



# University of Management and Technology

## **School of Business and Economics**

Course Title: Managing Sustainable Supply Chains  
Course Code: OS617  
Department: Operations and Supply Chain

### **SBE Vision**

SBE envisions its success in the sustainable contribution that it will make to the industry, academia and research in public and private sector. SBE will lead by providing professionally competent and ethically conscious human resources engaged in the global and local context to foster socio-economic growth and sustainability for the society. SBE envisages having faculty with high research potential and a deep desire for cutting edge research including collaboration with national and international partners.

### **SBE Mission**

Being a research-oriented and student-centric business school, we emphasize research publications in impact journals as well as state-of -the-art learning methodologies. We will prepare our students to become the future ethical business leaders and the guiding post for the society, while equipping them with the knowledge and skills required by world-class professionals. We will be the leading choice for organizations seeking highly talented human resource. SBE will foster internationalization with key stakeholders and actively work to exchange best practices with business schools across Pakistan through collaborations, workshops, conferences and other means.

### **Program Objectives**

1. To hone participants' abilities through a well-developed and diversified program designed to equip graduates with essential leadership skills.
2. To develop participants' expertise in order to increase their resourcefulness in better decision-making.
3. To prepare participants for steering an organization through the difficult and turbulent global and domestic environment and enable the development of an implementable strategic business plan that not only addresses the financial but social and environmental issues as well.
4. To produce students who have well-rounded entrepreneurial skills - who not only have great ideas, but can also make things happen by starting their own ventures.
5. To enhance the proficiency of the students and groom them to deal with the complex business situations.

### **Course Objectives**

To successfully manage today's complex supply chains, managers and entrepreneurs need an understanding of traditional business functions and the linkage of these functions to customers and suppliers. They must understand not only the processes that drive their own organization, but also those that direct suppliers' and customers' businesses.

Supply chain management involves the integration of business processes across organizations, from material sources and suppliers, through manufacturing and processing, to delivery to the final consumer.

Managing Sustainable Supply Chains course focuses on the systems approach of managing the inputs and outputs within the various entities of a supply chain, leading to this process being socially, environmentally, and economically sustainable. Students will develop an in-depth understanding of issues involved in effective design and management of the supply chain, resulting in enhanced competitiveness for organizations.

### **Learning Outcomes**

After successful completion of this course, students will be able to:

1. Gain an appreciation for the complexities of local and global supply chains—in modeling, measuring, implementing, and understanding their contribution to

strategy and firm performance

2. Understand the barriers, bridges and benefits of effective supply chain management
3. See how the information technology is fundamentally changing the nature of supply chain management at both strategic and operational levels
4. Realize why the functions of purchasing, manufacturing, logistics and information management must all work together, with finance, engineering and other functions in order to enhance the competitiveness of the supply chain
5. Understand the issues of environmental and social sustainability of global supply chains
6. Identify and resolve ethical issues in supply chain management

### **Teaching Methodology**

Following instructional tools and methodologies will be utilized during the course:

Interactive Class Discussions	Skill Development Exercises / Quiz	Videos
Case Studies	Presentations	Guest Speaker
Business Simulations /Games	End Term Exam	Industry based projects

## **MANAGING SUSTAINABLE SUPPLY CHAINS (OS617) CLASS POLICY**

### **1- STUDENTS ARE REQUIRED TO READ AND UNDERSTAND ALL ITEMS OUTLINED IN THE PARTICIPANT HANDBOOK**

#### **2- ATTENDANCE**

- ***Be On Time***

You need to be in class at the assigned time. You will be marked absent if you are not present at the time of marking attendance at the start of the class.

- ***Class Attendance Policy***

A minimum of 80% attendance is required for a participant to be eligible to sit in the final examination. Being sick and going to weddings are absences and will not be counted as present. You have the opportunity to use 6 absences out of 30 classes. Participants with less than 80% of attendance in a course will be given grade 'F' (Fail) and will not be allowed to take end term exams. International students who will be leaving for visa during semester should not use any days off except for visa trip. Otherwise they could reach short attendance.

#### **3- MOBILE POLICY**

**TURN OFF YOUR MOBILE PHONE!** It is unprofessional to be texting or otherwise. Your phone should not be visible or heard during the class sessions.

#### **4- EMAIL**

**READ YOUR EMAILS!** You are responsible if you miss a deadline because you did not read your email.

You should regularly check your university emails accounts and respond accordingly.

#### **5-WITHDRAW POLICY**

Students may withdraw from a course till the end of the 12th week of the semester. Consequently, grade W will be awarded to the student which shall have no impact on the calculation of the GPA of the student. A Student withdrawing after the 12th week shall be automatically awarded "F" grade which shall count in the GPA.

#### **6- MOODLE**

UMT-LMS (Moodle) is an Open Source Course Management System (CMS), also known as a learning Management System (LMS). Participants should regularly visit the course website on MOODLE Course Management system, and fully benefit from its capabilities.

If you are facing any problem using Moodle, visit <http://oit.umt.edu.pk/moodle>. For further query send your queries to [moodle@umt.edu.pk](mailto:moodle@umt.edu.pk)

### **7- HARASSMENT POLICY**

Sexual or any other harassment is prohibited and is constituted as punishable offence. Sexual or any other harassment of any participant will not be tolerated. All actions categorized as sexual or any other harassment when done physically or verbally would also be considered as sexual harassment when done using electronic media such as computers, mobiles, internet, emails etc.

### **8- USE OF UNFAIR MEANS/HONESTY POLICY**

Any participant found using unfair means or assisting another participant during a class test/quiz, assignments or examination would be liable to disciplinary action.

### **9- PLAGIARISM POLICY**

All students are required to attach a "Turnitin" report on every assignment, big or small. Any student who attempts to bypass "Turnitin" will receive "F" grade which will count towards the CGPA. The participants submit the plagiarism report to the resource person with every assignment, report, project, thesis etc. If student attempts to cheat "Turnitin", he/she will receive a second "F" that will count towards the CGPA. There are special rules on plagiarism for final reports etc. all outlined in your handbook.

### **10- COMMUNICATION OF RESULTS**

The results of quizzes, midterms and assignments are communicated to the participants during the semester and answer books are returned to them. It is the responsibility of the course instructor to keep the participants informed about his/her progress during the semester. The course instructor will inform a participant at least one week before the final examination related to his / her performance in the course.

**COURSE OUTLINE**  
**OS617: MANAGING SUSTAINABLE SUPPLY CHAINS**

Program	MS / MBA-P / MBA-Ev. /MBA-Ex
Credit Hours	3
Duration	15 Weeks (3hrs / week)
Prerequisites (If any)	Operations Management

**Grade Evaluation Criteria**

Following is the criteria for the distribution of marks to evaluate final grade in this course.

<b>Instruments</b>	<b>Weightage</b>
Quizzes (3-4 quizzes)	10%
Case Analysis and Presentation (3-4 sessions)	20%
Supply Chain Game – Role Play (1 session)	5%
Supply Chain Video	5%
Class Participation (every lecture class) + Attendance	10%
Project (meetings with teacher to discuss progress)	20%
One group meeting with professor for 10-15 min with <b>quantified output</b> will reward 2 absolute marks. A max of 10 absolute marks can be achieved by a group.	
Final Exam (due on 16 <sup>th</sup> or 17 <sup>th</sup> week)	30%

**TEXT BOOKS AND SUPPLIES**

- a) Articles, case studies and chapter materials in the form of ppts.
- b) Supply Chain Management 7th Edition (2018) by Chopra & Meindl

**SUPPLEMENTARY MATERIAL**

- a) *Supply chain management: from vision to implementation* by Stanley E. Fawcett, Lisa M. Ellram & Jeffrey A. Ogden (1<sup>st</sup> Ed.), Prentice Hall
- b) *Business Logistics & Supply chain management* by Ronald H. Ballou, (5<sup>th</sup> Ed.) Prentice Hall
- c) *Logistics and supply chain management* by Martin Christopher, (5<sup>th</sup> Ed.), Prentice Hall

- d) Principles of supply chain management, A Balanced approach by Joel D. Wisner, G.Keong Leong, Keah-Choon Tan, Thomson-Southwestern publishers.

### **Important Material for Class**

It is suggested to bring the following to every class:

1. **Textbook**
2. **Calculator**

### **QUIZZES**

1. A total of 3- 4 quizzes will be conducted
2. Quizzes may be announced or un-announced (surprise)
3. From a total of (n) quizzes, best (n -1) quizzes may be considered for the final grade
4. Make-up quizzes will not be allowed

### **CASE ANALYSIS AND PRESENTATIONS**

1. You will be required to work on 4 - 5 case studies related to supply chain management areas and give presentation for your case analysis along with report submission.
2. All the case analysis and presentation will be conducted in teams
3. No make-up cases will be allowed.

### **PROJECT**

1. The format of Project assessment would be a formal submission of 4 reports by every group at the 5<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup> and 11<sup>th</sup> session of the semester. All reports will be marked separately.
2. Students would be graded on their performances based on the performance during project meetings / viva voce examination. One full group meeting with instructor results in 1 absolute mark to whole group.
3. A written report of the Final version of Project analysis would also be submitted by the students.
4. Objectives of the project are as follows:
  - a) To analyze the end-to-end supply chain of any one of the following sector, abiding by the generalized supply chain model by Bowersox.
    - a. Leather supply chain
    - b. Textile supply chain
    - c. Perishable goods supply chain
    - d. Footwear supply chain
    - e. Cement supply chain

- f. Computer supply chain
  - g. Pharmaceutical supply chain
  - h. Packaging supply chain
- b) To identify the downstream and upstream activities along with the explanation of various flows throughout the supply chain i.e. material flows and information flows taking into account all symbols of flow charts using Microsoft Visio as a software.
- c) To draw the supply chain process maps of the respective sector using supply chain process mapping tool i.e.
- i. pipeline mapping,
  - ii. value stream mapping,
  - iii. process activity mapping and
  - iv. order fulfillment mapping,
  - v. value chain analysis
- Highlighting processes & value in terms of time throughout the supply chain
- d) To identify the gaps in terms of supply chain problems and finally submitting comprehensive recommendations based on action plans.

## **TERM PAPER**

1. Students of MS SCM program, divided in groups of 1-2 students, will have to write a term paper on one of the following topics
  - How can Big Data Analytics be utilized in sustainable management of supply chains?
  - How can Internet of Things (IoT) be utilized in sustainable management of supply chains
  - Services supply chains and sustainability
  - Socially responsible supply chains
  - Supply chain analytics
  - Supply chain finance
2. The topic has to be discussed and approved from the resource person.
3. The category can be literature review but not limited to it, and must follow Harvard style of referencing.
4. Last date for the submission of the term paper is the end of 11<sup>th</sup> week.



## **GUIDELINES FOR WRITING A TERM PAPER**

The term paper should follow the below mentioned headings.

- 1- Structured Abstract (emerald style)
- 2- Introduction and significance of the topic
- 3- Research questions
- 4- Current study and literature review
- 5- Analysis and discussion
- 6- Conclusion and recommendations for future research
- 7- References

### **Further guidelines regarding Term Paper**

**Introduction** should describe the overall significance of the topic, why do you think the topic is very important.

**Current study / Literature Review** should describe the details of every component of the topic from the literature. Citations should be given frequently. Overall emphasis should be to find the gaps in the literature that compelled you to select the topic. Moreover if there are any models or frameworks that have already been worked on, should also be a part of the literature review.

Specific emphasis should be given to **synchronize** the concepts while explaining them.

**Discussion and Analysis** should contain thorough and detailed analysis of the literature review and its models and if required some comparisons can be made. The discussion part should come up with the important findings of the review and comparisons and should correlate with the research questions and conceptual framework.

**References** should be numbered in the alphabetical order.

**Plagiarism** should be avoided completely. While quoting any reference the lines should be completely paraphrased, otherwise it would be considered your own thoughts.

A **similarity index report** should also be submitted along with the term paper. One third of the marks are allocated to the **meetings and discussions** regarding term paper before submitting.

### **TIME LINE for research paper TO BE FOLLOWED STRICTLY**

After discussions in groups, topic and group members to be finalized and submitted by **week 2**

Introduction and literature review to be completed and submitted by **week 7**

Discussion and Conclusion along with recommendations to be completed and submitted by the end of **week 9**

Term paper to be shaped in the final format and submitted by the end of **week 10**

Final edited and improved version along with references to be submitted by the end of **week 11**

### **CLASS PARTICIPATION**

1. You are required to attend the classes regularly and with punctuality
2. You should come fully prepared in each class, and participate actively in class activities

### **END-TERM EXAM**

1. End-Term Exam will be comprehensive

**Semester FALL 2019**

<b>Sr.#</b>	<b>Topics to be covered in the course</b>	<b>Learning objective of this topic</b>	<b>Link with course learning objectives</b>	<b>Teaching method</b>	<b>Assessment criteria</b>
1.	Introduction of supply chain management, supply chain strategy, value chains, levels of SCM, core processes of SCM, challenges, generalized supply chain model	Students will learn about the basics of supply chain management and understand its significance in the today's manufacturing and service organizations	Associated with point no. 1	Lecture, Class discussion, video clips	Class participation
2.	Aligning strategies and process with system, choosing the right supply chain strategy, achieving strategic fit, Responsive and Efficient supply chains, Balancing the supply with demand, position in supply chains, drivers of supply chain	Understanding the basics of supply chain design	Associated with point no. 1, 2	Lecture, Class discussion, video clip	Class participation, quiz
3.	Bullwhip effect, demand collaboration strategy, Collaborative Planning forecasting and replenishment (CPFR) model, Order cycle, Order fulfillment process, managing the physical flows, logistical element in the supply chains, SC mapping continued.	Understanding the basics of supply chain design, Understanding the significance of information flows in the supply chains	Associated with point no. 1, 2 Associated with point no. 3	Lecture, Class discussion, video clip	Class participation, quiz
4.	Accurate response, Efficient and Responsive supply chains, demand uncertainty	Students will learn, how to design distribution networks according to different responses required by the customers	Associated with point no. 1, 2	Case study Presentations	Class participation, case study assessment sheets
5.	Demand collaboration, role of ICT in supply chain and supply chain	To understand the solution of bull whip	Associated with point no. 1, 2, 3, 4	Case study Presentations	Class participation,

	mapping	effect created in the industries			case study assessment sheets
6.	Supply Chain Game Session –	Application of demand collaboration strategy	Associated with point no. 3 and 4	Role play	Case analysis, presentation and report submission
7.	Product availability, Appraisal of Inventories, Multi-Echelon Inventories, Virtual Inventories, Push Inventory Control,	Learn the significance of supply chain inventory management.	Associated with point no. 1, 2, 3, 4	Lecture, Class discussion, Numerical questions (mathematical)	Class participation, quiz
8.	Single Order Quantity, Advanced Pull Inventory Control, Risk pooling	Learn the significance of supply chain inventory management at a higher level	Associated with point no. 1, 2, 3, 4	Lecture, class discussion, numerical questions (mathematical)	Class participation
9	Advanced topics in supply chain Big Data Analytics, Internet of Things, Supply Chain Analytics, Supply Chain Finance, Services Supply Chains, Sustainable Supply Chains	Learn the significance of advance topics in supply chain	Associated with point no. 1, 2, 3, 4	Lecture, class discussion	Class participation
10.	Supplier relationship management, Supply base optimization, shifting roles, total cost of ownership, and concept of strategic cost management.	Learn the importance of other business entities in supply chain	Associated with point no. 2 and 3	Case study Presentation	Class participation, case study assessment sheets
11.	Role of aggregate planning in supply chains. aggregate planning, Designing the distribution network	Learn the significance of aggregate planning in the supply chain management	Associated with point no. 1, 2, and 4	Lecture, class discussion, numerical questions (mathematical)	Class participation Quiz
12.	Information sharing, connectivity through IT, ERP, E-commerce,	To understand the significance of	Associated with point no. 3 and 4	Case study Presentations	Class participation,

	relationship management, transactional relationships, coordination in supply chains.	information flows and its impacts on supply chain performance			case study assessment sheets
13.	Performance measurement, benchmarking the supply chains, SCOR model and aligning incentives	Understanding the importance of measuring the performance of supply chains on continuous basis	Associated with point no.1, 2, 3, 4	Case study Presentations	Class participation, case study assessment sheets
14.	Transport fundamentals, VMI, Cross docking	Learn the importance of other business entities in supply chain	Associated with point no. 2 and 3	Lecture, class discussion, numerical questions (mathematical)	Class participation
15.	Performance measurement continued. Benefits, Pitfalls, Limitations, trends and future of supply chain management, Assessment of supply chains	To finally understand the application of supply chain as a whole	Associated with point no. 4	Lecture, Class discussion, article discussion	Class participation