Capstone Course in Markets & Management Studies  
MMS 190.04

Theme – Technology, Jobs and Offshore Production:  
The New Challenges of Economic Leadership in the 21st Century Global Economy

Integrative learning is a fundamental challenge in our contemporary world. The Markets & Management Studies Program at Duke is premised on the idea that an interdisciplinary perspective offers the best training for people who will be pursuing careers in business, government, or the non-profit sector. This Capstone course is intended to help M&M students pull together material from core courses in the program, but it is meant to facilitate integrative learning in other ways as well. You will learn how to work in teams to identify and resolve problems confronting companies, industries, and communities today. This is a difficult assignment because you will be expected to blend your diverse perspectives and backgrounds, to bridge theory and facts, and to convince the participants or stakeholders in the situation you are analyzing that you have a realistic contribution to make. In this regard, you must move beyond the passive learner role ordinarily associated with students to become both engaged researchers and policy advocates.

Most of the M&M Capstone courses embody particular themes. This course will focus on the theme of Technology and Jobs in the Global Economy. As a result, it can count for students who are pursuing either the “Technology and Society” or “Global Economy” course clusters in the M&M Program.

Globalization of the Scientific/Engineering Workforce and U.S. Economic Competitiveness

One of the key questions in the contemporary era of globalization is: How can countries maintain international competitiveness and get ahead in the global economy, and still create an adequate number of good jobs for their workforce? The popular press and daily news shows are full of stories about how the global outsourcing strategies of U.S. corporations have led to an alarming offshore migration not only of blue-collar factory jobs, but also white-collar office work and knowledge-intensive professional jobs. The obvious concern is whether this is good or bad for the U.S. economy, whether the globalization of production is inevitable, and what is happening to the nature of work in advanced industrial as well as developing societies.

The globalization of the scientific/engineering workforce has been of particular concern in recent debates about U.S. technological leadership. The rise of India and China as major economic powers has raised numerous questions about their role in the global economy, and whether the United States is well positioned to meet the challenges of 21st century technological leadership. The first portion of our course will focus on this topic by looking at the engineering outsourcing debate and initiatives undertaken by Duke University in this area. We will begin with background readings on the global offshoring phenomenon, including the McKinsey Global Institute labor market report (July 2005), selected articles from the business press on offshoring and outsourcing, and also national studies that deal with U.S. engineering and science education. Next we will hear from faculty involved in reshaping the curriculum at the Pratt School of Engineering at Duke, and we also will invite guest lecturers from other universities to discuss the national and international implications of these educational reforms. We will get research
reports from MEM (Master of Engineering Management) students at Duke about the current phase of the Duke engineering outsourcing project that was initiated last semester <http://memp.pratt.duke.edu/outsourcing/>, and M&M Capstone students will submit research reports on engineering curriculum innovations being carried out at other universities.

**North Carolina in the Global Economy**

The second half of the course will look more closely at the impact of globalization on North Carolina. Global outsourcing is playing out in a unique way in North Carolina. This state has an unusually broad mix of traditional and modern industries: textiles & apparel and furniture as relatively labor-intensive light manufacturing industries; information technology and biotechnology in the high tech arena in the Research Triangle; poultry and hog farming in the eastern part of the state; tobacco and cigarette manufacturing, seemingly a declining sector; etc. Each of these industries has its own dynamics in terms of start-up, growth, maturity, and declining phases; and they each have different patterns of corporate investments, international trade (imports and exports), and inward and outward job flows of workers at very different skill levels.

Duke students and faculty have already carried out substantial research, embodied in a website on North Carolina in the Global Economy <http://www.soc.duke.edu/NC_GlobalEconomy/>. Members of the M&M Capstone class will build on the existing research, and look at some of the new challenges confronting North Carolina’s key industries. Guest lecturers will be invited from state government as well as large and small firms in North Carolina, and students will choose research topics that allow them to explore various ways to improve the performance of North Carolina firms, institutions and policies.

**Requirements for the Course**

As in all M&M Capstone courses, there will be team projects. This semester, we will have one project for 2-person teams, and another project for 3-person teams. Topics will be decided early in the semester. In addition, students will write an individual research paper related to the themes of the course. The two team projects and the individual research paper will each count for 30% of the course grade, and class participation for the remaining 10% of your grade.

In terms of the content of the course, I have provided a set of readings and assignments for the first two months of the semester. However, I would like to leave the definition of topics for your team projects and the designation of readings for the latter portion of the semester open while I learn more about your specific interests, and we identify a series of outside guest lecturers for the course. These guest lecturers will come from business, government, and academia, and they will be actively engaged in helping Duke students in the course identify and carry out research projects of real-world significance. Thus, the latter portions of the syllabus will be “filled in” as the semester progresses.

**Blackboard and Readings**

Most of the materials related to this course will be available through Blackboard <https://courses.duke.edu/>. All students in MMS 190.04 will be expected to log into Blackboard on a regular basis for announcements, course documents, supplementary lecture materials, and convenient communication tools such as group pages, student drop boxes, and discussion boards. E-mail will be an important form of communication in this course, so check your e-mail accounts frequently.

One book will be read for the course, and it is available at the Duke University Bookstore:

The remainder of the readings assigned for the course can be accessed via Blackboard.

**COURSE OUTLINE AND READING LIST**

**Jan. 11**  Introduction to class

**Jan. 16**  Martin Luther King, Jr. Day holiday (no class)

**Jan. 18**  **Offshore Production and the Outsourcing of Jobs**


**Jan. 23**  **The Education Debate, Part 1 – Globalization of Scientific/Engineering Workforce**


Recommended:

[Both articles can be found on the website, [http://www.soc.duke.edu/outsourcing/](http://www.soc.duke.edu/outsourcing/).]


http://www.businessweek.com/smallbiz/content/jan2006/sb20060109_693001.htm

http://www.businessweek.com/bwdaily/dnflash/dec2005/nf20051223_7594_db039.htm

Jan. 30  
**Outsourcing: An Engineering Education Perspective**

Guest lecturers from the Pratt School of Engineering: Jeff Glass, Hogg Family Director of Engineering Management and Entrepreneurship; Linda Fanzoni, Associate Dean for Student Affairs; and Greg Twiss, Director, Product Design Services and Applications, Cisco Systems, and Instructor, Pratt School of Engineering.

Feb. 1  
Outline and preliminary reports by students regarding 2-person team projects on “U.S. engineering schools”

Feb. 6  
**Update on Duke engineering study, Spring 2006.**

Discussion by Vivek Wadhwa, Executive in Research, Pratt School of Engineering; and Ben Rissing and other MEM (Master of Engineering Management) students carrying out engineering research.

Feb. 8  
**The Education Debate, Part 3 – U.S. Engineering Preparedness**

Discussion moderators: Brad Fox, Pratt School of Engineering.


Feb. 13  
Review of progress on U.S. engineering education study.

Feb. 15  

Feb. 20  

Feb. 22  

Feb. 27  


March 1  
Guest lecturer: Ron Hira, Rochester Institute of Technology, “The Offshoring Challenge for U.S. Engineers”

March 6  
Guest lecturer: Deepa George, Department of Sociology, Duke University, “North Carolina’s Community College System: Is It Up to the High-tech Challenge?”


March 8  
**Final 2-person team reports on “U.S. Engineering Schools” due:** Class discussion.

SPRING RECESS

March 20  
**North Carolina in the Global Economy – New Research Initiatives**


Reading: The technical proposal for the WIRED (Workforce Innovations in Regional Economic Development) grant that the Piedmont Triad Region received from the U.S. Department of Labor (posted in Blackboard under Course Documents). For a news report on this grant, go to  

March 22  
Discuss team projects for North Carolina in the Global Economy portion of the course.

March 27  
**North Carolina’s furniture industry**

Read the articles on North Carolina’s furniture industry in the Furniture/ Resources section of the NCGE website  
<http://www.soc.duke.edu/NC_GlobalEconomy/furniture/resources.php>. Also, read through the text and tables of the furniture portion of the website.

March 29  
**Engineering Education at Duke: What Is a Dynamic Engineer?**

Guest lecturer: Kristina Johnson, Dean, Pratt School of Engineering, Duke University.


April 3  
In-class summaries from North Carolina project teams.

April 5  
**Greensboro and Research Triangle – Regional Case Studies in North Carolina**

Read the two Greensboro, NC consulting reports by McKinsey Consulting, posted under External Links in Blackboard, along with the Research Triangle report done by Michael Porter’s Monitor group, available through the U.S. Council on Competitiveness  
<http://www.compete.org/nri/clusters_innovation.asp>. 
April 10  In-class discussion of individual research paper proposals.

April 12  **China’s Growing Economic Impact in North Carolina**

Guest lecturer: Ucheoma Nwagbara, Division of Policy, Research, and Strategic Planning, North Carolina Department of Commerce, “Enter the Dragon: China’s Growing Global Economic Influence and Its Implications for North Carolina.”

April 17  Review progress of group projects in class.

April 19  Guest lecture: Mr. Sridhar Sourirajan, “The importance of ‘soft skills’ in the offshore outsourcing of software.” Sridhar Sourirajan is a Solutions Architect for Operational Risk Management covering accounts involving banks and financial institutions in the Americas. He has been with SAS Institute for 3 years.


April 24  Discussion of team projects on North Carolina

April 26  Discussion of individual research papers

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