Undergraduate Elective Courses

Information and Operations Management Department

IOM Undergraduate Course Descriptions

IOM 401 Business Information Systems – Spreadsheet Applications (2 units, Fall and Spring)

This course is designed to provide students with an applied understanding of how “spreadsheet applications” are used to analyze business situations. This course provides an opportunity for students to master the use and design of “Microsoft Excel” for business information analysis in the areas of finance, information systems, marketing, and operations. This course will also enhance students’ understanding of the core business disciplines by providing them with the skills and experience to develop, test and analyze business cases, to increase the effectiveness in the corporate decision-making processes. This course is a hands-on course and it is a must have for internships and jobs.

IOM 432 Business Information Systems – Database Applications (2 units, Fall)

Throughout the course, students will learn how to design, develop, and utilize the desktop database that businesses employ for decision making and data management. Using Microsoft Access, students will learn hands-on the basic of normalizing a database, creating and relating tables, creating user interfaces through the use of forms and macros, extracting and manipulating information through queries, and creating business reports. This course consists of weekly instructor led lab assignments and a final database project developed by the student.

IOM 434 Business Forecasting (4 units, Spring)

Forecasting in today’s business world is becoming increasingly important as firms focus on improving customer satisfaction while reducing the cost of providing products and services. Business decisions almost always depend on forecasts about the course of events. Virtually every area of business makes use of some type of forecast. In business forecasting, time series models are used to analyze data that are collected sequentially over time. A primary goal of these models is to exploit the correlation structure of the observations in order to predict future values. The course is designed for students working in the field of economics, business, marketing, production, operations research, international trade, accounting, etc., who want a non-technical introduction to applied time series econometrics and forecasting.

IOM 427 Designing Spreadsheet Based Business Models (4 units, Fall)

As a manager, you make a lot of business decisions – creating a financial portfolio, working capital management, media planning, sales territory planning, company growth planning, logistics planning, etc. Most of these decisions are fundamentally about resource allocation. In this fast moving market, you have to make these decisions in the face of uncertainty. The goal of this course is to become an effective Excel modeler who can solve resource allocation problems, incorporate uncertainties in Excel models to gain insights into future risks, and model more complicated long-term decision-making processes to evaluate contingent decisions.

IOM 437 Managing the Digital Revolution for Your Business (4 units, Fall and Spring)

With this course, you will actually create and upload your own website using technology tools. You will learn about databases, learn how to use software that businesses use, attend Guest Speakers from well known companies using digital technologies, class can be used toward a number of different minors and majors, it helps you prepare for any job in consulting or business where you care about how new digital technologies can be strategically used by organizations.

IOM 435 Business Information Systems Analysis and Design (4 units, Fall)

This course teaches key concepts and tools in order to provide the prospective business or information systems professional with fundamental concepts and skills in data modeling (conceptual, logical, and physical), as well as in designing, building, and managing the data layer to support business applications. In addition to data modeling, considerable proficiency with Structured Query Language (SQL) will be obtained. Although object-oriented, and other database approaches will be discussed, the course focuses primarily on the use of state-of-the-art relational and object-relational databases.

IOM 402 Business Information Systems – Spreadsheet Applications (2 units, Fall and Spring)

In this course, you will learn how to design, develop, and utilize the desktop database that businesses employ for decision making and data management. Using Microsoft Access, students will learn hands-on the basics of normalizing a database, creating and relating tables, creating user interfaces through the use of forms and macros, extracting and manipulating information through queries, and creating business reports. This course consists of weekly instructor led lab assignments and a final database project developed by the student.

IOM 433 Business Information Systems Analysis and Design (4 units, Fall)

This course teaches key concepts and tools in order to provide the prospective business or information systems professional with fundamental concepts and skills in data modeling (conceptual, logical, and physical), as well as in designing, building, and managing the data layer to support business applications. In addition to data modeling, considerable proficiency with Structured Query Language (SQL) will be obtained. Although object-oriented, and other database approaches will be discussed, the course focuses primarily on the use of state-of-the-art relational and object-relational databases.

Managing World-Class Operations and Information Systems

The teaching and research of the Information and Operations Management Department is composed primarily of three disciplines: information systems, operations management, and statistics. While there is some overlap across the three groups in research and teaching programs, we offer elective courses in each area separately. There are about 30 faculty members in the department, who are very active in teaching, research and various professional organizations. Several of the department faculty have received research awards and honors, serve on editorial boards of major journals, and have won a range of teaching awards.
IOM 415 Project Management (4 units, fall)
This course begins with organizational issues in project management and focuses on skills and roles of project leaders and structure of project teams. Then the course moves on to more technical areas and covers project integration, scope, time, and cost management. It will also cover project resource, risk, and procurement management. It will be finalized with controlling, monitoring and terminating projects. Throughout the course students will learn how to use MS Project, Monte Carlo simulation for project risk management, and spreadsheet models for various optimization problems within the project management context.

IOM 422 Supply Chain Management (4 units, fall)
This course focuses on management and improvement of supply chain processes and performance. It will be valuable for students who would like to pursue a career in consulting or take a position in operations, marketing or finance functions in a manufacturing or distribution firm. We explore important supply chain metrics, primary tradeoffs in making supply chain decisions, and basic tools for effective and efficient supply chain management, production planning and inventory control, order fulfillment and supply chain coordination. We will also investigate topics such as global supply chain design, logistics, and outsourcing, several other recent supply chain innovations. The content covers both quantitative and qualitative materials. Cases will feature high-tech companies as well as firms in more traditional industries such as apparel and manufacturing.

IOM 423 - Operations Consulting (4 units, Spring)
This course covers concepts, frameworks, analytical and managerial skills for leading and adding value in management consulting projects with a focus on operations. We will concentrate on operational issues and decisions, including developing competitive advantage through operations, strategic planning, collaborative supply chain planning, and analytics. The class format includes hands-on student consulting projects with a well-known client companies, lectures, case discussions, and guest speakers.

1. Supply Chain Management Basket:
These courses are good for students who plan to work as procurement/Manufacturing/operations professionals in large manufacturing and logistics companies, or who want to pursue a career as a consultant focusing on these issues.

- Supply Chain Management (IOM 482, 4 units)
- Either one from the following list:
  - Designing Spreadsheet-based Business Models (IOM 427, 4 units)
  - Business Information Systems – Spreadsheet Applications (IOM 401, 2 units)
  - Business Information Systems – Database Applications (IOM 402, 2 units)
- Anything from the following list:
  - Operations Consulting (IOM 483, 4 units)
  - Managing the Digital Revolution for your Business (IOM 431, 4 units)
  - Project Management (IOM 455, 4 units)
  - Management of Service Operations (4 units)

2. Consulting Basket
These courses are good for students who plan to work as a consultant/business analyst/associate in management consulting companies or internal consulting groups of large companies.

- Operations Consulting (IOM 483, 4 units)
- Any two from the following list:
  - Designing Spreadsheet-based Business Models (IOM 427, 4 units)
  - Business Information Systems – Spreadsheet Applications (IOM 401, 2 units) and Business Information Systems – Database Applications (IOM 402, 2 units)
  - Business Database Systems (IOM 403, 4 units)
  - Business Information Systems Analysis and Design (IOM 433, 4 units)
- Anything from the following list:
  - Managing the Digital Revolution for your Business (IOM 431, 4 units)
  - Business Forecasting (IOM 424, 4 units)
  - Project Management (IOM 455, 4 units)

3. Digital Transformation Basket
These courses are good for students who plan to have a career in consulting or take a position in a management role in all industries.

- Any three from the following list:
  - Project Management (IOM 455, 4 units)
  - Business Information Systems Analysis and Design (IOM 433, 4 units)
  - Business Database Systems (IOM 403, 4 units)
  - Business of Interactive Digital Media (IOM 443, 4 units)
  - Managing a Small Business on the Internet (IOM 462, 2 units)
  - Business Information Systems – Spreadsheet Applications (IOM 401, 2 units)

4. Project and Program Management Basket
These courses are good for students who plan to work as a project/program manager in all industries including aerospace, construction, IT.

- Any Project Management (IOM 455, 4 units)
- Any two from the following list:
  - Designing Spreadsheet-based Business Models (IOM 427, 4 units)
  - Operations Consulting (IOM 483, 4 units)
  - Business Information Systems – Spreadsheet Applications (IOM 401, 2 units)
  - Business Information Systems – Database Applications (IOM 402, 2 units)

Job Baskets for Undergraduate Electives

1. Project Management Basket:
These courses are good for students who plan to work as project/program managers in all industries.

- Project Management (IOM 455, 4 units)
- Business Database Systems (IOM 403, 4 units)
- Business of Interactive Digital Media (IOM 443, 4 units)
- Managing a Small Business on the Internet (IOM 462, 2 units)
- Business Information Systems – Spreadsheet Applications (IOM 401, 2 units)

2. Supply Chain Management Basket:
These courses are good for students who plan to work as procurement/Manufacturing/operations professionals in large manufacturing and logistics companies, or who want to pursue a career as a consultant focusing on these issues.

- Supply Chain Management (IOM 482, 4 units)
- Either one from the following list:
  - Designing Spreadsheet-based Business Models (IOM 427, 4 units)
  - Business Information Systems – Spreadsheet Applications (IOM 401, 2 units)
  - Business Information Systems – Database Applications (IOM 402, 2 units)
- Anything from the following list:
  - Operations Consulting (IOM 483, 4 units)
  - Managing the Digital Revolution for your Business (IOM 431, 4 units)
  - Project Management (IOM 455, 4 units)

3. Digital Transformation Basket
These courses are good for students who plan to have a career in consulting or take a position in a management role in all industries.

- Any three from the following list:
  - Project Management (IOM 455, 4 units)
  - Business Information Systems Analysis and Design (IOM 433, 4 units)
  - Business Database Systems (IOM 403, 4 units)
  - Business of Interactive Digital Media (IOM 443, 4 units)
  - Managing a Small Business on the Internet (IOM 462, 2 units)
  - Business Information Systems – Spreadsheet Applications (IOM 401, 2 units)

4. Project and Program Management Basket
These courses are good for students who plan to work as a project/program manager in all industries including aerospace, construction, IT.

- Any Project Management (IOM 455, 4 units)
- Any two from the following list:
  - Designing Spreadsheet-based Business Models (IOM 427, 4 units)
  - Operations Consulting (IOM 483, 4 units)
  - Business Information Systems – Spreadsheet Applications (IOM 401, 2 units) and Business Information Systems – Database Applications (IOM 402, 2 units)