit a write-up of your analysis. Specific information regarding the criteria and expectations for your deliverables will be explained in relevant course lessons. You will be placed on a team early in the semester.

### Important Notes about Peer Evaluations, Free Riders and Team Composition/Grades

**NOTE 1:** Each student should keep detailed notes and evidence of group efforts to support their evaluations of peers. The instructors may ask to see evidence to support the

scores. After submitting your peer evaluation in the online application, you will be sent confirmation via email with your ratings to your PSU email account.

**NOTE 2:** If there is a free-rider problem (e.g., a student is relying on other teammates to do the work for them) within the group, the instructors reserve the right to address this problem via various mechanisms including, but not limited to, removing the free-rider from the team, assigning a grade that is lower than the team grade, etc.

**NOTE 3:** The instructors reserve the right to alter the team composition and/or the grading scheme for team assignments.

**NOTE 4:** All students are responsible for team assignments. Please have checks and balances in place to ensure that mistakes (e.g., leaving track changes on, etc.) are not made. Grade penalties may be imposed if team assignments contain track changes.

### Grading: 300 Points Possible

Assignments	Points each	Total
5 Individual Homework Assignments	20	100
3 Discussions	20	60
1 Reflection Paper	20	20
2 Team Case Studies	50	100
2 Peer Evaluations	10	20

### Grade Assignment:

Listed below are the minimum total points required for each letter grade:

A 281	B- 239
A- 269	C+ 230
B+ 260	C 209
B 248	D 179

### Grade Point Average:

Please be advised that a minimum grade-point average of 3.0 for all graduate level coursework done at the University **is required** for graduation and to maintain good academic standing.

### Due Dates and Late Submissions:

Due dates and times for all assignments are indicated in the Course Schedule. I am giving each student 3 “Late Days” to be used at your discretion throughout the course. These may be applied in

whole day increments to any individual assignment. I am also giving each team 1 “Late Day” to be used at your discretion for either of the two team case assignments. You are encouraged to notify me, but not required, if you are using your Late Days on a particular assignment. Late days will be applied to each late assignment until they are used up. The gradebook will show how many Late Days remain.

## College and University Policies

Please read the Smeal College of Business and Penn State University Policies and Resources in the [Part 2 Syllabus](#).

## Course Schedule:

The schedule is tentative and may change at the instructor’s discretion. All assignments are due by midnight Eastern Time (UTC-4 for Sep/Oct, then UTC-5 for Nov/Dec) the evening of the due date. The course runs from August 25, 2025, to December 14, 2025.

### Module 1: Process Analysis (Weeks 1 – 5, August 25 – September 28)

Week	Lesson	Assignments to Submit	Due Date(s)
1	Lesson 1: Production Foundations		
2	Lesson 2: Performance Measures	Homework 1, 20 pts	September 7
3-4	Lesson 3: Kristen’s Cookie Co. Case	Case Write-up, 50 pts Peer Evaluation, 10 pts	September 21 September 23
5	Lesson 4: <i>The Goal</i> , Ch. 1 – 20	Discussion, 20 pts	September 28

### Module 2: The Impact of Variability (Weeks 6 – 10, September 29 – November 2)

Week	Lesson	Assignments to Submit	Due Dates
6	Lesson 1: Variability Basics Lesson 2: Process Time Variability	Homework 2, 20 pts	October 5
7	Lesson 3: Process Flow Variability Lesson 4: Queueing	Homework 3, 20 pts	October 12
8-9	Lesson 5: National Cranberry Cooperative Case	Case Write-up, 50 pts Peer Evaluation, 10 pts	October 26 October 28
10	Lesson 6: The Theory of Constraints	Discussion, 20 pts	November 2

### Module 3: Supply Chain Strategies (Weeks 11 – 13, November 3 – 23)

Week	Lesson	Assignments to Submit	Due Dates
11	Lesson 1: Newsvendor model		
12	Lesson 2: Newsvendor Performance Measures	Homework 4, 20 pts	November 16
13	Lesson 3: Quick Response with Reactive Capacity Lesson 4: Supply Chain Coordination	Homework 5, 20 pts	November 23

#### Module 4: Process Improvement (Week 14, December 1 – 7)

Week	Lesson	Assignments to Submit	Due Dates
14	Lesson 1: Reducing Variability with Six Sigma Lesson 2: Lean Production—Eliminating Waste	Reflection Paper, 20 pts	December 7

#### Module 5: Process Execution (Week 15, December 8 – 14)

Week	Lesson	Assignments to Submit	Due Dates
15	Lesson 1: ERP Systems Lesson 2: Capacity, Location, and Scheduling	Discussion, 20 pts	December 14

Please refer to [Part 2 of the syllabus](#) for Penn State University, Smeal College of Business, and Program policies and resources.