IB365 OPERATIONS MANAGEMENT AND GLOBAL SUPPLY CHAINS
IES Abroad Vienna

DESCRIPTION:
Along with finance and marketing, operations management is one of the three core functions of any business. This course introduces the two pillars of operations management: managing production and managing global supply chains. Modern production management refers to the production of goods and the delivery of services in the most cost-effective manner to meet the needs of increasingly demanding customers. Supply chain management refers to the physical activities and the information and financial systems that enable customers' needs to be met quickly and cost-effectively. In the modern business world, "lean production" and "total quality management" have become 21st century management jargon, while the COVID pandemic has highlighted the critical role of global supply chains in modern post-industrial societies. In this course, students learn about the major theories relating to operations and supply chain management and match theoretical findings with case studies. The course is structured to look at procurement and production, distribution, and logistics from an integrated perspective, and to introduce students to the use of modern IT tools to analyze and simulate operations and supply chains. In addition, the course discusses the impact of the technological, geopolitical, and societal changes of the 2020s on operations management. The course is designed for business students with one or two introductory courses in business/management, accounting, logistics and marketing, as well as for students majoring in economics, international relations, politics, and cultural studies who are interested in the economic underpinnings of a modern globalized society.

CREDITS: 3

CONTACT HOURS: 45

LANGUAGE OF INSTRUCTION: English

PREREQUISITES: None

METHOD OF PRESENTATION:
This course will include lectures, case studies, group discussion, student presentations, and a site visit to industrial production plants in Central Europe (e.g., Volkswagen plant in Bratislava) for students to gain firsthand experience of operations and international supply chains.

REQUIRED WORK AND FORM OF ASSESSMENT:
- Course participation - 10%
- Topic presentation - 30%
- Midterm exam - 25%
- Final exam - 35%

Topic Presentation: and/or Reports
Students will hold a topic presentation:) during class time. The topic will be based either on a chapter of the textbook or on assigned reading material and will cover the most important concepts relating to the chosen topic. Depending on class size presentation will be held alone or in small groups (2-3 students). Students shall use media sources or recently publish scholarly literature, to confront standard textbook content with real events (e.g., consequences of COVID 19 and the Ukraine war for global supply chains)
- Each presentation is 40-45 minutes long and includes a question-and-answer period.
- The objectives of the presentation are:
    - Understanding the specific topic and its application in global operations and supply chain management;
    - Summarizing chapter contents and sharing this information with others;
    - Practicing public speaking and discussion moderation;
    - Using academic research skills to effectively summarize important information;
    - Presenting content concisely, within a given timeframe;

- Identifying potential improvements in business processes; and
- Using a presentation tool such as PowerPoint or Prezi, which must also be submitted electronically.

Midterm Exam
The midterm exam (60 minutes) consists of 4-6 short development questions based on class lectures and assigned readings.

Final Exam
The final exam (120 minutes) consists of 4-6 short development questions and a short essay (500 words) based on class lectures and assigned readings.

Course Participation
Active participation in class discussions is expected. A rubric for participation will be posted on Moodle.

LEARNING OUTCOMES:
By the end of the course, students should be able to:

- Explain how value is created by operations and supply chains and how it is distributed to individual actors in the value chain.
- Describe modern production concepts like Just-In-Time production (JIT)Total Quality Management (TQM) and Industry 4.0.
- Identify the most important drivers in a supply chain like facilities, inventories, and transportation systems.
- Model operational systems and supply chains with modern simulation software.
- Conduct a detailed analysis of a business case relating to operations and supply chain management that involves identifying challenges and possible solutions.
- Demonstrate how global operations and supply chains are embedded into political, and economic, and regulatory environment.
- Recognize the role of supranational institutions like the European Union and international regulatory frameworks like the WTO for global operations and supply chains.

ATTENDANCE POLICY:
IES Vienna requires attendance at all class sessions, including field study excursions, internship meetings, scheduled rehearsals, and all tests and exams. Attendance will be taken for every class. If a student misses more than the equivalent of a week of classes without an excuse, the final grade will be reduced by one-third of a letter grade (for example, A- to B+) for every additional unexcused absence.

Missing Mandatory Fieldtrip Outside of Regular Class Hours
Some classes include mandatory trips outside of regular class hours, i.e., on weekends. Students will be made aware of the specific dates of such trips at the latest during the first week of class. Missing a mandatory field trip for reasons other than a health or medical emergency will automatically result in a reduction of the final grade by a third of a letter grade.

Excused absences are permitted only when:

1. A student is ill (health issues),
2. When class is held on a recognized religious holiday traditionally observed by students, or
3. In the case of a grave incident affecting family members.
4. Exceptions may be made for conflicting academic commitments, but only in writing and only well in advance of missed class time.

Any other absences are unexcused.

CONTENT:

Week	Content	Readings & Assignments
Week 1	**Introduction to Operations and Supply Chain Management (SCM)** 1. Introduction of Participants, presentation of course content and requirements 2. Discuss the goals of operations management and explain the impact of decisions on operations and supply chains on the success of the firm 3. Identify the three operational decision phases (strategic design, tactical planning, operation) Define the key processes in operations and supply chain management (procurement, inventory, manufacturing, distribution) Class discussion: Supply chains as sources of strategic advantage in global competition, introduction into supply chain management based on "The Beer Game" (Classical management simulation game designed by MIT)	Student introductions; overview of course requirements and expectations Readings: • Chopra S.; Meindl P. (2016) Supply Chain Management, Chapter 1, Understanding the Supply Chain pp 13-29 • Bowersox D. (2009), Supply Chain Logistics Management, Chapter 1, 21st Century Supply Chains, pp 8-38 • Heizer J, (2019) Operations Management, Sustainability and Global Supply Chains, pp 61-85
Week 2	**Operations and Competitive Strategy** 1. The role of operations and supply chains in the overall competitive strategy of the firm 2. How do companies integrate operations into their business strategy? Strategic challenges for operations and supply chain management Class Discussion: Supply chains and competitive strategy based on case study (Volkswagen 2025)	Class Discussion based on: • Chopra, Meindl P (2016). Supply Chain Management, pp 31-51 • Porter M. (1980), Competitive Advantage, pp 25-56 • Porter M. (1980), Competitive Advantage, pp 63-96
Week 3	**Drivers and Metrics in Operations and SCM** 1. Identify major drivers of supply chain performance (facilities, inventory, transportation, sourcing, pricing) 2. Define key metrics that measure the performance of each driver	Class discussion based on: • Chopra S., Meindl P. (2016) Chapter 3 Supply Chain Drivers and Metrics pp. 52-80 • Bowersox D. (2009) Chapter 2 Supply Chain Information Technology, pp 41-69
Week 4	**IT-Tools for Operations and SCM** 1. Administrative Systems (ERP)	Topic presentation on IT-Tools and modern simulation techniques for operations and supply chains Readings:

	2. Introduction to modern simulation techniques (System dynamics, discrete events, agent-based modelling) 3. Construction of digital twins for supply chains and operations Class discussion: How to use IT-tools for the analysis and simulation of operations and supply chains	• Sterman, J. (2009), Business Dynamics, Chapter 1, Learning about complex systems, pp 3-39 • Sterman, J. (2009), Business Dynamics, Chapter 2, System Dynamics in Action, pp 41-81
Week 5	**Midterm exam/ Global Supply Chain Networks** 1. Midterm exam 2. Motivations for companies to build global supply chains 3. Risk factors in global supply chains 4. Risk mitigation strategies in global supply chains 5. Geopolitical Factors in global supply chains Class Discussion: European Energy Supply Chains	Topic presentation on global supply networks Readings: • Chopra S. Meindl P. (2016) Chapter 6 Designing Global Supply Chain Networks pp. 154-188 • Bowersox D. (2009), Chapter 10, Global Supply Chains pp 250-278 • Ivanov et.al, (2021), Chapter 15 Supply Chain Risk, Management and Resilience Midterm test (45 min)
Week 6	**Modern Production Management** 1. Lean Production: Toyota and the Just-In-Time-Concept 2. Total Quality Management: The TQM approach, Business Process Reengineering and the Six Sigma concept 3. Digitalization and Industry 4.0. Class Discussion: Trends in modern production management	Topic presentation on the principles of modern production management Readings: • Heizer. (2019, Principles of Operations Management, pp 67-96 • Heizer J. (2019), Managing Quality, pp 245-276 • Heizer J. (2019), Process Strategies, pp 311-339 • Saxena (2022), Digital Supply Chain Management, Chapter 1 Impact of Covid 19 on SCM, pp. 1-31 • Helmhold, M. et al. (2021), Supply Chain Risk Management Chapter 6 Lean Supply Chains and Lean Production, pp. 105-128
Week 7	**Organization and Leadership in Operations Management** 1. Organizational Design for Operations 2. Motivational Theories and Incentive Systems 3. Organizational Learning and Change Class Discussion: How to design effective organizational structures	Topic Presentation on effective management structures of global operations Readings: • Jones G.R (2013)., Organizational Theory, Design and Change pp 23-50 • Jones G.R. (2013) Organizational Theory, Design and Change, pp 301-347

		• Helmhold, M. et.al. (2021) Supply Chain risk Management, Chapter 5, Cultural Elements in SCRM pp. 91-105
Week 8	**Site Visit** Study trip to the Volkswagen production plant (Bratislava) German car manufacturers and their supply chains in the European Union (alternatively VOEST-Alpine , Linz (Austria)	
Week 9	**Sourcing and Location Strategies** 1. The Role of Sourcing in supply chains 2. The Outsourcing decision 3. Procurement and Supply strategies 4. Location strategies (Greenfield analysis) Class Discussion: Sourcing in a (post) globalized economy	Topic Presentation on effective sourcing and location strategies in a (post)-globalized economy Readings: • Chopra S. Meindl P. (2016) Chapter 15 Sourcing decisions in supply chains pp 445-477 • Bowersox D. (2009), Chapter 6, Procurement and Manufacturing, pp 155-189 • Heizer, Location Strategies, pp 369-390 • Related media sources
Week 10	**Sustainable Operations and Supply Chains** 1. Supply Chains and the discussion on a sustainable economy 2. Key Pillars of Sustainability 3. Supplier relations in “Green” Supply Chains Class Discussion: What does sustainability mean?	Topic presentation on sustainable supply chains and the influence of climate policy on SCM. Readings: • Chopra/Meindl (2016) Chapter 17 Sustainability and the Supply Chain pp 504-520 • Helmholtz et.al. (2021), Supply Chain Risk Management, Chapter 11, Sustainability and Corporate Social Responsibility pp. 255-263 • Heizer J. (2019), Sustainability in a Supply Chain, pp 225-238 • Media sources, essays and scholarly articles on the topic
Week 11	**Preparatory Week for Final Exam** Class discussion: Global operations and supply chains in face of the recent crisis of the globalized economy. Lessons learned from the COVID 19 and recent geopolitical developments	• Short John (2022), Geopolitics pp. 53-81 • Media sources, recently published essays and scholarly articles relating to the topic
Week 12	**Final Exam**	

COURSE-RELATED TRIPS:

- VW-Audi production sites in Györ, Hungary and/or Bratislava, Slovakia (if available). Alternatively, VOEST-Alpine production site, Linz, Austria.

REQUIRED READINGS:

- Bowersox, Closs and Cooper, Supply Chain Logistics Management (3rd Ed,) McCraw Hill/Irwin, 2009.
- Chopra, Sunil and Peter Meindl. Supply Chain Management. Strategy, Planning and Operation. Pearson, 2016.
- Heizer, Jay et.al. Operations Management, Sustainability and Global Supply Chains (13. ed.). Pearson, 2019. Chapters 1-2, 6-8,12, 16.
- Jones, Bouncken. Organizational Theory, Design and Change. New York, 2007.
- Porter, Michael. Competitive Advantage. Cambridge, Mass., 1980. Chapter 1-2.
- Sterman, John. D. Business Dynamics. Systems Thinking and Modeling for a Complex World. New York, 2000.
- Dimitry Ivanov, Alexander Tsipoulanidis, Jörn Schönberger, Global Supply Chain and Operations Management (Berlin 2021),
- Saxena J.P. Digital Supply Chain Management: Driving Resilience in Supply Chains Post Covid-19, Chapters 3 and 4
- Helmold et.al., Supply Chain Risk Management (Berlin 2021) Chapters 10,11 and 13
- Short John R. Geopolitics. Making Sense of a Changing World (New York 2022), , Chapter 3, pp.53-81

RECOMMENDED READINGS:

- de Loisy, Nicolas. Transportation and the Belt and Road Initiative. Hongkong, 2019.
- Drake, Matt. Global Supply Chain Management. New York, 2012.
- Forrester, Jay. Industrial Dynamics. MIT-Press, 1961.
- Friedman, Thomas L. The World is Flat. The Globalized World in the 21st Century. London, 2006.
- Hammer, Michael. Business Reengineering. New York, 1995.
- Handfield, R. Sourcing and Supply Chain Management. Mason, Ohio, 2009.
- Monczka, M., R. B. Handfield, L. C. Giunipero, and J. L. Patterson. Purchasing and Supply Chain Management. 2012, ISBN 978-0-538-47642-3.
- Porter, Michael. Competitive Strategy. Cambridge, 1983.
- ---. The Competitive Advantage of Nations. Cambridge, 1990.
- Simchi-Levi, D., P. Kaminsky, and E. Simchi-Levi. Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies. 3. Auflage. Boston 2008, ISBN 978-0-07-128714-2.
- Stadtler, H. and C. Kilger. Supply Chain Management and Advanced Planning: Concepts, Models, Software, and Case Studies. Berlin, 2014.
- Womack, James P. The Machine That Changed the World: The Story of Lean Production. New York, 1986.