Econ 590: INFORMATICS: APPLICATIONS

This course considers information technology from the perspective of consumers, enterprise users, information provision (accounting), and a public utility.

1. Bringing it all together: Interworking and Convergence
   - Mobility and ubiquitous connectivity
   - Secure access and strong authentication
   - Private networks and quality of service considerations
   - Intelligent networks
   - Applications and services for consumers and enterprise users

2. Building an Enterprise Data Center for the 21st Century
   - Evaluating connectivity and communication needs
   - Planning the interfaces and support structures
   - Leveraging existing infrastructure for future expansion

3. Using Information for Decision-Making in the Business Enterprise System:
   - Using information to manage risk
     - Identification and Measurement
     - Reporting and Disclosure
     - Statutory Requirements
   - Integrating knowledge from an economics, finance & accounting perspectives

   Text: Stephen G. Ryan, *Financial Instruments and Institutions: Accounting and Disclosure Rules*, Wiley 2002: Chapters 1, 2, 7, 5, 9: Accounting perspectives[1]
   Chapter 1: Financial Instruments and Institutions
   Chapter 2: Nature and Regulation of Depository Institutions
   Chapter 5: Credit Risk and Losses: Banks
   Financial Accounting Standards Board (FASB). *Financial Accounting Research System (FARS)*. Installed on PCs.

4. Capstone: The Role of Informatics in the Electricity Business
   - Motivation:
     - Electricity system as an example of a large-scale enterprise system
     - Restructuring electricity from regulation to competition
   - Information Requirement in Electricity: Planning, Operations, Customer Service, Bulk Power Markets, Metering Data
   - Cybersecurity Issues in Electricity: Interoperability issues, the evolution and establishment of standards
   - Decision Support Tools in Electricity:
     - Forecasting studies (load and demand forecasts; supply plans; market plans)

[1] Economic aspects of these concepts are covered in Econ. 564. This course will focus on specific information aspects of risk management, considering the business enterprise as a system.

- Decentralized decision making in competitive environments: requirements and impacts
- Environmental analysis
- Fuel planning
- Real-time operations tools
- Operational planning and analysis