

**ERP 5310 Supply Chain Management Systems in an ERP Environment  
Course Syllabus – Fall 2023**

**Department Mission**

*“To serve the economic interests of industry and the evolving needs of society in a challenging, rapidly-changing, global environment, the Department of Business & Information Technology capitalizes on the strong technological emphasis of Missouri S & T to enable individuals to excel in a technology-centric business world. Recognizing this rapid evolution of the marketplace, we create and disseminate knowledge impacting the theory and practice of business.”*

**INSTRUCTOR AND COURSE INFORMATION**

<b>Instructors:</b> Bih-Ru Lea, Ph.D.	<b>Class Hours:</b> 4 pm –6:30 pm Tuesday
<b>Office:</b> Fulton 102A	<b>Classroom:</b> Fulton 107A
<b>Phone:</b> 573-341-6436	<b>Office Hours:</b> Tuesday & Thursday 11:30 am – 1 pm
<b>E-Mail:</b> leabi@mst.edu	and by appointment (suggest a time via email)
<b>Course Credit:</b> 3 semester hours of credit	
<b>Prerequisite:</b> ERP 2110 or graduate standing	<b>Class Web:</b> <a href="http://canvas.mst.edu">http://canvas.mst.edu</a>

**COURSE CATALOG DESCRIPTION:**

The course studies the need for supply chain integration and the challenges of managing complex interfaces. This course focuses on the systems approach to the planning, analysis, design, development, and evaluation of the supply chain. The course discusses activities that lead to the integration of information and material flows across multiple organizations and analytics that lead to intelligence supply chain management. SAP's S/4HANA ERP system, SCM, SAS Viya (Visual Analytics, Visual Statistics), and SAP Analytic Cloud are used to deploy SCM applications.

**COURSE OBJECTIVES**

As a result of taking this course, students are expected to:

AACSB Program Objectives  Course Objectives	Communication Skills	Critical Thinking	Information Technology	Teamwork & Leadership	Global & Multicultural Issues	Integrate Business Areas
Be able to describe and explain the fundamentals of the Supply Chain	X	X			X	X
Be able to make reasonable decisions for supply chain design and management problems using IT-enabled decision-support systems;		X	X	X		X
Gain knowledge of common supply chain practices	X	X	X		X	X
Be able to explain the fundamentals of ERP systems applied to Supply Chain Management	X	X	X	X	X	X
Be able to create applications of data visualization, analytics, and in-memory computing technologies in Supply Chain Management			X		X	X

## TEXTBOOK(S) AND MATERIALS FOR THE COURSE

1. Operations and Supply Chain Management: The Core by Robert Jacobs, 5th edition, McGraw-Hill Education; (ISBN-10: 1260547620, ISBN-13: 978-1260547627)
2. ERP5310 Course Pack (ISBN:810000298097,S&T Publishing, <https://www.thesandtstore.com/>)

The textbook and course pack have been approved to be a part of the S&T [AutoAccess program](#) designed to reduce the cost of required course materials for students. For example, you are paying **\$32** instead of \$100-\$180 for the textbook and **\$10** for the course pack instead of \$90 - \$110 through the [AutoAccess program](#). You can access the digital content by clicking the "[VS Materials](#)" on the left Canvas menu bar on **the first day of class**.

Your AutoAccess course may have a Print Upgrade available as an additional purchase. This is a low-cost version of the printed text made available by the publisher at a reduced cost. It is the publisher's requirement that in order to purchase the additional print, you must be opted in for the AutoAccess digital required material. If you have questions about Print Upgrades and opting out, please review the [AutoAccess program FAQ](#) or contact the S&T Bookstore at [autoaccess.thesandtstore.com](http://autoaccess.thesandtstore.com).

## GRADING POLICIES AND PROCEDURES:

Test 1	100 pts	Team Supply Chain Case Project	190 pts
Test 2	100 pts	• Three reports/Competitions (130 pts)	
Final Exam	100 pts	• Team presentation (60 pts)	
Assignments, quizzes, class exercises, and chapter review question sets	510 pts	Discussion Board Participation	Extra credit: up to 20 points (2%)

### Grading Scale:

A:  $\geq 895$  pts    B: 795 – 894 pts    C: 695 – 794 pts    D: 595 – 694 pts    F:  $< 594$  pts

### General Grading Policies:

1. **ALL ASSIGNMENTS AND TESTS ARE INDIVIDUAL WORKS UNLESS OTHERWISE SPECIFIED.**
2. Please make every effort to make it to class on time. It is disruptive to the class to have members arrive late.
3. The instructor will assign NO incompletes in lieu of a regular grade.

### Exams, Tests, and Quizzes

1. There will be two tests and one final examination. **All exam materials may become the property of the instructor after completion.**
2. It is possible to have announced and pop quizzes throughout the semester. The student will be given the date of announced quizzes one week in advance.
3. Exam dates and quizzes are a part of the class schedule. Failure to appear for an exam/quiz will result in the assignment of a zero for that exam/quiz. If you are going to miss an exam for a legitimate reason (e.g., scheduled surgery, official University business, etc.), contact the instructor **PRIOR** to the administration of that exam/quiz. A make-up quiz/test may be allowed **during the final exam period** only if convincing reasons and proper documentation (such as a doctor's note in case of surgery/illness) are given for the absence. The make-up exam will be a comprehensive exam covering the material throughout the course.
4. All in-class quizzes and tests are closed books and closed notes unless otherwise specified.

### Assignments

1. Assignments will mostly involve theories/concepts, mathematical computations, practical SAP ERP system operations, and other computer-intensive exercises.
2. All assignments are due at the beginning of the class on their due date. The grade will be reduced by 15% if

the assignment is turned in within 24 hours later than its due time/date. The late penalty is incremented by 15% for every 24 hours late. No work will be accepted if submitted four days after the due date, including weekends. An exception will only be given to a student with a legitimate reason and he/she notifies the instructor five days before the due date.

- If you are unable to attend a class, you need to (1) **submit your assignment file(s) via the Canvas submission link by the due date** and (2) ask a friend to submit a hard copy on your behalf at the beginning of the class on the due date.

### **Team Supply Chain Case Project**

- An integrated supply chain case team project will be assigned during the semester and account for 190 points of the final grade. The points distributions are provided in the table below.
- There are two case reports to analyze the case company's supply chain strategies over time and to recommend supply chain strategies utilizing analytics tools covered in the class.
- There are **three live simulation team competitions that require live participation**. The grade distribution and the specific time and date for each live simulation competition are indicated in the class schedule and the project assignment table below. To receive credit, each student should **make arrangements to participate in each of the three live team simulation competitions**. The team will present findings and provide recommendations to improve the case company's supply chain competitiveness.

<b>Project assignments</b>	<b>Points</b>	<b>Extra Credit</b>
Team business strategy report 1	<b>30</b> points	Up to 25% (or 7 points)
Team Competition 1 Setup	<b>20</b> points	
Team Competition 1 <b>5:30 – 6:30 pm, October 3</b>	<b>10</b> points	Teams with net income: +2 points Team competition ranking <ul style="list-style-type: none"> <li>• 1<sup>st</sup>: 5 points</li> <li>• 2<sup>nd</sup>: 3 points</li> </ul>
Round 2 Competition <b>5:30 – 6:30 pm, October 17</b>	<b>10</b> points	Teams with net income: +2 points Team competition ranking: <ul style="list-style-type: none"> <li>• 1<sup>st</sup>: 5 points</li> <li>• 2<sup>nd</sup>: 3 points</li> </ul>
Team Report 2 Analytics, Capacity Management, and Automation	<b>50</b> points	Up to 30% (or 15 extra points)
Round 3 Competition <b>5:30 – 6:30 pm, November 7</b>	<b>10</b> points	Teams with net income: +2 points Team competition ranking: <ul style="list-style-type: none"> <li>• 1<sup>st</sup>: 5 points</li> <li>• 2<sup>nd</sup>: 3 points</li> </ul>
Team Presentation Competition	<b>60</b> points	Team Presentation Ranking: <ul style="list-style-type: none"> <li>• 1<sup>st</sup>: 5 points</li> <li>• 2<sup>nd</sup>: 3 points</li> </ul>
<b>Total</b>	<b>190 points</b>	<b>plus extra credit earned</b>

### **Discussion Board Participation**

The sheer size of the concepts and complexity of ERP software limit the instructor from covering every aspect and screen that we will be using this semester. To help students better understand course materials, to develop debugging skills, and to learn from each other, the instructor has enabled a discussion board in the *Canvas Learning Management System*. **All technical support for assignments, exams, and projects are provided through the Discussion Board** and will **NOT** be answered through e-mail by the instructor.

- If you do not understand a concept or encounter a problem/error that you do not know how to resolve yourself, you will need to post your questions on the discussion board. You are also expected to answer questions asked by your peers. Occasionally, the instructor will also post questions and answers.

- Before posting a question on the Discussion Board, it is the student’s responsibility to check and ensure no same question has been posted previously.
- By the end of the semester, every student is expected to have asked and answered 10-15 questions. These discussions will earn you **up to 20 extra credit points** (or 2%) toward the course grade. Straightforward questions (for example – how do I get to this transaction, where can I find this button, etc.) will not count. Do not post questions just in the case of posting. The discussion board participation extra credits are awarded based on the analysis of the following content categories during the semester:

Categories	Percentage
Original posts, reply posts, and follow-up posts	45%
instructor endorsement	10%
Posts viewed	20%
Instructor posted topics/survey/poll participated/voted	25%
<b>Total</b>	<b>100%</b>

### **Class Attendance and Participation:**

Overall, student participation and discussion are essential to ensure that the course topics are understood and are made relevant to actual business situations encountered in the workplace. As such, attendance and participation are essential factors in the learning process and a tool for assessing student learning. The following sections describe attendance and participation policies for students enrolled in different class modes:

- **For ERP 5310-101 (in-person section):**
  - Attendance is required. You are also responsible for finding out what was covered in class and what announcements were made as well as obtaining handouts.
  - Each 10% of **unexcused absences will result in the loss of a letter grade**. For example, if your grade is a B and you have missed 10% of classes without legitimate excuses, you will end up with a C.
  - The instructor reserves the right to drop a student if a student has missed more than 20% of class time.
- **For ERP 5310-102 (asynchronous/distance section):**
  - Except for the three scheduled live team simulation competitions, **live class attendance is encouraged but not required**.
  - Students are required to (1) check class announcements and (2) review lecture recordings weekly if they are not attending a live class. Failure to do so may result in a zero quiz or test grade or may miss the extra credit opportunities that are announced during a lecture.

### **GENERAL COURSE POLICIES:**

#### **Statement about Copyright, FERPA, and Use of Video**

It is vitally important that our classroom environment promotes the respectful exchange of ideas. This entails being sensitive to the views and beliefs expressed during discussions whether in class or online. Please speak with me before recording any class activity. It is a violation of the University of Missouri policy to distribute such recordings without my authorization and the permission of others who are recorded. More information is provided [online](#).

#### **Accessibility and Accommodations**

It is the university’s goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on a disability, please contact Student Disability Services at (573) 341-6655, [sdsmst@mst.edu](mailto:sdsmst@mst.edu), and visit <http://dss.mst.edu/> for information.

#### **Student Honor Code and Academic Integrity**

- **The instructor does not tolerate academic dishonesty of any type.** You don’t get a second chance. You don’t get to redo work or be forgiven for academic misconduct. You will be assigned a 0 for any assessment where you perform academic misconduct and the instructor is **required to report the incident to the Department and the University for disciplinary actions** which may include dismissal from the

University. You may seek and give assistance on an assignment or project. You may not copy or plagiarize someone else's assignments, including assignments from previous semesters. You may not copy work from anyone else. You may not give someone else your answers. You may not submit someone else's work as your own. This **includes work done by an AI**. You may not do someone else's work for them. If you are caught receiving or giving an answer, this is considered academic dishonesty under university rules. Helping means helping someone figure out the solution themselves. It does not mean giving them the answers. If you don't know or don't want to spend the effort to actually teach someone else how to do something, don't help them. You will get in trouble. **Please note that there are elements designed into this course to cause your cheating to be revealed** (adopted from Dr. Cecil Huang Chua's policies).

- The Honor Code all students are expected to follow can be found at this link: <http://stuco.mst.edu/honor-code/>.
- Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the University of Missouri System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism, and sabotage (<http://registrar.mst.edu/academicregs/index.html>), **all of which will be reported to the Vice Provost for Academic Support.**
- Additional guidance including the University's Academic Dishonesty Procedures is available at <http://academicsupport.mst.edu>.
- Other resources for students regarding ethics and integrity can be found at <http://academicsupport.mst.edu/academicintegrity/studentresources-ai>.

### **Well-Being and UCARE** (<https://go.mst.edu/ucare-report>)

Any of us may experience strained relationships, increased anxiety, feeling down, alcohol/drug misuse, decreased motivation, challenges with housing and food insecurity, etc. When your mental well-being is negatively impacted, you may struggle academically and personally. If you feel overwhelmed or need support, please make use of S&T's confidential [mental health services](#) at no charge. For a quick guide to campus resources that address specific issues please visit our Well-Being Referral Guide, available as a website at <https://minerwellness.mst.edu/well-being-referral-guide/>. If you are concerned about a friend or would like to consult with a Care Manager, please make a UCARE referral for support and assistance. <https://stuaff.mst.edu/ucare/>.

### **Nondiscrimination, Equity, and Title IX**

Missouri University of Science and Technology is committed to the safety and well-being of all members of its community, and to creating an environment free from discrimination and harassment.

The University does not discriminate on the basis of race, color, national origin, ancestry, religion, sex, pregnancy, sexual orientation, gender identity, gender expression, age, disability, protected veteran status, and any other status protected by applicable state or federal law. As used in this policy, the word "sex" is also inclusive of the term "gender."

Additionally, US Federal Law Title IX states that no member of the university community shall, on the basis of sex, be excluded from participation in, or be denied benefits of, or be subjected to discrimination under any education program or activity. Violations of this law include sexual harassment, sexual assault, dating/domestic violence, and stalking.

In accordance with The Collected Rules and Regulations University of Missouri, Missouri S&T requires that all faculty and staff members report, to the Missouri S&T Equity Officer, any notice of discrimination disclosed through communication including but not limited to direct conversation, email, social media, classroom papers and homework exercises.

Report violations of the university's nondiscrimination policies, including Title IX to the Missouri S&T's Equity Officer and Title IX Coordinator at [equity@mst.edu](mailto:equity@mst.edu) or (573) 341-7734 located at 900 Innovation Drive - Suite 500 Rolla, MO 65409. To learn more about resources and reporting options (confidential and non-confidential)

available to Missouri S&T students, staff, and faculty, please visit <http://titleix.mst.edu>.

### **Classroom Egress Maps**

For all in-person instruction, faculty should explain where the classroom emergency exits are located. Classroom egress maps are posted at <http://designconstruction.mst.edu/floorplan/>.

### **COVID Update on Classroom Instruction**

- For the Fall 2023 semester, in-person courses and assessments are scheduled without distancing between students.
- To protect our campus community and each other from the risks of COVID-19 transmission, it is strongly encouraged that students, faculty, and staff to become fully vaccinated and boosted. A combination of vaccination, masking, social distancing, staying home when you are sick, being cautious about spending time in large groups, and seeking testing when you have symptoms of COVID-19 will be our most effective measures to mitigate against the spread of the virus.
- There is no requirement to provide proof of immunization, but students may report vaccination information at <https://studenthealth.mst.edu/>.

### **Contingency Information**

- Students should contact Student Health Services ([mstshs@mst.edu](mailto:mstshs@mst.edu)), 573-341-4284, if they are quarantined, become ill, or are unable to attend class or take tests on campus.
- If a student is isolating or quarantining, the student will receive an absence note from Student Health and not Student Support and Community Standards (Care Management). The student will be responsible for forwarding the absence note to their instructors.

### **Lateness**

Normally, the instructor will be in class on time. However, if the instructor is late by more than fifteen minutes, students should check with the Department of Business & Information Technology located in Fulton 101 whether the class will be canceled. Students are expected to be in class on time.

### **KEY DATES:**

- The last day to add this course is Sunday, September 3.
- The last day to withdraw from this course without a “WD” showing on the transcript is Monday, October 2
- The last day for dropping this course is Friday, November 10.

## ERP 5310 Fall 2022 Course Schedule

**Notation:** TXT: Textbook CP: Course Pack

Week of	Topic	Readings & Notes	
		Textbook	Coursepack
Prior to the 1 <sup>st</sup> class	1. Complete course Preparation Tasks & Technology Requirement Testing		pp. 286 - 299
	2. Review Class Syllabus (Canvas → Syllabus)		
	3. Pre-Class Survey (Canvas → Assignments)		
	4. Purchase the textbook and course pack and read Ch. 1 and Ch. 2	Ch. 1, Ch. 2	
<b>1</b> 8/22	Introduction to ERP 5310 & Course Overview		pp. 14-33
	Ch. 1 Introduction: Operations and Supply Chain Management	Ch. 1	pp. 34 - 50
	Ch. 2 Strategy and Sustainability	Ch. 2	pp. 51 - 59
	SAP ERP System Navigation and Operations		pp. 300 - 399
	<b>Assignment:</b> Lab 1 The Company's Supply Chain and SAP S/4HANA ERP System Navigation (CP: pp. 400 - 403, reference: CP: pp. 300 - 399) Ch. 1 & Ch. 2 review question set (Canvas → Modules → Chapter Review Question Sets)		
<b>2</b> 8/29	In-class Exercise: Visualize Supply Chain (SAP Analytics Cloud)		
	Ch. 6 Manufacturing	Ch. 6	pp. 60 - 81
	Introduction to Integrated Manufacturing Process in Supply Chain Context		pp. 404 - 423
	<b>Assignment:</b> Lab 2: Manufacturing Order to Cash Process (Course pack: pp. 424-428, reference: pp. 404 - 423) Ch. 6 review question set (Canvas → Modules → Chapter Review Question Sets) <b>(Extra Credit)</b> Supply Chain Team Case: Case Facts Quiz (Canvas → Assignments → Upcoming Assignments) (course pack: pp. 625 - 659)		
<b>3</b> 9/5	Ch. 3 Forecast: Moving Average, Exponential Smoothing, and Trends & Seasonality	Ch. 3	pp. 82 - 91
	<b>Assignment:</b> Lab 3: Demand Forecasting using Excel (Course pack: p. 429) Ch. 3 review question (Canvas → Modules → Chapter Review Question Sets) Team Project Report 1 (Course pack: pp. 706-723, assigned team Google Doc)		
<b>4</b> 9/13	Ch. 3 Forecast – Time Series Analysis, Linear Regression	Ch. 3	pp. 92 - 101
	Exercise: Forecast in ERP system		pp. 102 - 104
	<b>Assignment:</b> Lab 4: Demand Forecast in Sales and Operations Planning (SOP) using SAP S/4HANA ERP System (Course pack: pp. 430 - 436) Team Project: Company Setup (course pack: pp. 724 – 725)		
<b>5</b> 9/19	Supply Chain Analytics: Data Mining, and Augmented Analytics Exercises: Supply Chain Analytics ( SAS Viya: Visual Analytics & Visual Statistics; SAP Analytics Cloud)		pp. 105 - 108
	<b>Assignment:</b> Lab 5 part 1: Forecast applications and modeling using SAS Viya (course pack: pp. 437 - 458 and in-class exercise instructions)		
<b>6</b> 9/26	Ch. 4 Strategic Capacity Management	Ch. 4	pp. 118 - 140
	Exercises: Capacity Management in ERP Environment (S/4HANA ERP)		
	<b>Test 1</b> <ul style="list-style-type: none"> <li>The concept test is due at 11:59 pm, Tuesday, September 26</li> <li>Take-Home Computer Operation test is due at 4 pm, October 3</li> </ul>		
<b>7</b> 10/3	Exercises: Supply Chain Analytics: Decision Tree Application (SAS Viya; Excel Pivot Table)		
	5:30 – 6:10 Team Competition 1		pp. 726- 731
	6:10 – 6:20 ERP Report & Real-time Analytics		
	<b>Assignments</b> <ul style="list-style-type: none"> <li>Ch. 4 review question (Canvas → Modules → Chapter Review Question Sets)</li> <li>Lab 5 part 2: Supply Chain Analytics (SAS Viya and SAP Analytics Cloud) (course pack: pp. 486 – 487)</li> </ul>		

Week of	Topic	Readings & Notes	
		Coursepack	Coursepack
8 10/10	Ch. 8 Sales and Operations Planning (SOP)	Ch. 8	pp. 141-155
	Exercises: SOP Application in ERP Environment (S/4HANA ERP)		p. 155
	<b>Assignments:</b> <ul style="list-style-type: none"> <li>Ch. 8 review question set (Canvas→ Modules→ Chapter Review Question Sets)</li> <li>Lab 6 Preparation and Case 1 (course pack: pp. 488 - 500)</li> </ul>		
9 10/17	Ch. 9 Material Requirement Planning (MRP)	Ch. 9	pp. 156 - 185
	Exercise: MRP Application in ERP Environment (S/4HANA ERP)		pp. 180 - 185
	5:50 – 6:30 Team Case Competition 2		pp. 727 - 731
	<b>Assignments:</b> <ul style="list-style-type: none"> <li>Ch. 9 review question set (Canvas→ Modules→ Chapter Review Question Sets)</li> <li>Lab 6 Case 2, Case 3, and Report (course pack: pp. 500– 504)</li> </ul>		
10 10/24	Ch. 11 Inventory Management	Ch. 11	pp. 186 - 196
	Exercise: Inventory Management Application in SAP S/4HANA ERP		
	<b>Assignment:</b> <ul style="list-style-type: none"> <li>Ch. 11 review question set (Canvas→ Modules→ Chapter Review Question Sets)</li> <li>Team Project Report 2 (course pack: pp. 737-761; assigned team Google Doc)</li> </ul>		
11 10/31	Ch. 11 Inventory Management	Ch. 11	pp. 197 - 214
	Exercises: Supply Chain Analytics Application in Inventory Management		
	<b>Test 2:</b> <ul style="list-style-type: none"> <li>The concept test is due at 11:59 pm on 10/31</li> <li>The computer operation test is due at 4 pm on 11-7</li> </ul>		
12 11/7	Warehouse Management in SAP S/4HANA ERP System		pp. 505 - 533
	Exercises: Supply Chain Analytics Application in Sourcing and Procurement		
	5:50 – 6:30 Team Case Competition 3		pp. 732 - 736
	<b>Assignment:</b> <ul style="list-style-type: none"> <li>Ch. 13 review question set (Canvas→ Modules→ Chapter Review Question Sets)</li> <li>Lab 7: Warehouse Management Part 1 – Procurement (using SAP S/4HANA system) (course pack: pp. 533 - 545)</li> </ul>		
13 11/14	Ch. 13 Global Sourcing and Procurement	Ch. 13	pp. 224 - 235
	<b>Assignments: (Extra Credit)</b> Ch. 14 review question set (Canvas→ Modules→ Chapter Review Question Sets) Lab 8: Warehouse Management Part 2 – Procurement (course pack: pp. 546 - 559 ) Lab 9: Warehouse Management Part 3 – Procurement (course pack: pp. 560 - 574)		
14 11/21	Thanksgiving Holiday (no class)		
15 11/28	Ch. 5 Projects		pp. 257 - 278
	Exercises: Project Systems in ERP Environment (S/4HANA ERP)		pp. 279 - 281
	<b>Assignment:</b> Team Case Competition Presentation (Team Google Slide) Ch. 5 review question set (Canvas→ Modules→ Chapter Review Question Sets)		
16 12/5	Team Case Presentation		pp. 766 - 769
	Course Review		
	<b>Final Exam Take Home Computer Operation</b> is due at 4 pm on Thursday, December 14 (Lab 10 Project Systems (course pack: pp. 588-622) is a part of the computer operation test)		
17 12/12	<b>Final Exam: The concept test is due at 11:59 pm on Tuesday, December 12</b>		

**Note:** \* It is possible, due to extenuating circumstances that the exact coverage and sequencing of course content, grading criteria, and weights may change. Students will be notified in advance of such changes.