Global Executive Ph.D. Track in Industrial Engineering

http://engineering.wayne.edu/ise/get/index.php

IE 8944: From Launch through Sustainability: Products & Services—Part II (2 Credits)

Course Syllabus - Fall 2013

Instructor(s): Drs. Ratna Babu Chinnam and Alper Murat
Industrial & Systems Engineering Department

Classroom: MEB Room 2062, 4815 Fourth Street, Detroit, MI 48202 (ISE Department Conference Room)
Contact: Overall: 313.577.9665 (Voice); 313.577.8833 (Fax); execphd@wayne.edu; See individual modules for more info.
Offices: 4815 Fourth Street, Detroit, MI 48202
Office Hours: See individual modules.
Web Site: http://blackboard.wayne.edu

Prerequisites: Executive Ph.D. Track Candidate

Software: None.

Web Site: PowerPoint Slides, articles, handouts, syllabus, answers to homework, and online access to grades are available on http://blackboard.wayne.edu. Additionally, announcements will be posted on Blackboard and emailed out to the email addresses registered on Blackboard.

Program Mission: To provide the opportunity for working executives to combine real-world experience with academic skills to create a new class of technical leaders who embrace integrative thinking, are globally aware, and are capable of producing sustainable value to any organization throughout the world.

Course Objectives: This Executive PhD track core course provides you the opportunity to thoroughly integrate knowledge, theory, and information from every aspect of the decision and management process that a business goes through in launching products and services and sustaining profitability. It also provides you with an excellent avenue to see the broader scope of operations and the consequences of these decisions and actions.

This course examines the time when the product is fully developed to all the steps involved and necessary to make the product sustainable. Course scope: Supply, Manufacturing, Distribution, Sales, Service, and Recycling. Product services are explored and what a business has to do keep value and improve profitability. This integrated course attempts to provide a framework of leadership principles, best practices, and optimized management methodology of key strategic and operational concepts critical to successful, globally integrated product and service operations. We will study product and service processes with a focus on profitability, life-cycle management, and sustainability. This module will include the integrated and interdependent needs related to sustainable, continually improving processes and operations. We will study how global world class companies accomplish their functions in a manner that provides responsibility for the protection of the environment and the good and welfare of humanity.

The course is developed with a set of core principles. The relevant core principles will be examined in each module and serve as a theme for the course. The principles are human infrastructure, value creation, clock speed, robust & capable processes, balanced and level workflow, and culture. This will give you better cross functional collaboration which can lead to an accelerated product development process and improved planning efforts.

This core course will be team taught in a novel and holistic way by a group of faculty from engineering, business, anthropology, and industry leaders. The courses will also involve leading academic and industrial experts from around the globe as guest speakers on a variety of topics.

The total course is split into two parts for convenience (IE8943 and IE8944), carrying a total of 5 credits.

Approach: The Industrial and Systems Engineering Department is taking an integrated approach to the curriculum for the Global Executive Ph.D. Integration in teaching and learning is derived from a systems perspective on both content and delivery that involves students and teachers together in co-creating an educational experience. Students will bring years of experience to the classroom and an eagerness to learn new approaches to real-world business issues in a global economy. Teachers will contribute integrative models and knowledge from contemporary theory and research to work with students in framing problems and developing applied approaches to solving them.
Adopt a modular approach to incorporate functional and specialized knowledge into a holistic and systems-based view of each major topic or course, drawing upon the expertise of development and delivery team members as needed and incorporating the key principles into each module topic.

Course Format:
The course is divided into modules. Each module will be led by a team of academic and industrial faculty and will involve: Case studies, Benchmark companies, Guest speakers, Assignments, Text/readings (100+ pages), Studying service sector and sustainability aspects, Review of recent dissertations, and Identification of potential research areas.

Course Modules:
The modules map processes from Product Launch through Sustainability Efforts. IE8943 covers the following modules:

- Product/Service Launch Readiness (Lead: Dr. Ratna Babu Chinnam)
- Facilities Planning (Lead: Industry Speaker)
- Factory Physics & Production Control (Lead: Dr. Ratna Babu Chinnam)
- Lean, Flexible, and Agile Manufacturing (Lead: Dr. Ratna Babu Chinnam)
- Global Supply Chain Management: Core Concepts and Best Practices (Leads: Dr. Ratna Babu Chinnam and Dr. Alper Murat)
- Sustainability (Lead: JohnPaul Kusz, Associate Director-Center for Sustainable Enterprise, Illinois Institute of Technology, Chicago)

IE8944 will cover the following topics:

- Supply Chain/Network (Re-)Design (Leads: Dr. Alper Murat and Dr. Ratna Babu Chinnam)
- Supply Management (Leads: Dr. Ratna Babu Chinnam and Dr. Alper Murat)
- Logistics, Distribution & Collection (Leads: Dr. Ratna Babu Chinnam and Dr. Alper Murat)
- Service & Customer Relationship Management (Leads: Dr. Ratna Babu Chinnam and Dr. Alper Murat)

Text Books:
Few books might be part of the course. Given the nature of the course, the book list is dynamic and actual details will be revealed in individual semesters.

References:
A variety of engineering and business articles and case studies from such sources as Harvard Business Review, Management Science, and Sloan Management Review will be made available through the course website for individual modules. The list is too large and dynamic to be provided in the syllabus.

Reading Assignments:
The reading assignments will help you better understand the material covered in class. Read the assigned material prior to class discussion.

Case Studies:
Teams of students will have to summarize several cases and suggest solutions to issues raised by the case. Most case studies, as is the case with many problems in the real-world, do not necessarily have a single best solution. All solutions tend to involve tradeoffs. You are responsible for addressing the issues raised in a holistic and integrated way. All case study reports are expected to be typed and the typical report will be 8 to 12 single spaced pages. The issues/questions to be addressed are posted on the course website.

Integration Project:
Individual learning partners will systematically and comprehensively evaluate a “distressed” company of their choosing with regard to how well the company is managing the functions of sourcing, purchasing, manufacturing, distribution, sales, service, and end-of-life support/disposition (collection, reuse, remanufacturing, and recycling). Given that the project scope is limited to “Launch through Sustainability”, focus should be on companies that manufacture and/or distribute/sell product/services and not on companies that are mostly into R&D and/or production design/development. While the project may not touch upon all topics/modules covered in the Launch through Sustainability Course (IE8943 and IE8944), it is expected that the analysis would involve comparison of the performance of the target company with market leaders in that business segment. Factors such as core competency management, supply management efficacy (in terms of cost, quality, risk management, collaborations, relationships), manufacturing productivity (cost, quality, productivity, flexibility, agility), distribution and logistics management (e.g., employment of 3PL or 4PL solution providers), customer relation management, demand-supply management (e.g., channel supply responsiveness, ability to support build to order, use of advanced planning systems), market share, rate of innovation, sustainability, and financial performance are expected to be studied. Individuals are expected to offer some concrete recommendations and an actionable draft turnaround plan for the target company with strong justification and rationale for the recommendations.

It is expected that most of the information necessary for carrying out the analysis will come from public domain sources (including target company website). Assuming that the company is a U.S. publicly traded company, quarterly and annual reports submitted to the U.S. Securities and Exchange Commission (SEC) will be particularly valuable (http://www.sec.gov/edgar/searchedgar/webusers.htm). Corporate financial statements (Income Statement, Balance Sheet, Cash Flow), Corporate News & Info (Headlines, Financial Blogs, Company Events, Message Boards), Company
Profile (Key Statistics, Competitors, Industry), Analyst Coverage (Analyst Opinion, Analyst Estimates, Research Reports), Ownership Info (Major Holders, Insider Transactions) can all be good sources of information. Much of this type of information is available from such websites as Yahoo Finance (http://finance.yahoo.com) and Google Finance (http://finance.google.com/finance).

Reports are expected to be between 20 and 30 pages (single spaced, 1" margins, 12 point font), including references and appendices. Here are some milestones for the project: Pick a Company (March 17th), Proposal Outlining Project Scope/Analysis (2 Pages; April 7th), Major Draft Report for Feedback (November 10th), and Final Report (December 8th). All documents should be submitted using the Digital Drop-box function of the course website on Blackboard. Presentations are scheduled for December 13th (20 minutes for individual presentations with an additional 5 minutes for Q&A). Reports will be graded by a team of faculty and industry executives.

Some useful references are made available under the Global ExecPhD Track website, including examples of actual corporate turnaround plans from several companies.

Special Needs: If you have a documented disability that requires accommodations, you will need to register with Student Disability Services for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-577-3365 (TDD only). Once you have your accommodations in place, we will be glad to meet with you privately during office hours to discuss your special needs. Please refer to the SDS website for further information about students with disabilities and the services we provide for faculty and students: http://studentdisability.wayne.edu

Attendance: We strongly recommend that learning partners attend all classes in person. In case of travel, join the class remotely. Contact Mr. Mark Garrison at mark.garrison@wayne.edu for making arrangements for remote participation.

Honesty: Learning partners registered for this course should obey the rules of academic integrity and follow the code of conduct. Please look at the following document: http://www.doso.wayne.edu/codeofconduct.pdf.

Grading: The overall grade will be based on performance in individual modules, with each full module carrying equal weight. See module specific syllabi for assessment criteria. Part of the grade is also based on the quality of the Integration Project.

Schedule:
Module Overview:
The module will discuss the need and importance of supply chain/network design/redesign for effective management of current day global supply chains. In particular, the module will present methods/tools for promoting network responsiveness, efficiency, and resilience. The module will also present some best practices from leading companies/industries.

The terms network design and supply chain network design (SCND) are sometimes employed as synonyms of strategic supply chain planning. While the facility related decisions (location, capacity) are core in network design, a number of operational and tactical issues are strongly related to them such as inventory control policies, the choice of transportation modes and capacities, warehouse layout and management, and vehicle routing (among others).

With the globalization, the shorter product life cycles, smaller lot sizes and a very dynamic customer behavior in terms of preferences have become prevalent across many industries. These aspects have contributed to growing demand uncertainty and as a result, a robust and well-designed supply chain network has become even more important. Accordingly, sophisticated facility location models may be necessary to determine the best supply chain configuration.

Topics:
1. Supply Chain/Network Design/Redesign
2. Supply Chain/Network Resilience
3. Best Practices

READINGS:

Required Reading:

Check Lists & Best Practice:

Sample Academic Articles:

ASSIGNMENTS:

Reading Assignment Summary: Due Date: September 3rd by Blackboard
Submit a written summary (about 2 pages, single spaced) of the four required reading articles.

**Application Assignment: Due Date: September 16th by Blackboard**

Compare and contrast the material presented in the module and the reading material to your (current or past) company's supply chain/network. How do you evaluate the performance of the existing network? Do you see any risks or opportunities for improvement? Feel free to focus on a product segment or two to manage complexity. Expected report length: About two typed pages, single spaced.

**Grading:**

- Reading Assignment Summary 40%
- Application Assignment 40%
- Class Participation 20%
IE 8944: Supply Management Module
Fall 2013

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Office: RM. 2161 (Manufacturing Engineering Building)
Office Hours: By appointment

Class Hours: September 6th (Friday) 4:30-8:00PM & September 20th (Friday) 1:00-4:30PM
Classroom: RM. 2062 (IME Conference Room), Manufacturing Engineering Building
Course Website: http://blackboard.wayne.edu

Topics:
1. Purchasing & Supply Management: Key Concepts
2. Strategic Sourcing and Outsourcing
3. Managing Trust, Relationships, Contracts
4. Role of IT, e-Sourcing/Procurement

READINGS:

Required Reading:

Check Lists & Best Practice:

Sample Academic Articles:

Case Studies:
- **eSourcing Strategy at Sun Microsystems:** In May 2000, Sonya Syngal, director of procurement strategy and supplier relations at Sun Microsystems, needed to make a critical decision. Under Syngal's leadership, the company had just completed its first “dynamic bidding” pilot tests and, as a result, cut its sourcing costs by 30%. Given these results, the potential for cost cutting via the implementation of a dynamic bidding system on a widespread scale at Sun was enormous; on an annual basis, the company was currently spending about $9 billion in direct materials procurement. Although the potential to cut costs significantly was clear, Syngal had several other issues to consider. (C.A. Holloway, A. Higuera, “eSourcing Strategy at Sun Microsystems,” Stanford Graduate School of Business Case OIT-34, Available through Harvard Business School Online Case Library, March 25, 2004).


**Web Sites:**

**Associations**
3. APICS: The American Production and Inventory Control Society  [http://www.apics.org/default.htm](http://www.apics.org/default.htm)

**ASSIGNMENTS:**

**Reading Assignment Summary: Due Date: September 5th by Blackboard**
Submit a written summary (about 3 pages, single spaced) of the five required reading articles.

**Application Study Assignment: Due Date: September 29th by Blackboard**
Compare and contrast the material presented in the module and the reading material to your (current or past) company's supply management practices. Evaluate the performance of the supply management. Do you see any risks or opportunities for improvement? Feel free to focus on different aspects of the supply management such as strategic sourcing/outsourcing, procurement execution, and supplier relationship management. Expected report length: About two typed pages, single spaced.

**Case Study Assignment: Due Date: October 6th by Blackboard**
Submit a case study report (about 4 pages, single spaced) for any ONE of the listed case studies.

**Grading:**

- Reading Assignment Summary  30%
- Case Study Assignment  20%
- Application Study Assignment  30%
- Class Participation  20%
IE 8944: Logistics, Distribution, & Collection Module
Fall 2013

Instructors: Dr. Ratna Babu Chinnam & Dr. Alper Murat
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Office: RM 2161 (Manufacturing Engineering Building)
Office Hours: By appointment

Class Hours: September 20th (Friday) 4:30-8:00PM & October 18th (Friday) 1:00-4:30PM
Classroom: RM. 2062 (IME Conference Room), Manufacturing Engineering Building
Course Website: http://blackboard.wayne.edu

Topics:
1. Logistics & Distribution: Key Concepts
2. Inventory Management: State of the Art
3. Trends in Warehousing and Storage
4. Transportation, 3PL & 4PL
5. Collection & Reverse Logistics
6. Role of IT & RFID

READINGS:

Required Reading:

Best Practice:

Sample Academic Articles:

Sample Dissertation:

Popular Press:
http://money.cnn.com/magazines/fsb/fsb_archive/2006/03/01/8370332/index.htm
Case Studies:

- **Amazon.com's European Distribution Strategy**: Describes how Amazon's distribution system evolved from the company's inception. In 2003, Amazon Europe must decide how to reconfigure its distribution network in light of expected growth, products proliferation, and geographical expansion in Europe. Examines how characteristics of suppliers and customers differ across the markets Amazon serves in Europe. The protagonist must consider the degree of centralization appropriate for the European network, where inventory should be held, what fulfillment models should be used, and how to manage risks of supply disruption. (J.H. Hammond and C. Chiron, Jun 30, 2005. Prod. #: 605002)

- **Wal-Mart China: Sustainable Operations Strategy**: A German expatriate had moved to China in 2005 to take up a merchandising position at the Wal-Mart China headquarters in Shenzen. By 2008 he had been promoted to the new position of senior director for sustainability for Wal-Mart China (retail) and Global Procurement. His new position required that he lead the rapidly-approaching inaugural Wal-Mart Sustainability Summit. The senior director must ensure that Wal-Mart China's five Strategic Value Networks (SVNs), which were tasked with leading sustainability change within the organization, continued to engage stakeholders by implementing innovative solutions that not only cut costs but also lead to more sustainable operations. The case describes Wal-Mart China's operations (including purchasing, distribution and retail) in the context of the company's desire to improve sustainability in a manner appropriate to China. The immediate issue is to identify opportunities to improve the sustainability of Wal-Mart China's distribution systems and retail operations. (D. Robb, B. Hopwood, L. Wang, and J. Cheng, Jan 21, 2009, Prod. #: 908D09)

Web Sites:

**Associations**

1. Council of Supply Chain Mgmt Professionals www.cscmp.org
2. IWLA www.iwla.com
4. Warehousing Education and Research Council (WERC) www.werc.org
5. National Industrial Transportation League www.nitl.org
6. NASSTRAC www.nasstrac.org
7. Transportation Intermediaries Association www.ofani.org

ASSIGNMENTS:

**Reading Assignment Summary**: Due Date: September 19th by Blackboard
Submit a written summary (about 3 pages, single spaced) of the four required reading articles.

**Application Study Assignment**: Due Date: October 27th by Blackboard
Compare and contrast the material presented in the module and the reading material to your (current or past) company’s logistics and distribution management practices. Do you see any risks or opportunities for improvement? Feel free to focus on different aspects of logistics and distribution management such as effective inventory management, warehousing, and returns management. Expected report length: About two typed pages, single spaced.

**Case Study Assignment**: Due Date: November 3rd by Blackboard
Submit a case study report (about 4 pages, single spaced) for any ONE of the listed case studies.

Grading:

- Reading Assignment Summary 30%
- Case Study Assignment 20%
- Application Study Assignment 30%
- Class Participation 20%
IE 8944: Service & Customer Relationship Management (CRM) Module

Fall 2013

Instructors: Dr. Ratna Babu Chinnam & Dr. Alper Murat

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Telephone: 313-577-4846

Office: Rm 2161 (Manufacturing Engineering Building)

Office Hours: By appointment

Class Hours: October 18th (Friday) 4:30-8:00PM & November 15th (Friday) 1:00-4:30PM

Classroom: Rm. 2062 (IME Conference Room), Manufacturing Engineering Building

Course Website: http://blackboard.wayne.edu

Topics:

1. Operational CRM – marketing planning and campaign mgmt, campaign execution and automation, e-marketing, opportunity and pipeline mgmt, sales lead mgmt, service planning and analysis, etc.
2. Analytical CRM – customer satisfaction and loyalty analysis, customer segmentation, customer profitability and lifetime value analysis, cross-selling analysis, channel and partner analytics, etc.
3. Collaborative CRM – demand-based planning, CRM-SCM integration, etc.

READINGS:

Required Reading:

Best Practice & Additional Readings:

Sample Academic Articles:

Popular Press: Quick Reads

Web Sites:
1. CRMGuru http://www.crmguru.com/
2. CRMcommunity.com http://www.crmcommunity.com/
3. CRMassist http://www.crmassist.com/
4. SearchCRM.com http://searchcrm.techtarget.com/
ASSIGNMENTS:

**Reading Assignment Summary: Due Date: October 17th by Blackboard**
Submit a written summary (about 3 pages, single spaced) of the five required reading articles.

**Application Study or Literature Review Assignment: Due Date: November 24th by Blackboard**
Compare and contrast the material presented in the module and the reading material to your (current or past) company’s customer relationship management practices. Feel free to focus on different aspects of CRM such as operational, analytical and collaborative CRM. Expected report length: About two typed pages, single spaced.

**Grading:**
- Reading Assignment Summary: 40%
- Application Study Assignment: 40%
- Class Participation: 20%