SYLLABUS
Global Supply Networks & Manufacturing Culture in Latin America
Montevideo, May 16 – 30, 2010

Course description
The course provides students with the fundamentals of international supply chain methods with a special focus on Latin America and Uruguay.

It will feature a 2-week study visit to Uruguay where students can place their understanding of those concepts within a cultural context.

Course details
It is an optional 3-credit study abroad opportunity offered as a technical elective. The course involves significant teamwork and allows students to complete an in-depth analysis of the global supply networks and manufacturing culture in Latin America with Uruguay as a reference point.

The 2-week course consists of three parts:
- A component of lectures on supply chain management, logistics, applications to distributions centers, call centers, manufacturing. The lectures will be delivered in English at the Universidad de Montevideo (UM) by its faculty members.
- A field study component including company visits and sightseeing in Montevideo and other cities of Uruguay.
- A project group component. Each group will choose one of the companies that were visited and will focus on a problem or opportunity that the firm faces. The group must come up with a detailed solution or recommendation. This involves the writing and presentation of a research paper. Both business and engineering viewpoints related to the national and global industry in which it operates must be considered in the company visit component of the paper and in the presentation.

Students
The course has been designed primarily for delivery to engineering students, especially juniors and seniors, in any major: Industrial, Mechanical, Electrical, Civil, Computer Science, etc. It may also apply to business students. The mixed groups will allow students to learn from the diversity of cultures and modi operandi.

Faculty
Faculty members of Universidad de Montevideo are responsible for delivering the lectures, the visits to the firms, the projects and the evaluation of the students.

Program outline (see Appendix 1)

Schedule To be announced.

Evaluation:
The evaluation of student performance is based on three components:

I. Knowledge from lectures (40%)
There will be a written final exam covering the theoretical and practical topics delivered
through the lectures. The exam will be taken on Wednesday, 3rd week.

II. Global Engineering challenge report (20%)

Students should write a report entry on one of the following topics. Students should note that the suggested topics for these assignments match the main sections of the class project. As such, students should consider these assignments as an initial opportunity to consider and reflect upon issues and concerns that they will study and analyze in the final project.

Global / national environment: What interesting political, economic, social or technological factors affect the firm that you visited? Why are these factors of interest to a professional in business or engineering?

Industry analysis: Describe the industry of the firm that you visited. What are the major product categories in this industry and who are the firm’s major competitors? What unique challenges or opportunities exist for firms in this industry? Why is this industry of interest to a professional in business or engineering?

Firm analysis: What interesting strengths or weaknesses were discussed (or are apparent) in the firm that you visited? Does this firm face any interesting opportunities or threats from the external environment? Why is this firm of interest to a professional in business or engineering?

The report should include a reflection about one of the companies that were visited and is intended to compel students to make direct connections between what they are observing and experiencing on the trip and the types of issues and concerns they will face as professionals. These observations can be comparative (how the country is the same or different from the U.S.) and can include comments on day-to-day life, anecdotes, language, geography, stores, social life, the popular culture of the country, etc., but should have a connection on how this impacts your professional development. It must be submitted the day of the exam.

III. Project report (40%)

The report will consist of two components:

a) Group project report. Students working in groups of 3 or 4 on different projects must prepare a written report and submit it on Thursday of the last week in Montevideo. The written report should be about 5000 words, double spaced. The content of the project is described in the Appendix 2.

b) Oral Presentation. On Friday, before departing, student groups will make a 20-minute oral presentation, as a summary of the written report. A first draft of the PowerPoint slides must be submitted to the professor on the day before. A hard copy of the final version of the slides is due the day of the presentation at the time you present. Students will receive both an individual and group grade for the presentation.

Each student will also evaluate their individual group members to determine what percentage of the group writing and power point assignments was done by each member. Final Group report grades will then be distributed based on these percentages.

It is recommended that students make a presentation at their home university when they
come back, for the benefit of the rest of the students.

Appendix 1
Detailed Program Outline 2010

I. Introduction

Session 1: Introduction to Global Supply Networks.
Role and importance of manufacturing. Materials management.
Manufacturing processes. Planning hierarchy.

II. Fundamentals of production planning and manufacturing


Session 4-5: Master planning. Manufacturing planning and control.
Making the production plan. Developing a make-to-stock.


Session 7-8: Capacity management. Capacity planning process.
Capacity requirements planning.

Session 9: Production activity control. Scheduling. Control. Capacity management and PAC.

Session 10: Inventory fundamentals. Introduction to inventory.
Aggregate inventory management. Inventory costs.
Financial statements and inventory.


III. Logistics and supply chain management

Session 12-16: Simulation.


IV. Logistics and supply chain management in practice

Session 19: Warehouse design: layout, infrastructure and equipment.

Session 20-21: Warehouse operation: receiving, addressing, picking and delivering.


Session 23: Technology applications: bar code, radio frequency ID, warehouse management system, automatic routing system.

V. Logistics and supply chain management practices in Uruguay

Company visit 1: A cellulose mill - UPM Plant in Fray Bentos

Company visit 2: A container terminal - Montecon

Company visit 3: A free trade zone and a distribution company - Zonamérica and Costa Oriental

Company visit 4: A LPG bottling and distribution company - Riogas