

INFORMATION, TECHNOLOGY, AND OPERATIONS

Courses

Information Systems (INSY) 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)

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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.

Attributes: FTIS, PRQU.

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).

Attribute: FTIS.

Prerequisites: INSY 2300 or INSY 2299 or HPCB 2300.

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.

Attributes: ENT, FTIS.

Prerequisites: HPCB 2300 or INSY 2299 or INSY 2300.

INSY 3436. ST: Programming with Python. (3 Credits)

Do you want to be able to solve business problems through programming and coding? This course introduces key concepts, techniques, and tools. Students will learn to program using the widely used Python programming language. For students new to programming, this is the recommended introductory course.

Attributes: ACIS, 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.

Attribute: SJOR.

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.

Attribute: FTIS.

Prerequisites: INSY 2300 or INSY 2299 or HPCB 2300.

INSY 3442. Web Apps Design and Development. (3 Credits)

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; and web applications implementation (deployment and transition to use and support organization). Languages covered include HTML, CSS, JavaScript, and PHP. Note: It is recommended that students take Systems Analysis (INSY 3431) prior to this course.

Attributes: ENT, NMAC, NMDD.

Prerequisites: INSY 2300 or INSY 2299 or HPCB 2300.

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 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 and 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 from a global perspective and also develop and IT-based sustainability plan.

Attributes: ENT, SOIN.

Prerequisites: INSY 2299 or INSY 2300.

INSY 4413. ST: Digital Technology and Social Justice. (3 Credits)

This course will examine the social impacts of advances in digital technologies on society. The topics covered in the course will include the digital divide, technology-enabled classroom and remote learning, the effect of technology on employment opportunities and social mobility, AI and the future of work, and the role of social media platforms in forming opinions about “others” (as defined by race, gender, nationality), e-government, and uneven access to government services. While our primary focus will be on how technology changes affect underprivileged minorities in the U.S., we will also examine the effects of uneven development across different nations. The course will be run as a research seminar. Each student, working individually or in groups, is expected to undertake research on digital technology and social justice topics. The course is open to Gabelli School of Business graduate students and undergraduate seniors.

Prerequisites: (INSY 2299 and INSY 2301) or INSY 2300.

INSY 4414. ST: Ethics of Data Analytics and AI. (3 Credits)

This class provides a comprehensive understanding of the data market and artificial intelligence (AI) business from an ethical perspective. Data analytics opens a set of possibilities and improvements for decisions in business. However, it introduces new risks and moral challenges. This course aims to explore the ethical implications of data analytics within business, with a focus on AI systems. We will study concepts such as privacy, surveillance, power, justice, and accountability related to the production and use of data. The classes will be tied to discussions of a current case (an article or two) following a theory or concept. Our readings include work from philosophy, law, computer science, economics, and AI ethics. The goal is to provide students with the tools to develop critical thinking toward data analytics with ethical frameworks, theories, concepts, and real-world examples.

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.

Attributes: ENT, NMAC, NMDD, NMMI.

Prerequisites: INSY 2300 or INSY 2299 or HPCB 2300.

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.

Attributes: ENT, NMAC, NMDD.

Prerequisites: INSY 2299 or INSY 2300.

INSY 4433. Advanced Python for Business. (3 Credits)

This course covers advanced Python programming using examples in several business areas, including Finance, Marketing, Supply Chain, and Healthcare. Python topics include: - Integrating Python with spreadsheets, databases, Web pages, and Web services - Hands-on exposure to a diverse set of Python packages (in the context of different business areas) - Techniques and tools for building Python-based systems: defining requirements, system design, unit testing, and source code control Using Python for specific analytics models is also covered, including statistics, simulation, optimization, and machine learning.

Attribute: FTIS.

Prerequisite: INSY 3436.

INSY 4434. ST: Data Mining for Business. (3 Credits)

This course introduces students to data mining techniques and their use in business decision-making. It is a hands-on course that provides an understanding of the primary methods in classification and prediction. Students work in teams to solve business problems by applying data mining tools with real-world data sets.

Attributes: OCIT, ENT, FTIS.

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.

Attribute: ACIS.

Prerequisites: INSY 2299 or INSY 2300 and (ACBU 2222 and ACBU 2223).

INSY 4505. E-Commerce. (3 Credits)

Entrepreneurs use new technologies to create radically new online markets. These markets allow trading partners to find each other more efficiently and trade goods and services previously thought not possible. Such innovations also pose new challenges: How should car services match drivers with passengers? How should housing brokers select which listings to show to a guest who is searching for accommodation? How can car owners trust short-term renters? Should e-commerce platforms compete with affiliated sellers with store brands? How do online platforms price their products? You will learn how to analyze online markets, how to address their fundamental problems, and how to develop and evaluate business plans related to online markets. We will (i) examine the characteristic problems of “traditional” e-commerce platforms and their typical solutions; (ii) develop the basic conceptual, analytic, and data science tools used to address challenges encountered in the budding area of two-sided online marketplaces; and (iii) learn how to design, conduct, and interpret experiments to optimize the operations of online markets. Lectures will be supplemented by hands-on sessions in which the concepts and techniques discussed will be applied to real-world data (no prior programming experience is required).

Attributes: ENT, NMAC, NMDD.

Prerequisites: INSY 2300 or INSY 2299 or HPCB 2300.

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.

Attributes: OCIT, ENT, FTIS.

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.

Attribute: OCIT.

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.

Attributes: OCIT, ACIS, FTIS, PRQU.

Prerequisites: INSY 2300 or INSY 2299.

INSY 4706. Honors Thesis II - Info Sys. (3 Credits)

Honors project in Info Systems.

INSY 4800. Global Information Technology Strategy and Management. (3 Credits)

Information Technology has become one of the most important strategic tools in business, as businesses have gone global in the new “flat” world. Companies that leverage technology creatively and effectively are poised for outsized opportunities and increased profitability. Information technology is examined from both a general manager and IT department perspective under different organizational frameworks. The goal is to explore how managers evaluate and utilize existing and emerging technologies for process improvement and new business ventures on a global scale.

Attributes: ACIS, GLBB, PRQU.

Prerequisites: (INSY 2300 or INSY 2299).

INSY 4999. Independent Study. (1.5 to 3 Credits)

INSY Independent Study.

Operations (OPBU) Courses

OPBU 3438. Operations and Supply Chain Management. (3 Credits)

The operations function within an organization is responsible for managing the process flow that an organization has to use to produce a product, deliver a service, or both. Operations managers are responsible for the design, daily operation, and improvement of these processes. This course provides an introduction to the field of operations management to understand the key decisions and see how these decisions directly impact an organization’s competitiveness and market performance.

Prerequisites: MGBU 2142 or HPCB 4703 or ECON 2142 or SABU 2142.

OPBU 3442. ST: Health Care Operations Mgt. (3 Credits)

Health Care Operations Management is a discipline that integrates scientific principles of operations management to determine the most effective and efficient methods to support patient care delivery. The biggest challenge in health care is to provide high quality care while at the same time keeping cost down. As such, all health care sectors must be driven by process management, quality improvement, information technology, knowledge management, and resource alignment. This course addresses the challenge in many ways, from the design of patient flow to streamlined process, from resource management to supply chain management, from quality control to patient safety, from forecasting to capacity planning, from continuous improvement to project management.

Attributes: OCST, PRQU.

OPBU 3449. ST: Process Mgt & Six Sigma. (3 Credits)

This course focuses on process management and how to improve organizational processes by using a body of knowledge known as Six Sigma. A process is the unity of multiple activities that transform required inputs into desired outputs. Poorly-designed processes produce defective goods and services that lead to customer dissatisfaction and a higher level of internal and external failure cost. Therefore, continually improving process performance is critical to organizations' survival and success. Class lectures, discussions, and case studies in the course cover the methods and tools used for a Six Sigma project, such as project selection, process mapping and analysis, data collection, statistical data analysis, root-cause analysis, and creative thinking for both continual and breakthrough improvements.

Prerequisite: ACBU 2223.

OPBU 3451. ST: Team Dynamics. (3 Credits)

This course is designed to help students understand team dynamics, be a more productive team member, build teams, lead teams, and address team challenges. Through a combination of lectures and team-based activities, students will learn about concepts such as team design, team performance, team identity, decision making, conflict in teams, creativity, leadership, and diversity in teams.

Attributes: OCMG, OPMA.

OPBU 3453. ST: Business Dynamics. (3 Credits)

Managers and business leaders need to make sense of a complex and fast-changing business landscape. They need to map, analyze, and manage complexity to achieve superior performance. This course introduces systems thinking, as well as associated modeling methods, techniques, and software tools that are essential to master complexity and drive business performance. The course explores models, model-based thinking, complex system dynamics, network dynamics, and other computational modeling approaches. These skills can be used to understand system structure and dynamic behavior across a variety of business domains and applications, including business transformation, digital transformation, business model design, and sustainability. Case studies across a variety of industries and a group project add to the student learning experience.

OPBU 3454. ST: Sustainable Supply Chain. (3 Credits)

Supply chain management is vital for companies to compete in the global economy. Traditional thinking of cost minimization and lead-time reduction, however, can lead to logistics designs with significant environmental costs. Sustainable supply chain practices aim to respond to the market demand for eco-friendly products and processes while fulfilling corporate social responsibility. This course introduces concepts and models for supply chain design and performance measurement. Sample case studies include carbon dioxide emission reduction through improved supply chain management and the mechanism of the carbon market.

Attribute: PRQU.

OPBU 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 projects, and the use of computer-based project management tools.

Attribute: OCST.

OPBU 4999. Independent Study. (1 to 3 Credits)

Independent Study.

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