

# Information Systems (INSY)

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## **INSY 3001 Introduction to Information Systems (3 credits)**

Provides future information systems users with a broad overview of information systems and applications used in organizations. Topics include the impact of technology on business, the software development life cycle, introduction to databases, business intelligence and analytics, introduction to enterprise architecture, innovation, infrastructure (Cloud), networking, security, ethical use of information systems and other business software applications. Students are involved in designing and creating a database system.

*Prerequisite:* Soph. stndg.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%203001>)

## **INSY 3986 Internship Work Period (0 credits)**

S/U grade assessment.

*Prerequisite:* INSY 3001, or ACCO 4050 for ACCO majors; cons. of prog. dir. and cons. of Business Career Center. Consent required.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%203986>)

## **INSY 4051 Business Applications Development (3 credits)**

An introduction to business applications design and development. Introductory topics include software product development, the Software Development Lifecycle, Agile (SCRUM), user experience design tools for wire-framing and mockup development, user story development, software architecture and technical design, object-oriented programming, data structures and programming logic design, database and external API integration, mobile and web applications development. Students work in groups and also participate in semester-long projects to design and build an innovative software application prototype.

*Prerequisite:* INSY 3001, or ACCO 4050 for ACCO majors.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204051>)

## **INSY 4052 Database Management Systems (3 credits)**

Introduces a number of fundamental concepts of database management systems used in enterprise-level organizations. Topics may include data modeling (conceptual, logical); SQL programming language; management and administration of databases including index tuning, concurrency control, data security, backup and recovery; and emerging topics such as distributed and NoSQL databases. Students work on semester-long projects to design and implement a relational database.

*Prerequisite:* INSY 3001, or ACCO 4050 for ACCO majors.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204052>)

## **INSY 4053 Project Management (3 credits)**

A fundamental understanding of how to manage a project using concepts and tools, while leveraging best practices, is essential. Students learn to properly initiate and plan a project, and explore the different project methodologies. Additionally, students learn the behavioral skills necessary to successfully launch, lead and realize benefits from projects in profit and nonprofit organizations. While providing a project management framework, Information Systems majors may decide on a software implementation, Operations and Supply Chain Management majors may focus on new product design or product innovation, Marketing majors might select a CRM implementation and Accounting or Finance majors may choose an Fintech implementation.

*Prerequisite:* INSY 3001, or ACCO 4050 for ACCO majors, or cons. of instr.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204053>)

## **INSY 4054 Emerging Technologies (3 credits)**

Advances in technologies have fundamentally changed the way companies conduct business and create value for their customers. Business professionals must understand these emerging technologies to creatively leverage them for business solutions and integrate them with existing systems. Familiarizes students with an array of leading edge technologies; helps them understand their business feasibilities in financial, marketing, operations and other business functions; and examines social, economic and ethical impact of these technologies. Topics may include: machine learning and AI, internet of things (IoT), digital assistants, autonomous vehicles, brain-machine interfaces (BMIs), blockchain, 5G/6G, VR/AR, biometrics, cloud computing, digital ecosystems, ethics in AI, and privacy and security.

*Prerequisite:* INSY 3001, or ACCO 4050 for ACCO majors; and INSY 4051 or BUAN 3066; or other programming course with cons. of instr.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204054>)

**INSY 4055 Web-based Applications (3 credits)**

Focuses on designing and developing Web-based applications using a variety of programming languages and tools. Students are exposed to Internet application development architecture. Class projects include developing business-to-consumer (B2C) and business-to business (B2B) applications, among others. Upon completion, students understand the challenges, technologies, and issues in developing and deploying Web-based applications.

*Prerequisite:* INSY 4051 or COSC 1010 or cons. of instr.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204055>)

**INSY 4056 Information Systems Governance (3 credits)**

Focuses on the major processes, frameworks and relational mechanisms within the corporate structure that ensure the effective, efficient and protected use of information systems and technologies, investments in IS, assets, systems, processes and human capital resources. Reviews structures around how organizations align IS strategy with business strategy to ensure that companies stay on track to achieve their strategies and goals and implement solid and repeatable methods to deliver, support and measure an IS organization's performance. Generally viewed as a Board of Director's or executive level responsibility, information systems governance is best deployed as part of the IS practice and culture.

*Prerequisite:* INSY 3001 or ACCO 4050; Jr. stdng.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204056>)

**INSY 4156 Privacy and Security (3 credits)**

Covers technical safeguards that can prevent disruption of service, data tampering and theft. Topics include risk assessment, management policies, authentication, encryption, digital signatures, authorization procedures, government standards, international law and vendor offerings. From a business perspective, the issue of what constitutes authorization for both collection and release of personal data is reviewed. To the extent that corporations have an ethical obligation not to sell or divulge customer data, safeguards and legal limitations to prevent this is also reviewed. Case studies, projects and research reports are used for evaluation.

*Prerequisite:* INSY 3001 or ACCO 4050.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204156>)

**INSY 4158 Systems Analysis and Design (3 credits)**

Prepares future Information Systems (IS) professionals to apply established and evolving methodologies for the analysis and design of an information systems solution. Students learn how to gather and analyze user requirements for new systems and design appropriate solutions. Students work with live projects from small and non-profit organizations to gain real-world experience while enhancing teamwork, communication and project management skills.

*Prerequisite:* Two courses from: INSY 4051, INSY 4052, INSY 4053, INSY 4054 or INSY 4055.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204158>)

**INSY 4931 Topics in Information Systems (1-3 credits)**

Topics vary.

*Prerequisite:* INSY 3001.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204931>)

**INSY 4986 Information Systems Internship - Grading Period (3 credits)**

S/U grade assessment.

*Prerequisite:* INSY 3986; cons. of prog. dir. and cons. of Business Career Center. Consent required.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204986>)

**INSY 4989 Information Systems Internship Work and Grading Period (3 credits)**

S/U grade assessment.

*Prerequisite:* INSY 3001, or ACCO 4050 for ACCO majors, cons. of prog. dir. and cons. of Business Career Center. Consent required.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204989>)

**INSY 4995 Independent Study in Information Systems (1-4 credits)**

Faculty-supervised, independent study/research of a specific area or topic in information systems.

*Prerequisite:* Cons. of dept. ch. Consent required.

*Level of Study:* Undergraduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%204995>)

**INSY 5054 Emerging Technologies (3 credits)**

Advances in technologies have fundamentally changed the way companies conduct business and create value for their customers. Business professionals must understand these emerging technologies to creatively leverage them for business solutions and integrate them with existing systems. Familiarizes students with an array of leading edge technologies; helps them understand their business feasibilities in financial, marketing, operations and other business functions; and examines social, economic and ethical impact of these technologies. Topics may include: machine learning and AI, internet of things (IoT), digital assistants, autonomous vehicles, brain-machine interfaces (BMIs), blockchain, 5G/6G, VR/AR, biometrics, cloud computing, digital ecosystems, ethics in AI, and privacy and security.

*Prerequisite:* Cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%205054>)

**INSY 5056 Information Systems Governance (3 credits)**

Focuses on the major processes, frameworks and relational mechanisms within the corporate structure that ensure the effective, efficient and protected use of information systems and technologies, investments in IS, assets, systems, processes and human capital resources. Reviews structures around how organizations align IS strategy with business strategy to ensure that companies stay on track to achieve their strategies and goals and implement solid and repeatable methods to deliver, support and measure an IS organization's performance. Generally viewed as a Board of Director's or executive level responsibility, information systems governance is best deployed as part of the IS practice and culture.

*Prerequisite:* Admitted to graduate ACCO, ACAN, or ECON program; or BUAD and MBA 6070; or cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%205056>)

**INSY 5156 Privacy and Security (3 credits)**

Covers technical safeguards that can prevent disruption of service, data tampering and theft. Topics include risk assessment, management policies, authentication, encryption, digital signatures, authorization procedures, government standards, international law and vendor offerings. From a business perspective, the issue of what constitutes authorization for both collection and release of personal data is reviewed. To the extent that corporations have an ethical obligation not to sell or divulge customer data, safeguards and legal limitations to prevent this is also reviewed. Case studies, projects and research reports are used for evaluation.

*Prerequisite:* Admitted to graduate ACCO or ECON; or BUAD and MBA 6070; or cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%205156>)

**INSY 5931 Topics in Information Systems (1-3 credits)**

Topics vary.

*Prerequisite:* Admitted to graduate ACCO, COSC, ECON, or MSSC program; or BUAD and MBA 6070; or cons. of M.B.A. prog. dir. Prerequisites vary depending on topic.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%205931>)

**INSY 6151 Enterprise Systems in Supply Chain Management (3 credits)**

Focuses on how a system like ERP supports and integrates core business processes within an organization and across its supply chains. The format is a combination of lectures and in-class exercises using SAP's ERP system. Includes hands-on working experience (through simulation) in manufacturing and distribution using SAP in the following areas: Sales Order Process, Purchasing, MRP, Production Ordering, Accounting and Forecasting.

*Prerequisite:* Admitted to graduate ACCO or ECON program; or admitted to the graduate BUAD program and MBA 6070; or cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%206151>)

**INSY 6153 Project Management (3 credits)**

Provides a holistic view of project management. Focuses on impact of effective project management on myriad aspects of the organization and includes the following topics: alignment of projects with organizational strategy; project elements, organization, and structure; estimating project times and costs; developing a project plan; risk management; resource and project scheduling and management; being an effective project manager, managing project teams; managing inter-organizational relationships; progress and performance measurement and evaluation; managing international projects and project teams; vendor management; management of cross-functional project teams. Supplemental activities include: hands-on project management, speakers from Project Management Institute and industry and project management software, e.g., MS Project, SIM software.

*Prerequisite:* Admitted to graduate ACCO, BUAD, ECON, or MGMT program; or cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%206153>)

**INSY 6156 Privacy and Security (3 credits)**

Covers technical safeguards that can prevent disruption of service, data tampering and theft. Topics include risk assessment, management policies, authentication, encryption, digital signatures, authorization procedures, government standards, international law and vendor offerings. Reviews the issue of what constitutes authorization for both collection and release of personal data from a business perspective. Reviews safeguards and legal limitations to prevent the selling or divulging of customer data, since corporations have an ethical obligation not to release such data. Case studies, projects and research reports are used for evaluation.

*Prerequisite:* Admitted to graduate ACCO or ECON program; or admitted to the graduate BUAD program and MBA 6070; or cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%206156>)

**INSY 6157 Global Information Systems Outsourcing (3 credits)**

Discusses the evolution of information systems (IS) and business process outsourcing with a focus on offshore software development. Covers the rationale, different models, country providers, criteria for success, skill sets and impact of offshore outsourcing on an organization's strategy. Methods are readings, speakers, case studies and research papers.

*Prerequisite:* Admitted to graduate ACCO or ECON program; or admitted to the graduate BUAD program and MBA 6070; or cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%206157>)

**INSY 6158 Systems Analysis and Design (3 credits)**

Analyze, model and design business system and process requirements using common tools and methodologies. Apply concepts from class to a chosen, real-life systems development project.

*Prerequisite:* Admitted to graduate ACCO or ECON program; or admitted to the graduate BUAD program and MBA 6070; or cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%206158>)

**INSY 6159 Design and Management of Database Systems (3 credits)**

Introduces a number of fundamental concepts of database management systems used in enterprise-level organizations. Topics include: data modeling (conceptual, logical, entity-relationship, etc.); SQL query language, Microsoft Access; management and administration of databases including index tuning, concurrency control, data security, backup and recovery; and emerging topics such as distributed and NoSQL databases. Covers data visualization and also discusses big data and data analytics. Students work on semester-long projects to design and implement a relational database.

*Prerequisite:* Admitted to graduate ACCO or ECON program; or admitted to the graduate BUAD program and MBA 6070; or cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%206159>)

**INSY 6200 Digital Innovation Strategies (3 credits)**

Understand and assess the impact of emerging technology trends such as Blockchain, cognitive technologies, green IT, smart cities, deep learning and artificial intelligence and cloud computing, among others. Taking a strategic lens, evaluate the disruptive potential of emerging technologies and apply innovation adoption models to develop a strategic vision for new technology adoption. In doing so, learners explore opportunities that these technologies present to their own firms, risks associated with adoption and integration of these innovations, and global and societal implications of emerging technology adoption.

*Prerequisite:* Admitted to graduate ACCO or ECON program; or admitted to the graduate BUAD program and MBA 6070; or cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%206200>)

**INSY 6931 Topics in Information Systems (1-3 credits)**

Topics vary.

*Prerequisite:* Admitted to graduate ACCO or ECON program; or admitted to the graduate BUAD program and MBA 6070; or cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%206931>)

**INSY 6995 Independent Study in Information Systems (1-3 credits)**

Faculty-supervised, independent study/research of a specific area or topic in Information Systems.

*Prerequisite:* Cons. of M.B.A. prog. dir.

*Level of Study:* Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=INSY%206995>)