

INFORMATION SYSTEMS & TECHNOLOGY ONLINE COURSES

The following list is indicative of our course offerings. Not all courses are offered every year. Unless otherwise indicated, all of these are four-unit courses.

IST 302

Databases. This course is intended for students to gain a deep understanding of the important concepts and techniques of physical relational database design and a fundamental understanding of the architecture of modern database management systems. Students will focus on topics that include:

- Technical Foundations
- Relational Model
- Structured Query Language (SQL) for commercial relational DBMS, including more advanced features such as complex retrieval queries, triggers, and views
- SQL programming techniques including SQL procedure language for Microsoft SQL Server
- System Implementation Techniques: Query Optimization, Transaction Processing Concepts, Concurrency Control, Recovery Techniques, Database Security
- Data warehousing: Overview of Data Warehousing Architecture, Dimensional Modeling

IST 303

Software Development. This is a one-semester introduction to software development, focusing on agile development with Python 3 and related tools. The primary goal of the course is to prepare students to develop software for small-to-medium size projects typical of those found in CISAT research and coursework. A secondary goal is to expose students to software development techniques and tools common to the IS&T community. The course does not address in detail any non-agile software development methods or traditional project management.

IST 304

Communications and Networking. This is a graduate level course covering TCP/IP Internet communication protocol design, emerging wireless data networking and networked applications. The Internet has become your business e-infrastructure. The success of the Internet and web-based services is bringing new ways of doing business in a global world and is constantly pushing the frontier with several exciting next generation networking technologies and applications. These call for increased demand on business managers to better understand the networks they manage and Information System professionals to design, implement and operate these advanced networks to provide efficient and reliable services to their users.

IST 320

Design Methods and Tools. This class is an introduction to the methods and tools used in optimizing design choices for the benefit of the user's experience on digital and non-digital platforms. Students learn a variety of techniques that are integral in completing design projects including but not limited to: requirements gathering, design approaches, research methods, prototyping, and evaluation. These techniques will enable students to solve real world design problems in both digital and non-digital contexts.

IST321

Leading Digital Business Transformation. The course positions students at the high point of the IT leadership activity, where goals and priorities are set. They will be able to understand and practice the key ingredients to uncover digital business opportunities and deliver the right business value through successful IT transformation programs.

IST 327:

Design Thinking and Creative Problem Solving. This course gives students an overview of the foundations of the design thinking discipline. It is designed to provide a conceptual framework and practical tools to equip students with the methods and tools of design thinking and creative problem solving. The course utilizes academic articles, case studies, success and failure stories, relevant videos, discussions and team work as the main pedagogical tools to present and analyze content. All steps related to the design thinking process are covered. Students will practice the defining steps of real world problems, as well as the steps of creative problem solving - ideation, creation, co-creation, implementation and evaluation. There are five case studies, a final exam and a team project where students will implement and practice all steps of the design thinking process.

IST 344

Data Analytics and Information Visualization. The purpose of this course is to provide you with the opportunity to gain deep understanding of the important principles and techniques used to translate organizational data into visual stories. These can be used by managers to make data-driven decisions, as well as other real-world applications. You will also gain practical experience in building a business intelligence application that starts from business requirements elicitation, to data preparation, and then to visual presentation. Main topics of this course include basic concepts of information visualization, best practices for data extraction, transformation, and loading process; fundamentals of data preparation and understanding; principles of dashboard design; and an overview of predictive analytics.

IST 340

Knowledge Discovery and Data Mining. In this course we will introduce students to important concepts, models and techniques of KDDM for modern organizations. The major course objectives are:

- To provide students with the opportunity to gain a deep understanding of the important concepts, models, and techniques of the data mining/knowledge discovery processes
- To provide students with the opportunity to gain practical experience in the development of a data-mining application
- To provide students with the opportunity to gain knowledge on the features and functionalities of state-of-the-art data-mining software

IST 346

Data Warehouse Design and Implementation for Business Intelligence. In this course we explore important concepts and techniques in the design and implementation of data warehouses (DW). We will examine: the data warehouse architecture; the data warehousing development process including logical and physical design issues, technical factors (e.g. hardware, Data Warehouse and DBMS technologies), and implementation considerations (e.g. data extraction, clean-up and transformation). We will also introduce On-Line Analytical Processing (OLAP).

CENTER FOR INFORMATION SYSTEMS & TECHNOLOGY

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