4MEMS3 SUPPLY CHAIN MANAGEMENT – [5 credits]

Lecturers: Assist. Prof. Garret O Donnell (Garret.ODonnell@tcd.ie)

Semester: 1

Module organisation

The module runs for 12 weeks of the academic year and comprises three lectures and one tutorial per week (except the study week). Total contact time is 44 hours.

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<th>Start Week</th>
<th>End Week</th>
<th>Lectures per week</th>
<th>Lectures total</th>
<th>Tutorials per week</th>
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<td>1</td>
<td>12</td>
<td>3</td>
<td>33</td>
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Module Description

This module is designed to provide an overview of supply chain management from a business and managerial perspective for manufacturing engineers. This will enable the student to understand what a supply chain is, why it is important and the challenges in managing the supply chain. In keeping with the philosophy of the Engineering and Management program, there will be an emphasis on both written, oral communication and presentation skills that will contribute to the students’ ability to communicate effectively in cross-functional settings. Because supply chain management runs through the entire organization, the module will also contribute to the integration of other module work in the program. The specific aims of the module are:

- to consider an aspect of Supply Chain Management at a deeper level.
- to synthesize learning from other aspects of the Engineering with Management program and Mechanical Engineering.
- to sharpen analytical and critical thinking skills in cross discipline areas.

Learning Outcomes

On successful completion of this module, students will be able to:

1. List and describe the various components to the supply chain and the value chain as proposed by Porter.

2. Explain the technical and functional aspects of information flow in the supply chain including product tracking.

3. Consider issues that may impact the supply chain pertaining to the market environment.
4. Examine the supply chain of a partner company, analyse the performance, consolidate the company supply chain information and make recommendations toward best practice and beyond.

5. Consider aspects of the international supply chain, issues related to FDI in Ireland, ethical aspects of sourcing and purchasing

Module Content

- Introduction to Supply Chain Management
- Porters Value Chain
- Purchasing
- Product tracking
- Inventory Management
- The Value of Information
- Distribution Strategies

Module Notes

Web pages-blackboard-webCT
Selected research papers
Handouts from guest lecturers

Teaching Strategies

This module is typically a small group environment with approx 20 to 40 people participating. Hence the class forms the basis for discussion on topics, as well as more formal podium style lectures. Examples related in the class are often based on topical issues. Visiting lectures range from industry (Biomedical, SME’s, Energy, Consumer goods, Management Consultants, Retail) to visiting researchers on specialist topics (RFID, IoT). Group presentations on topics related to the industry project for shared learning. The assignment is a significant task on topics ranging from design of decision support tools, to benchmarking of supply chains in various industry sectors, contextualised with industry.

Assessment Modes
Written Exam (60%), assignment (40%)

Recommended Texts

- Designing and managing the supply chain, by Simchi-Levi, Kaminsky, Simchi-Levi

Additional reading

- Purchasing and Supply Chain Management, by Arjan van Weele.
- Logistics and Supply Chain Management, by Martin Christopher.

Laboratory

Technology demonstrations, e.g. RFID