

# INFORMATION SYSTEMS (IS)

## IS 5000 - Enterprise Architecture and Systems Infrastructure

3 Credits

Explores the process of translating business vision and strategy into information systems applications that support the business function. The scope of the course covers the people, processes, data, technologies and their relationships to one another and to the external environment. (Offered occasionally)

### Restrictions:

Enrollment limited to students in the Schl for Professional Studies college.

## IS 5100 - Information Systems Strategy and Management

3 Credits

Explores the issues and approaches to evaluate technology evolution and formulate strategies to create efficient and effective information systems plans and policies. This course covers the concepts and tools used to understand how technology change creates new organizational opportunities based on disruptive innovation-growth. (Offered occasionally)

**Prerequisite(s):** IS 5000 with a grade of C or higher

### Restrictions:

Enrollment limited to students in the Schl for Professional Studies college.

## IS 5101 - AI-Enhanced Software Development Practice

3 Credits

This course explores the integration of artificial intelligence tools and methodologies into software engineering workflows, emphasizing agile development, automated testing, and code generation. Students will leverage AI-driven platforms for requirements analysis, design optimization, and deployment in cloud environments, while embedding security principles such as secure coding and vulnerability mitigation throughout the process. The course applies software engineering to real-world scenarios in industries like healthcare and finance, fostering AI fluency and ethical decision-making. Designed to complement the concurrent User-Centric Software Design and Innovation course, it provides hands-on experience in building scalable, secure, AI-augmented applications.

## IS 5102 - User-Centric Software Design and Innovation

3 Credits

This course focuses on applying user experience (UX) design principles and innovation management within software engineering to create intuitive, user-focused applications for emerging technology contexts. Topics include human-centered design methodologies, prototyping, and change management strategies. Security is inherently integrated through privacy-by-design and secure user interaction principles.

## IS 5103 - Scalable Software Systems for Data-Intensive Applications

3 Credits

This course focuses on advanced software engineering techniques for designing and managing large-scale systems supporting data intensive workloads. Topics include microservices architecture, cloud-native development, and performance optimization, with security integrated through secure API design, access controls, and resilience against data breaches. Students will customize projects to align with concentrations like data science or robotics, applying software engineering to create efficient, maintainable, secure systems. This course builds on prior technical foundations to emphasize scalability and system-level design.

## IS 5200 - Software Development

3 Credits

Explores the current programming methods and practices used to specify, design, build, test, and deliver reliable software applications and systems. Topical areas include software assurance, reliability and security principles. (Offered occasionally)

**Prerequisite(s):** IS 5000 with a grade of C or higher; IS 5100 with a grade of C or higher

### Restrictions:

Enrollment limited to students in the Schl for Professional Studies college.

## IS 5400 - Managing a Secure Enterprise

3 Credits

Covers security principles, controls, and monitoring technologies from both a network defense and offensive perspective. The course provides a broad look at system continuity, risk management and the tools used for network security. The course culminates in the design and implementation of a systematic plan for defending organizational networks from internal and external threats. (Offered occasionally)

**Prerequisite(s):** IS 5000 with a grade of C or higher

### Restrictions:

Enrollment limited to students in the Schl for Professional Studies college.

## IS 5500 - Advanced Software Development

3 Credits

Builds upon the concepts and principles discussed in IS5200 and focuses on how to develop robust transaction processing applications using multiple data sources. Topical areas covered include concepts and applications relating to server-side application development and cloud-based storage access. (Offered occasionally)

**Prerequisite(s):** IS 5000 with a grade of C or higher

### Restrictions:

Enrollment limited to students in the Schl for Professional Studies college.

## IS 5600 - Mobile and Web Application Development

3 Credits

Cultivates essential skills required to create robust, secure, and high performance applications that run in the mobile and web environments. This course emphasizes industry standard theory and design techniques used for positive and effective interface development and user experience.

**Prerequisite(s):** IS 5000 with a grade of C or higher

### Restrictions:

Enrollment limited to students in the Schl for Professional Studies college.

## IS 5700 - Information Systems Consulting

3 Credits

This course equips students with key concepts and skills that are requisites for job roles in Information Systems (IS) Consulting. The course focuses on practical tools for business process modeling, IS project implementation planning and change management, risk mitigation, and effective communication. Students will learn to align project goals with organizational objectives, ensuring successful project implementation and mitigating risks associated with implementation. The course also helps students develop the ability to present complex information cogently to critical stakeholders.

**IS 5800 - Cloud Computing**

3 Credits

This course explores advanced cloud computing concepts, focusing on the design and implementation of cloud platforms. It covers Platform as a Service (PaaS) and Infrastructure as a Service (IaaS) models, industry standards, and best practices for managing cloud infrastructure. Students will work with real-world scenarios to design, deploy, and manage cloud-based platforms. Key focus areas include cloud architecture, automation, orchestration, security, and disaster recovery.

**IS 5850 - Advanced Cloud Computing Architectures and Applications**

3 Credits

This course examines advanced cloud computing architectures and their applications in three critical domains: cloud-based analytics, cybersecurity, and cloud-native application development and deployment. Students will explore key architectural concepts in the areas of scalability, elasticity, fault tolerance, and their significance in various cloud service models such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). The course emphasizes designing and implementing solutions to address security challenges, developing and deploying applications using cloud-native methodologies, by utilizing technologies from industry-leading providers.

**Prerequisite(s):** IS 5800; CYBR 5240

**IS 5910 - Internship Experience in Information Systems**

1-3 Credits (Repeatable up to 3 credits)

This course provides students with an opportunity to complete an internship that requires them to apply the concepts and skills learned in their specific program of study. Prior to registration, students intending to complete this course are expected to have a formal letter from the organization providing details of the work expected from the student during the 8-weeks that constitute the length of the internship. The letter must be signed by an individual with appropriate authority from the organization sponsoring the internship. In addition, the internship is subject to approval by the program director who will assess the alignment between.

**Restrictions:**

Enrollment limited to students in the Schl for Professional Studies college.

**Attributes:** Special Approval Required

**IS 5960 - Masters Research Project**

3 Credits

The Master's Research Project (MRP) emphasizes a synthesis and demonstration of the competencies gained during a student's time in the MS Information Systems program.

**Restrictions:**

Enrollment limited to students in the Schl for Professional Studies college.

**Attributes:** Special Approval Required