

Addis Ababa Institute of Technology (AAiT)

School of Mechanical and Industrial Engineering

Course: Supply Chain Management (MEng 6102)

Gulelat Gatew (PhD)

Course Objectives:

After successfully completing the course students will

- Have an in-depth understanding of logistics and supply chain management
- Apply the concept of supply chain management to contemporary businesses, including the need to manage and plan supply chains within an overall business environment in an integrated manner
- Acquire the necessary technical knowledge relating to the key components of logistics and supply chain management
- Gain the analytical and managerial skills necessary to successfully apply this knowledge.

Course Content:

1. **Introduction to Supply Chains**
 - 1.1 Understanding the Supply Chain
 - 1.2 Supply Chain Performance
 - 1.3 Supply Chain Drivers and Obstacles
2. **Designing the Supply Chain Network**
 - 2.1 Designing the distribution network in a supply chain
 - 2.2 Network design in a supply chain
 - 2.3 Network design in an uncertain environment
3. **Role of Transportation and Information technology in a supply chain**
 - 3.1 Transportation in a Supply Chain
 - 3.2 Information Technology in a Supply Chain
4. **Planning Demand and Supply in a Supply Chain**
 - 4.1 Demand forecasting in a supply chain
 - 4.2 Aggregate Planning in a Supply Chain
 - 4.3 Planning Supply and Demand in the Supply Chain
 - 4.4 Planning and Managing Inventories in a Supply Chain
 - 4.5 Managing Economies of Scale in the Supply Chain
 - 4.6 Managing Uncertainty in a Supply Chain
 - 4.7 Determining Optimal Level of Product Availability

5. **Coordinating a Supply Chain**
 - 5.1 Coordination in a Supply Chain
 - 5.2 The Bullwhip effect
 - 5.3 Customer relationship management
 - 5.4 Supplier relationship management

6. **Issues of supply chain design and supply chain operations**
 - 6.1 E-Business and the supply Chain
 - 6.2 Supply chain implementations

Course Requirements:

- Reading assignments on each topic from different sources.
- Each student is required to write a paper on a given topic (to be assigned by the instructor) and present in the class.

Evaluation:

- Term Paper (50%)
- Final examination (50%)

References:

1. Chopra S. and Meindl P.; **Supply Chain Management: Strategy, Planning, and Operation (2nd Ed.)**; Prentice-Hall of India; New Delhi-2006
2. Daniel Kitaw; **Industrial Management and Engineering Economy: An Introduction to Industrial Engineering** , Addis Ababa University Press, 2009
3. Handfield Robert B. and Nicholas Ernest L.; **Introduction to Supply Chain Management**; Prentice-Hall of India; New Delhi-2006
4. Shay B.S., **Supply chain Management in the twenty –first century**, Macmillan Indian Limited, 2000.
5. John M. Nicholas; **Competitive Manufacturing Management**, Loyol University Chicago: new Delhi-2005
6. Bernard W. Tyloyr , **Introduction to Management Science**, fifth edition, Prince Hall , Englewood Cliffs, New Jersey 07632,1996.
7. Hamdy A. Taha, **Operations Research: An Introduction**, 6th Edition, New Delhi: Prentice- Hall of India, 2002.
8. J.K. Sharma, **Operations Research**, Macmillan India Ltd, Delhi, 1997.