INFORMATION SYSTEMS

Rapid technological advances have radically reshaped business and the economy. Digital technology, combined with globalization, has spawned new markets, new ways of organizing business processes, new work environments, disruptive business models, and new strategic and competitive opportunities for today's business leaders. Electronic commerce, social networking, mobile computing, digital goods and services, cloud computing, and big data are a few of the many digital tech trends that are transforming business and shaping a new economy.

Fordham’s information systems (IS) curriculum teaches students how to become business leaders who can harness the power of technology and business analytics to create business value and gain competitive advantage. Students gain a deep understanding of both business and technology and emerge with a skill set that is highly sought-after by employers.

The IS faculty recently redesigned the curriculum to position students effectively for the careers and roles that are most called-for in today’s business world. Students can select courses from three cutting-edge career-oriented tracks, as follows:

**Business Analytics Track**
Students prepare for careers in business analytics, a fast-growing area in firms of all types and sizes. Students will be able to collect, clean, structure, integrate, and analyze data to drive management insight, informed decision-making, and superior business performance. The business analytics program provides familiarity with concepts, frameworks, software tools and techniques, and trends.

**Digital Business Innovation Track**
This track readies students to drive business transformation through digital technologies. Students will acquire an in-depth understanding of digital business trends such as e-commerce, mobile commerce, cloud computing, social technologies, and tech startups. Students will be able to understand and exploit disruptive digital innovation.

**Enterprise Architecture Track**
Prepares students to design and build business systems, as well as to implement, manage, and leverage enterprise systems within organizations. Students will be able to design and manage sophisticated systems that solve business problems and provide the foundations for redesigned business processes, enterprise-wide integration and information sharing, novel services, and innovative business models. This track includes also a number of industry-specific courses that provide a sophisticated understanding of IT applications within a specific industry, such as healthcare IT.

Overall, students will:

- Learn to recognize new business opportunities created by digital technologies
- Learn to address the strategic, tactical, and operational issues associated with using information systems successfully in business
- Acquire hands-on tech skills that will enable them to solve business problems and gain an edge in the job market

Gabelli School students may integrate IS into their academic program in several ways:

- As a major
- As a primary or secondary concentration added to a major in business administration
- As a secondary concentration added on top of any major

**How courses are counted**
Students must note the following rules, implemented in fall 2013, for how courses are counted. A student may count a maximum of one class in fulfilling more than one purpose—that is, toward any combination of major, minor, or primary or secondary concentration. For example, only one economics class could count toward both a finance major and an economics minor; any additional economics class would count toward the finance major OR the economics minor, but not both. Similarly, one management class could count toward both a primary concentration in management and a minor in sustainable business, but any subsequent management class would not count toward both. Any exceptions to these rules will be posted within the specific area major, minor, or concentration requirements.

**For more information**
View the Information Systems Area web page.

**Programs**

**Majors**
- Accounting/Information Systems Major
- Information Systems Major

**Concentration**
- Concentration in Information Systems

**Related concentrations**
- Concentration in Digital Media and Technology
- Concentration in Fintech

**Courses**

**Our Courses**

INSY 2299. INFORMATION SYSTEMS: GSB INTEGRATED CORE ONLY.
(1.5 Credits)
This course introduces students to the subject of computer-based information systems in business. Upon completion of this course students should be familiar with the basic concepts and current developments in the field of information technology and information systems; appreciate the role of information systems in business organizations; and understand the issues that employing information technology raises. Students also learn to use effectively key software tools (spreadsheets and databases) that improve personal productivity and can contribute to business value.
INSY 2300. INFORMATION SYSTEMS. (3 Credits)
This course introduces students to the subject of computer-based information systems in business. Upon completion of this course students should be familiar with the basic concepts and current developments in the field of information technology and information systems; appreciate the role of information systems in business organizations; and understand the issues that employing information technology raises. Students also learn to use effectively key software tools (spreadsheets and databases) that improve personal productivity and can contribute to business value.

Attribute: BUMI.

INSY 2301. INFORMATION SYSTEMS: GSB INTEGRATED CORE ONLY. (1.5 Credits)
This course introduces students to the subject of computer-based information systems in business. Upon completion of this course students should be familiar with the basic concepts and current developments in the field of information technology and information systems; appreciate the role of information systems in business organizations; and understand the issues that employing information technology raises. Students also learn to use effectively key software tools (spreadsheets and databases) that improve personal productivity and can contribute to business value.

INSY 3421. ACCOUNTING INFORMATION SYSTEMS. (3 Credits)
This course introduces students to computer-based accounting information systems (AIS). Students master the understanding of business processes, transaction cycles and internal controls, as well as their respective current day systems components.
Prerequisites: (INSY 2300 or INSY 2299) and ACBU 2222.

INSY 3432. DATABASE SYSTEMS. (3 Credits)
This course focuses on database design principles and techniques, including entity relationship model, relational model and normalization. Students will become familiar with SQL (structured query language) and database management system capabilities. The concepts and techniques are applied to practical business data processing environments. The course includes a series of exercises on design and implementation of database applications using commonly available database management systems. It is recommended that MICS majors and ICS primary concentrators take this course concurrent with, or prior to, Systems Analysis (INSY 3441).Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.
Prerequisites: INSY 2300 or INSY 2299.

INSY 3433. PROGRAMMING WITH JAVA. (3 Credits)
(Formerly "Business Applications Development") This course provides an introduction to business applications programming concepts, techniques and tools. Students will acquire practical skills and experience with object-oriented development using the Java language. Topics include the elements of the language, common Java classes, object-oriented programming including inheritance and interfaces, and object-oriented design. Examples will be drawn from various business areas.
Attribute: ENT.
Prerequisites: HPCB 2300 or INSY 2299 or INSY 2300.

INSY 3434. NETWORK APP AND TELECOM POLICY. (3 Credits)
(Formerly Telecommunications) An intensive examination of network and Internet technologies and standards, network design, network management and business value. Topics include local area networks (LAN), public and corporate networks, Internet backbone, broadband and wireless networks, client/server computing, and telecommunication services. In addition, the course explores strategic and policy issues and trends related to networking and telecommunications, such as network neutrality. Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.
Prerequisites: INSY 2300 or INSY 2299.

INSY 3436. ST:PROGRAMMING W/PYTHON. (3 Credits)
Do you want to be able to solve business problems through programming/coding? This courses introduces key programming concepts, techniques, and tools. Students will learn programming using the widely used Python programming language.
Attribute: ENT.
Prerequisites: INSY 2299 or INSY 2300.

INSY 3437. ST: SPORTS ANALYTICS. (3 Credits)
Sports businesses achieve superior performance and gain competitive advantage by leveraging data and analytics. The course explores technologies, tools, and analytics projects in sports business.
Prerequisites: INSY 2299 or INSY 2300.

INSY 3438. ST: CYBERSECURITY IN BUS. (3 Credits)
This class will explore the concepts of cyber risk management within an enterprise. The course will help a manager develop a solid understanding of cyber risk and successful mitigation strategies to reduce an organization’s risk profile. The course will include topics such as IT control assessments, static and dynamic application security, network security, information security policies and standards, threat modeling and analysis, risk/benefits of BYOD (“bring your own device”), IOT (the Internet of Things), and many other real-time cyber topics.
Attribute: ENT.
Prerequisites: INSY 2299 or INSY 2300.

INSY 3441. SYSTEMS ANALYSIS. (3 Credits)
An introduction to the process of developing information systems. Emphasizes soliciting business, user, and functional requirements, and building conceptual models that help to analyze these requirements. Major topics include project identification, selection, and planning; requirements solicitation, development, and management; business process modeling; and traditional and object-oriented system analysis techniques. It is recommended that MICS majors and ICS primary concentrators take Database Systems (INSY 3432) concurrent with, or prior to, this course.Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.
Prerequisites: INSY 2300 or INSY 2299.

INSY 3442. WEB APPS DESIGN AND DEVELOPMENT. (3 Credits)
(Formerly System Design) A well-designed web presence and useful web applications are essential for all companies today. This course focuses on hands-on development of web applications that create business value. Major topics include a review of project planning, system analysis, and project management; architecture design; detailed component, database, network, and (user and system) interface design; Web applications programming and testing; Web applications implementation (deployment and transition to use and support organization). It is recommended that students take Systems Analysis (INSY 3431) prior to this course.
Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.
Attributes: ENT, NMDD.
Prerequisites: INSY 2300 or INSY 2299.
INSY 3450. ST: FINTECH - AN INTRODUCTION. (3 Credits)

FinTech is a new and emerging field of technology that is disrupting the way that many companies are conducting business. FinTech has already “forever” changed many sectors including mobile payments, social media, money transfers, loans, fundraising, travel, trading and asset management. It has completely revolutionized the way companies are developing products, conducting research, establishing directed sales and marketing plans, and utilizing start-up technology. Businesses are using FinTech to expand their products and services at a fraction of its previous cost. Entrepreneurs are utilizing FinTech as a central foundation for research, funding, and product development. Customers are already utilizing FinTech as part of their daily lives - mobile apps, social media, banking, online shopping, entertainment and gaming. This course will introduce students to the breadth of FinTech, and touch upon the technical underpinnings.

Attribute: ENT.
Prerequisites: INSY 2299 or INSY 2300.

INSY 4410. IT-DRIVEN GLOBAL SUPPLY CHAIN. (3 Credits)

(Formerly Info Sys in Global Context) This course provides an understanding of the information needs of global business organizations and how information technology can be leveraged for business success on a global scale focusing on global supply chain management systems and business issues. The course examines the role of IT in global firms through a combination of discussions and projects. Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.

Attribute: GLBB.
Prerequisites: INSY 2300 or INSY 2299.

INSY 4411. ST: HEALTHCARE INFO TECH. (3 Credits)

Introduces students to the subject of health information technology (HIT) and describes the organizational context surrounding the implementation, use and management of HIT. Examines the concepts, applications, and strategies of HIT. Key concepts include the role of HIT in enabling quality, safety and efficiency of health care delivery. The course surveys the various types of HIT including electronic health records, clinical decision support systems, master patient indexes, analytics, telemedicine, etc.

Prerequisites: INSY 2299 or INSY 2300.

INSY 4412. ST: IT & SUSTAINABILITY. (3 Credits)

This course discusses the transformative role of information and communication technologies (ICTs) in enabling sustainability. ICT’s effect on sustainability dimensions are felt at both the macro, societal level, as well as at the business level. These include ICT’s positive impact on development, education, environment, health care, power, transportation, and others. Simultaneously, ICT’s themselves are subject to sustainability practices, for example, green computing. Additional topics include the design of smart cities, digital divide, the knowledge society, rebound effects, governance, and world development indicators. Students working in groups will analyze several contemporary cases form a global perspective and also develop IT-based sustainability plan.

Attribute: ENT.
Prerequisites: INSY 2299 or INSY 2300.

INSY 4430. THE LAW OF INNOVATION. (3 Credits)

The course examines the legal issues that technology entrepreneurs will face as they launch their for-profit, not-for-profit, or both for-profit and not-for-profit businesses. Topics will include business formation; corporate social responsibility; copyright, trademark, patent, trade secret, and privacy contract law (traditional, on the internet, nondisclosure/ noncompete agreements, and tech licensing); good practices for using open source software. We will present both for-profit and not-for-profit practical examples for each topic. The course requires reading the assigned text, which will include judicial opinions and scholarly articles. You will be encouraged to thoroughly read and discuss these sources. Industry experts will provide insights throughout the course as guest speakers. Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.

Attribute: ENT.
Prerequisites: INSY 2300 or INSY 2299.

INSY 4431. WEB ANALYTICS. (3 Credits)

In a global market where Internet usage has increased dramatically, it's becoming increasingly critical for businesses to be more aware of how their potential customers can find them via online search, understand the value of social media and understand website performance measures. Web analytics course aims to discover useful knowledge from Web hyperlinks, page content and usage log. The course covers the following topics: mining and integration of useful web content information, web structure analysis, social network analysis, web traffic and visitor analysis, Search Engine Optimization (SEO) and Pay-Per-Check (PPC) model in Search Engine Marketing (SEM). The course is a combination of lecture, case studies, hands-on exercises and a real world project. Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.

Attributes: ENT, NMDD.
Prerequisites: INSY 2300 or INSY 2299.

INSY 4432. MOBILE COMMERCE & APPS. (3 Credits)

Roughly two-thirds of the world’s population participates in the new mobile economy. Leveraging the mobile marketplace requires a conceptual understanding of mobile-commerce as well as the practical skills needed to create the next generation of wireless enabled goods and services. This course will provide both, using a combination of global case studies and hands-on experience in building mobile applications for handheld devices. Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.

Attributes: ENT, NMDD.
Prerequisites: INSY 2299 or INSY 2300.

INSY 4434. ST: DATA MINING FOR BUSINESS. (3 Credits)

This course discusses data-mining techniques and their use in strategic business decision-making. It is a hands-on course that provides an understanding of the key methods of data visualization, exploration, association, classification, prediction, time-series forecasting, clustering, induction techniques, neural networks, and other methods. Students work in teams on solving a business problem of their choice, applying data-mining tools to real data. Prerequisite: INSY 2299 or 2300.

Attribute: ENT.
Prerequisites: INSY 2299 or INSY 2300.
INSY 4435. ST: AIS CONSULTING PROJECT. (3 Credits)
Students define and implement controls to accurately capture and process data and to protect information assets against internal and external risks. Working in teams and under the guidance of a faculty mentor, students develop client solutions that are rooted in rigorous analysis. At the end of the term, students present their project findings to the client and receive client feedback. Students acquire consulting and project-management skills, and they network with industry professionals in the accounting and information system areas. Prerequisite: INSY 2299 or 2300, ACGB 2222 and 2223.
Prerequisites: INSY 2299 or INSY 2300 and (ACBU 2222 and ACBU 2223).

INSY 4449. ENTERPRISE SYSTEMS. (3 Credits)
(Formerly Enterprise Integration) This course provides an overview of issues related to implementing and managing information systems that enable enterprise-wide integration in organizations. This course focuses on ERP systems. Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.
Prerequisites: INSY 2300 or INSY 2299.

INSY 4460. DATA WAREHOUSING. (3 Credits)
In this course students will explore issues related to implementing a data warehouse for business intelligence applications. Topics discussed include the use of decision support systems; business intelligence and business analytics; the separation between operational and decision support databases; designing and implementing data warehouses; loading and refreshing data warehouses; the use of tools to retrieve data from a warehouse; and the use of online analytical processing (OLAP) and related tools to analyze data. Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.
Attribute: ENT.
Prerequisites: INSY 2300 or INSY 2299.

INSY 4505. E-COMMERCE. (3 Credits)
Internet technologies have become an important platform for business and commerce. This course introduces students to technologies, concepts, and business issues related to e-business and e-commerce. Topics include novel digital business models, applications and strategies; business-to-business and business-to-consumer e-commerce, digital marketing and advertising, social networks and technologies, security and privacy and intellectual property protection. A web authoring package will be used as a tool to assist us in gaining hands-on skills. Cross-listed with MKBU 4504. Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.
Attributes: ENT, NMDD.
Prerequisites: INSY 2300 or INSY 2299.

INSY 4506. BUSINESS ANALYTICS. (3 Credits)
This course introduces Business Analytics and such related concepts and techniques as Business Intelligence (BI), data analytics, data warehousing, and data mining. It explores how business analytics can help in improving management decision-support effectiveness in such functional areas as marketing, finance, and manufacturing. The course is intended for business students in general and not just IS/IT specialists. In addition to conceptual material, students will gain substantial hands-on experience with a set of BI tools. Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.
Attribute: ENT.
Prerequisites: INSY 2300 or INSY 2299.

INSY 4507. PROJECT MANAGEMENT. (3 Credits)
This course provides the project management skills needed to develop information and communications systems on time and within budget. It concentrates on methods and issues of organizing, planning and controlling of projects and the use of computer-based project management tools. Cross-listed with MGBU 4507. Prerequisite: INSY 2299 or INSY 2300 or HPCB 2300.
Prerequisites: INSY 2300 or INSY 2299.

INSY 4508. BUSINESS MODELING WITH SPREADSHEETS. (3 Credits)
(Formerly “Advanced Spreadsheet Methods”) Spreadsheets have become the near-exclusive tool used by millions of managers in analyzing business problems. Nowadays, spreadsheets contain many powerful tools that can be used to analyze more sophisticated models and make better decisions. This course introduces students to many advanced features in Microsoft Excel and the key ideas of modeling and management decision making that will be important throughout their careers. Students will learn to build and analyze decision-making models in Excel. The emphasis is “hands-on” use of Microsoft Excel and its add-ins. Students will have opportunities to model and solve various representative practical problems in class and in homework using Excel. Students are expected to have basic understanding of Microsoft Excel prior to enrolling in this class.
Prerequisites: INSY 2300 or INSY 2299.

INSY 4706. HONORS PROJECT 2 - INFO SYS. (3 Credits)
Honors project in Info Systems.

INSY 4800. GLOBAL INFORMATION TECHNOLOGY STRATEGY AND MANAGEMENT. (3 Credits)
(Formerly Information Resources Management) Information technology is playing an increasingly significant role in businesses’ global strategies. To be effective, one needs to understand how to use information technology to counter competitive forces and exploit opportunities created by globalization and electronic commerce. This capstone course addresses the issues involved in managing information systems resources in a global environment, including long-term planning for information systems, acquiring and implementing information systems resources, data center management, capacity planning and introduction of new technologies. The students will examine political and organizational issues in information systems implementation through case studies of global firms and class discussions. Prerequisite: Completion of at least two ICS upper-level courses; senior standing . Attribute: GLBB.
Prerequisites: (INSY 2300 or INSY 2299).

INSY 4999. INDEPENDENT STUDY. (1.5-3 Credits)