Department of Industrial Technology
IT 4301 | Org of Industrial Processes | Fall 2026 - 1st 8-Week Online Term

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Office Hours: By Appointment

Class Time and Location: ONLINE | 1st 8-Week Session: August 24-October 16, 2026

Required Textbook:
Operations and Supply Chain Management, 3rd Edition
Author(s): David A. Collier, James Evans
Publisher:
ISBN-13:9780357901649
ISBN-10: 0357901649
https://sulross.textbookx.com/institutional/index.php?action=browse#books/4443250/

Reference:
There will also be additional reading material assigned in the form of handouts that contain industry related information. Students will be responsible for that information on tests and quizzes.

Course Description

The objectives of this course of study are to provide the student with an opportunity to acquire basic knowledge and understanding in the area of operations management. Emphasis is on managerial processes for effective operations in both goods-producing and service-rendering organizations in global environments. Topics include operations strategy, process design, capacity planning, forecasting, production scheduling, inventory control, quality assurance, and project management.

Course Objectives

This course aims to improve students understanding of the concepts, principles, problems, and practices of operations management. After completing this course, students should be able to:

- Develop an understanding of an appreciation for the production and operations functions in any organization

- Demonstrate an understanding of forecasting and how this impact a organizations operations.
- Apply decision trees to product issues
- Describe how goods and services are defined by operations management
- Explain the strategic importance of the supply chain
- Explain issues and opportunities in supply chain
- Explain and identify issues in logistics management
- Define Sales & Operations planning
- Define Aggregate planning
- Describe ERP
- Describe how to improve system reliability
- Determine system reliability
- Determine mean time between failure (MTBF)

Additionally, students will be exposed to Lean concepts, 5s, and the seven wastes. This class is to be a learning experience, and one that you want to come to each week. As such the class structure, lesson topics, and overall learning environment will emphasize more than just knowledge comprehension.

Students with Special Needs

Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the Student's responsibility to initiate a request. Please contact me, Ms. Rebecca Greathouse Wren, M.Ed., LPC-S, Director/Counselor, Accessibility Services Coordinator, Ferguson Hall (Suite 112) at 432.837.8203; mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas 79832. Students should then contact the instructor as soon as possible to initiate the recommended accommodations.

Attendance –Student Expectations

Attendance (regular participation in the online classroom) is essential for maintaining the best learning environment. Learning occurs in relationship not only between student and course materials, but, just as importantly, peer to peer, professor to student, and student to professor.

Participation in this course via the Internet is the responsibility of the student. Students receiving benefits from government agencies must adhere to policies stipulated by the specific agency.

NOTE: This Internet class demands that the student be self-motivated and self-disciplined. You are responsible to keep up with the schedule, assignments, and exams. I will be contacting you throughout the semester by email, and Blackboard is available at all times.

What You Should Understand About Internet Classes

1. Be realistic about the amount of time required to do the coursework.
2. On-line is NOT easier!
3. Schedule class time just as if you were attending class on-campus
4. Turn in your work **ON TIME**
5. Participate actively in the class
6. ***Use e-mail and the discussion boards to communicate often with your instructor & classmates***
7. Log onto the class at least 5 times a week
8. Do NOT fall behind in your assignments
9. ASK for help when you need help

Distance Education Non-Participation Statement

Policies in effect for on-campus, traditional classroom instruction courses also apply to students enrolled in distance education courses, including Web-based and ITV courses. The University allows a maximum of 20% absences in a course before an instructor may drop a student for excessive absences. In Web courses, this policy is interpreted as not participating for more than 3 weeks in a long semester, 1 week in a summer session, or 3 days in the midwinter session.

Any student dropped for non-participation will receive an "F" in the course dropped.
Inactivity may include the following:

- not logging on to the course not submitting assignments
- not participating in scheduled activities
- not communicating with the instructor by phone or email, and/or
- not following the instructor's participation guidelines stated in the syllabus

Any student who has not logged on to this course or submitted assignments by August 31, 2026 will be considered to have exceeded the University's policy on "excessive absences" and may be automatically dropped from the course. August 31, 2026 is the census/drop-without-academic-record date for the Fall 2026 1st 8-week term. Blackboard statistics track the logins made and document the sections of the course accessed. These statistics will be used by your professor as a factor in documenting your participation in the course.

Your professor will use Blackboard statistics to document logins to the course and assignments accessed.

Class Structure

The course is totally online. Strategies include: Reading resources (papers); lectures with assignment instructions and use of the discussion board through Blackboard; written assessments at midterm and final; use of the Internet; and e-mails among students and between individual students and the professor. ***Students are responsible for completing all assigned work.***

Discussion Participation

Discussion topics are set up for each module; you are expected to contribute to each discussion by posting a comment and replying to at least 2 other posts. Five points can be earned for each discussion following the guidelines below. Spelling and grammar count.

Time Commitment

You will be expected to log on to the course site 5-6 times per week. You are also expected to participate in all assigned activities including discussions in the course. Students should be prepared to spend at least 4-6 hours per week outside of class on assignments that will include: Homework, Reading Assignments, Lab work and studying for tests and quizzes.

Assignments

All assignments are to be submitted via Blackboard. No late work will be accepted without proper documentation or prior approval by the instructor.

Course Communication: The official e-mail communications channel for this course is the Sul Ross State University e-mail account (yourname@sulross.edu) of each student and professor. For the purposes of this course, no other e-mail account is acceptable.

Due dates: All assignments and projects will be given due dates which must be met. All assignments will be due by 11:59 pm on the assigned day. Assignments and projects will not be accepted if they are turned in late without approval. **Late assignments will lose ten points per calendar day**. Students are responsible for meeting the deadlines even if classes are missed.

Grading: All work will be graded on specific criteria using the following guidelines. Any worksheets will be graded on a points-per-answer basis. Any sketches and drawings assigned will be graded on a 100point (percentage) scale. Criteria for grading will include accuracy of content, appropriateness of content for assignment, presentation, and clarity. Projects in the lab will be graded on accuracy, neatness, content, adherence to standards, adherence to assignment, and workmanship. Graded items will be broken into specific categories and presented on grade sheets given at the time the assignments are given.

Grading Policy

Final grades will be determined by totals in these areas:

- 25% test / quizzes
- 30% final exam (comprehensive)
- 25% assignments: homework
- 20% discussion participation

In the event one of the above categories is not completed during the course that percentage will automatically be divided between the other categories at the same level. All assignment points will be converted to percentages for individual assignment letter grades.

A=100-90;
B=89-80;
C=79-70;
D=69-60;
F=59-0

Grades will be earned on the basis that "C" is average work, "B" is above average work, and "A" is well above average work. Barring unusual circumstances, there will be ***NO INCOMPLETES*** given at the end of this semester.

Artificial Intelligence (AI) Use in This Course

AI tools may be used when specifically permitted by the instructor for brainstorming, data exploration, scenario development, editing, or other learning activities. Students remain responsible for the accuracy, originality, analysis, citations, and final conclusions of all submitted work. AI-generated information must be verified against reliable sources. Submitting AI-generated work as one's own without disclosure when disclosure is required, fabricating sources or data, or using AI on an assessment when prohibited will be treated as an academic-integrity issue. Specific assignment instructions supersede this general policy.

Academic Honesty

All students are expected to complete their own work at all times. Any dishonest conduct will be promptly rewarded with an immediate "F".

Plagiarism

A student guilty of plagiarism and/or cheating will receive a grade of "F" in the course involved and the grade will be so recorded on the transcript. Students giving and receiving assistance in any unauthorized manner during an examination will subject themselves to this cheating policy. A pattern of cheating will result in suspension.

Quizzes

You will not be given advance notice of quizzes. They will be primarily written in nature. There will be no make-up quizzes.

Tests/Exams

All exams will be given on the announced date.

Everything discussed and everything in the assigned reading, including laboratory material, is fair game for tests and quizzes. It is your responsibility to be in attendance the day of scheduled exams. Tests will be either administered through Blackboard or written in nature using various styles of questions covering terminology, equipment, processes, and other items discussed. Attendance for the tests is mandatory; no makeup tests will be given.

Midterm Exam

There will be no midterm exam given.

Final Exam

The final exam will be administered on Friday, October 16, 2026, the final-examination date for the Sul Ross State University Fall 2026 1st 8-week term. The specific availability window for this online course will be announced during the term. The exam will include conceptual, quantitative, practical, and analytical portions and will be comprehensive of the 8-week course.

Modernized Course Learning Outcomes

- Explain how artificial intelligence (AI), machine learning, generative AI, automation, digital twins, and advanced analytics are changing operations and supply chain management.
- Use operational and supply chain data to identify patterns, evaluate performance, develop forecasts, and support evidence-based decisions.
- Evaluate supply chain risks and design resilience strategies using redundancy, flexibility, visibility, scenario planning, time-to-survive, and recovery planning.
- Explain the evolution from Sales and Operations Planning (S&OP) to Integrated Business Planning (IBP), including integration of demand, supply, financial, and strategic plans.
- Develop and communicate an executive-level recommendation using quantitative analysis, operational tradeoffs, and business judgment.
- Assess responsible AI use in operations, including data quality, human oversight, privacy, bias, cybersecurity, and verification of AI-generated output.

Fall 2026 Contemporary Course Content

The required textbook remains the foundation for operations-management concepts. Contemporary readings and cases supplement the text so students can connect core principles to current industry practice.

Artificial Intelligence in Operations and Supply Chain

AI/ML fundamentals; generative and agentic AI; demand forecasting; predictive maintenance; routing and scheduling; inventory optimization; warehouse automation; decision support; human-in-the-loop governance; data quality and responsible AI.

Supply Chain Analytics

Descriptive, diagnostic, predictive, and prescriptive analytics; KPI design; forecast error; inventory and service metrics; visualization; scenario analysis; data preparation; and translating analytics into managerial decisions.

Supply Chain Resilience and Risk

Risk identification; supplier and network risk; geopolitical, transportation, cyber, weather, and capacity disruptions; visibility; redundancy versus efficiency; scenario planning; time-to-survive; recovery planning; and business continuity.

Contemporary S&OP and Integrated Business Planning (IBP)

Demand review; supply review; pre-S&OP; executive S&OP; consensus planning; financial integration; strategic alignment; scenario planning; planning horizons; decision rights; and AI-enabled forecasting and planning.

Major Applied Assignments

Operations Analytics Exercise: Analyze an operational or supply chain data set, calculate relevant KPIs, identify performance drivers, and make a management recommendation.

AI in Operations Case Analysis: Evaluate an AI use case in forecasting, predictive maintenance, inventory, transportation, procurement, or warehouse automation, including business value, data needs, implementation risk, and human oversight.

Supply Chain Resilience Scenario: Respond to a simulated disruption and develop a mitigation and recovery plan balancing service, cost, inventory, capacity, and risk.

S&OP/IBP Capstone: Reconcile demand, supply constraints, inventory/capacity decisions, and financial implications and present an executive S&OP/IBP decision package.

Fall 2026 8-Week Online Course Schedule

This accelerated schedule aligns with the Sul Ross State University Fall 2026 1st 8-week term, August 24-October 16, 2026. The census/drop-without-academic-record date is August 31, the deadline to drop/withdraw with a grade of W is October 2, and final examinations are October 16. Specific assignment due dates will be posted in Blackboard and may be adjusted by the instructor.

Week	Dates	Topic	Key Concepts	Major Activity
1	Aug. 24-30	Operations & Process Foundations	Operations strategy; goods/services; process design; bottlenecks; capacity	Orientation / process exercise
2	Aug. 31-Sep. 6	Forecasting & Supply Chain Analytics I	Demand planning; forecast error; KPIs; descriptive and diagnostic analytics	Forecasting / analytics lab
3	Sep. 7-13	Supply Chain Analytics II, Inventory & ERP	Predictive/prescriptive analytics; scenarios; inventory control; ERP; visibility	Operations Analytics Exercise
4	Sep. 14-20	AI in Operations & Supply Chain	AI/ML; generative AI; predictive maintenance; quality; forecasting; inventory; logistics; human oversight	AI in Operations Case Analysis
5	Sep. 21-27	Logistics, Networks & Supply Chain Risk	Transportation; warehousing; network tradeoffs; risk identification; vulnerability	Logistics / risk case
6	Sep. 28-Oct. 4	Supply Chain Resilience & Scenario Planning	Time-to-survive; redundancy; flexibility; continuity; recovery; scenario planning	Supply Chain Resilience Scenario
7	Oct. 5-11	Contemporary S&OP & Integrated Business Planning	Demand/supply balancing; aggregate planning; financial integration; strategy; executive decision-making	S&OP/IBP simulation / capstone launch
8	Oct. 12-16	IBP, Operational Excellence &	AI-enabled planning; governance; Lean; 5S;	S&OP/IBP Capstone + Final

Week	Dates	Topic	Key Concepts	Major Activity
		Course Integration	seven wastes; reliability; continuous improvement	Exam Oct. 16

Supplemental Fall 2026 Resources

- Association for Supply Chain Management (ASCM), Top 10 Supply Chain Trends in 2026.
- ASCM, Supply Chain Resilience.
- ASCM, Supply Chain Technology.
- ASCM, Artificial Intelligence and Machine Learning; Machine Learning Applications in Supply Chain Analytics.
- IBM, What is Integrated Business Planning (IBP)? Updated January 2026.
- IBM, What is Supply Chain Planning? Contemporary overview of S&OP and IBP.

Additional current articles, cases, videos, data sets, and industry reports may be assigned through Blackboard. Students should evaluate source credibility and distinguish verified facts from assumptions or AI-generated content.