



UNIVERSITY OF
MARYLAND

ROBERT H. SMITH
SCHOOL OF BUSINESS

ELECTIVES AND SELECTIVES

FROM

DECISION, OPERATIONS &
INFORMATION TECHNOLOGIES

2008-09

The DO&IT group at Smith offers a wide spectrum of electives. Since we are in the process of transitioning most courses from a 3-credit to a 2-credit format, most of our electives are assigned a temporary course number (758X). To avoid confusion, we recommend referring to courses using their *names* instead of their *numbers*.

The schedule of electives for 2008-09 is shown below. All courses carry two credits except *Data Mining for Business* which is a three credit course. Campus locations are abbreviated as:

BA: Baltimore DCE: DC Evening (weekdays) SG: Shady Grove
 CP: College Park DCW: DC Weekend (Saturdays)

TECHNOLOGY SELECTIVES:

BUSI 758?	<i>Strategic & Transformational IT (Tech Selective)</i>	Fall 2008-?: DC-W Spring 2009-?:CP, DCE
BUSI 758?	<i>Managing Digital Businesses (Tech Selective)</i>	Fall 2008-?: DC-W Spring 2009-?:CP, DCE

DO&IT ELECTIVES:

BUSI 758P	<i>Project Management in Dynamic Environments</i>	Fall 2008-B: CP, DCW Spring 2009-C: BA, SG
BUSI 758?	<i>Games of Strategy</i>	Spring 2009-C: CP, DCE
BUSI 758?	<i>Incentives & Contracts</i>	Spring 2009-D: CP, DCE
BUDT 733	<i>Data Mining for Business</i>	Fall 2008: BA (3 credits, 14 weeks)
BUDT 758?	<i>Financial Forecasting</i>	Spring 2009-C: BA, DCE
BUDT 758?	<i>Operations & Supply Chain Strategy</i>	Spring 2009-D: CP, DCE
BUDT 758?	<i>Pricing & Revenue Management</i>	Spring 2009-C: CP, DCE
BUDT 758?	<i>Operations Management for Health Services</i>	Winter 2008: BA Summer 2009: SG
BUDT 758N	<i>Managing Emerging Technologies</i>	Fall 2008-A: CP, DCW
BUDT 758?	<i>Technology & Industry Transformation</i>	Winter 2008: DC Spring 2009-C: BA
BUDT 758K	<i>Business Process Analysis for IS Design</i>	Fall 2008-A: SG Spring 2009-?: DCW

RECOMMENDATIONS FOR SPECIFIC CAREERS PATHS

DO&IT electives are useful not only for careers in Operations or Information Systems, but also for a variety of other MBA career paths. For example, if you intend to pursue a career in Finance, it is obvious that you should take several electives in Finance. Less obvious, but equally important, is to use your opportunity in the Smith MBA program to take certain DO&IT electives that complement your finance electives to create a balanced portfolio of electives for a stellar career in Finance.

For each of several popular career paths, we have assembled below a set of DO&IT electives that will add value to all students pursuing that career path. In some cases, also we suggest additional electives that may be useful for some students on those career paths.

Course descriptions are provided on pages 6-10.

MANAGEMENT CONSULTING (STRATEGY/MARKETING/OPERATIONS)

Recommend: Project Management in Dynamic Environments
Games of Strategy
Technology & Industry Transformation
Operations & Supply Chain Strategy

Also Suggest: Data Mining for Business
Pricing & Revenue Management

GENERAL MANAGEMENT

Recommend: Games of Strategy
Incentives & Contracts
Operations & Supply Chain Strategy

Also suggest: Data Mining for Business

OPERATIONS MANAGEMENT/SUPPLY CHAIN

Recommend: Operations & Supply Chain Strategy
Pricing & Revenue Management
Games of Strategy

Also suggest: Data Mining for Business
Incentives & Contracts

INFORMATION SYSTEMS AND IT CONSULTING

Both Tech Selectives: Strategic & Transformational IT
Managing Digital Businesses & Markets

Recommend: Managing Emerging Technologies
Technology & Industry Transformation
Business Process Analysis for Information System Design
Operations & Supply Chain Strategy
Project Management in Dynamic Environments

ENTREPRENEURSHIP AND VENTURE CAPITAL

Recommend: Managing Emerging Technologies
Technology & Industry Transformation
Games of Strategy
Incentives & Contracts

FINANCE (CORPORATE FINANCE, INVESTMENT BANKING, ASSET MGMT)

Recommend: Data Mining for Business
Incentives & Contracts

STRATEGIC MANAGEMENT

Recommend: Games of Strategy
Operations & Supply Chain Strategy

ORGANIZATIONAL BEHAVIOR AND HUMAN RESOURCES MGMT

Recommend: Incentives & Contracts

Also Suggest: Project Management in Dynamic Environments

BUSINESS DEVELOPMENT/MARKETING RESEARCH

Recommend: Data Mining for Business
Games of Strategy
Technology & Industry Transformation

Also Suggest: Pricing & Revenue Management

BRAND MANAGEMENT

Recommend: Games of Strategy

LOGISTICS AND TRANSPORTATION MANAGEMENT

Recommend: Operations & Supply Chain Strategy

Also Suggest: Managing Emerging Technologies

COURSE DESCRIPTIONS

PROJECT MANAGEMENT IN DYNAMIC ENVIRONMENTS

A great deal of knowledge work performed in today's organizations is project-based. Consequently, project management skills are crucial to the performance of most managers. While project management techniques are well established, the turbulent environment faced by many projects presents unique challenges to the project manager. Tools and frameworks for managing these challenges are explored via real-world projects.

GAMES OF STRATEGY

Will your sales increase if you decrease your price? Not necessarily, if your competitors also decrease their prices. Strategic situations (where your payoff depends on your own decision and also on another decision-maker) are characterized by *competition*, but also hold the possibility of *cooperation*, and more generally, *coordination*. Using analytical tools from the field of *game theory*, we will analyze strategic decision-making in pricing, capacity, entry/exit decisions, product differentiation, deterrence, proliferation, bundling, and convergence of standards.

In studying these decisions, we will explore the analytical basis of seemingly fuzzy ideas such as *reputation*, *commitment*, *credibility*, and *trust*.

The elective *Incentives and Contracts* is strongly recommended as a (follow-up) companion course to this course.

INCENTIVES & CONTRACTS

How can a firm incentivize its employees to share risk and undertake the "right" kind of effort? How can a firm incentivize its retailers to share demand information and develop stocking policies that are beneficial to the firm and to the retailer? In raising capital, what are a firm's incentives to issue more equity as opposed to more debt? Knowing this, how should investors respond?

All of the above strategic situations are characterized by information asymmetry. Tools for analyzing such decisions include the principal-agent framework and models for screening and signaling. In this course, we learn and apply these tools to a diverse set of decisions: incentivizing employees; incentives in supply chains; auctions as screening mechanisms; signaling in recruiting; agency issues in capital structure; agency issues in corporate governance.

While there is no official pre-requisite for this course, students are strongly urged to take *Games of Strategy* before taking this course.

DATA MINING FOR BUSINESS (3 credits/14 weeks)

This course details contemporary methods and processes for extracting information from large databases in support of tactical and strategic business decisions. Applications in areas such as customer relationship management, direct marketing, e-commerce, financial services, and retailing.

FINANCIAL FORECASTING

Forecasting is commonly used with time-series data. Some of the topics to be explored include: choosing a forecasting technique, naïve forecasting, smoothing methods including moving averages and exponential smoothing, multiplicative and additive decomposition, the Box-Jenkins methodology for non-seasonal and seasonal models, intervention models, growth models and managing the forecasting process.

The application of statistical software, specifically SAS and Minitab, for insightful and extensive statistical analysis is an integral part of the course.

OPERATIONS AND SUPPLY CHAIN STRATEGY

In the 90s, Blockbuster could not stock enough tapes to satisfy the rental demand for movies because of the high prices charged by the studios, such as MGM, for the movie tapes. Blockbuster and a MGM restructured the terms of the contract: MGM sold the movie tape to Blockbuster at a much lower price in exchange for a share of the rental revenues. Consequently, Blockbuster stocked many more tapes: Customers were happy since they could rent the movie, Blockbuster was happy as it resulted in increased rental revenues, and MGM was happy since they could offset the low selling price by a share of the rental revenues. By merely restructuring the terms of the contract, all parties were made better-off.

Benetton found it incredibly difficult to accurately predict demand for specific colors of sweaters. The production process involved dyeing the wool with the specific colors and then knitting the sweaters. Since knitting took a long time, Benetton had to start the knitting well in advance of the selling season, when demand information was still fuzzy. The inaccuracy of the forecasted demand information resulted in a mismatch between supply and demand. Benetton remedied the situation by *reversing* the sequence of steps: Knitting before dyeing. Since dyeing took a much shorter time than knitting, this allowed the company to knit uncolored sweaters and then dye them closer to the selling season when better demand information was available. Hence, Benetton could better align supply with demand, not by investing in better forecasting mechanisms, but by reversing a key step in their manufacturing process.

The course looks at *strategies* that firms can leverage *to better match supply and demand*, a key source of competitive advantage for firms. These include redesigning products and processes, managing information flows in supply chains, leveraging the online channel, aligning incentives within members of the supply chain, etc. Methodology includes models, cases and in-class games.

PRICING AND REVENUE MANAGEMENT

Have you ever wondered why airlines sell similar seats at different prices? Or why prices increase as one gets closer to the departure date? Have you ever agonized as to how far in advance should you book a hotel room? Firms in many industries, such as hotels and airlines, employ such “smart pricing”, to maximize their revenues. Indeed, setting the “right price” is one of the most fundamental but challenging business decisions that a firm makes. The course introduces you to the tools and techniques of Revenue Management – pricing smart to maximize revenues. The topics covered include economics of pricing, strategy and tactics of PRM, pricing optimization, differentiated pricing, dynamic pricing, mark-down pricing, legal and ethical issues in pricing, B2B pricing and applications of PRM in various industries.

OPERATIONS MANAGEMENT FOR HEALTH SERVICES

This course focuses on improving the operations of health services organizations and, more generally, on managing health care organizations. In particular, we will discuss the application of ideas and practical techniques from focused operations management to the study of hospitals and health maintenance organizations (HMOs). Of course, these tools can also be applied to other nonprofit and for-profit organizations both within and outside of the health care sector. Three fundamental and related questions that plague hospital administrators are: How can we increase throughput? How can we identify and remove bottlenecks? How can we do more with current resources?

In this course, we will introduce a variety of tools that have been used to increase throughput, reduce response time, and create value in the health care sector. Leaders and decision makers from the University of Maryland Medical Center and the University of Maryland School of Medicine will be invited to speak with the class.

STRATEGIC & TRANSFORMATIONAL IT

The music recording industry has been in turmoil since Napster appeared on the scene. Why did this industry fight the technology so long? How did the managers at Kodak respond to the invention of digital photography? This course examines how to identify transformational technologies and develop strategies to take advantage of them.

Beyond transformation, a 21st Century manager will make decisions about information technology no matter where he or she works. These decisions include how to incorporate IT with strategy, how to decide when to upgrade legacy systems, and what enterprise applications the firm should implement. In addition managers have to be concerned about how to evaluate investments in IT and how to assign priorities to proposed IT projects. The technology also enables new organization forms: how will management be different in networked firms?

This course does not assume any particular student background. It is focused on management issues and is suitable for the student with no IT experience as well as for students with technical backgrounds who want to understand how to manage IT in the firm.

MANAGING DIGITAL BUSINESSES

This course examines how firms exploit the unique opportunities that are appearing online and simultaneously respond to the online threats to their existing business model. Topics include: economics of new information products, online shopping, one-on-one marketing, electronic distribution, net-enabled transactions, supply chain integration, and electronic communities. Course also provides an overview of the technological infrastructure that enables e-commerce.

MANAGING EMERGING TECHNOLOGIES

How can managers use emerging technologies? Such technologies can create an advantage that is hard to replicate (e.g., Microsoft) or to curb (e.g., Google, WiFi/3G). This course focuses on understanding (a) the nature of new and exciting emerging technologies, (b) their value propositions for specific organizations, and (c) how these technologies will shape value creation, value capture and competition in the future.

Topics include:

1. Social Computing
 2. Emerging Telecom – Wireless, LBS, 3G Telephony, Next-Gen Voice Networks
 3. Outsourcing/Off-shoring
 4. Open Source Software
 5. Intelligent Devices and Applications
 6. Software Engineering and Procurement
 7. Technology and Privacy/Ethics
 8. IT and Security
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TECHNOLOGY & INDUSTRY TRANSFORMATION

Wireless and telecom technologies have transformed the music and entertainment industry: Who will produce the content? How will it be delivered? This course focuses on the role of technology in transforming an entire industry. We use frameworks from economics and strategy to understand the changing nature of competition and markets in various industries.

Topics include:

1. IT in The Service Sector
 2. IT and Healthcare
 3. IT and the Financial Services
 4. IT and Government/Non-Profit Management
 5. IT in the Defense Sector
 6. Telecommunications and Networks
 7. IT and the Entertainment Industry
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BUSINESS PROCESS ANALYSIS FOR INFORMATION SYSTEM DESIGN

Concepts, processes, tools, and techniques needed in systems development. Topics covered include process and data modeling, requirement analysis, object oriented design, user interface design, ERP and package implementation, and designing for the Web.
