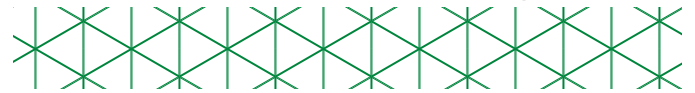


# FINANCIAL TECHNOLOGY

find a career at  
the intersection of  
information systems  
and finance

With the aim of making financial systems more efficient, fintech exists at the intersection of information systems and finance. FinTech is a range of disruptive technological approaches within the money, market, marketplace, and financial

infrastructure spheres. From cryptocurrencies and blockchain to enterprise software and asset management via robo-advisors, financial service functions are increasingly based on growing and innovative technology.



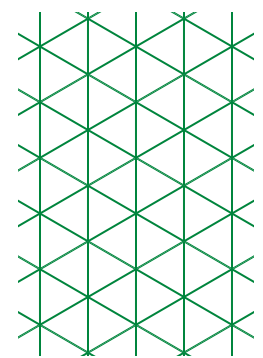
## Admission requirements

The graduate certificate program is open to all individuals holding a bachelor's, master's or Ph.D. degree in areas such as business, social sciences, technology, engineering, or related disciplines.

In order to receive a Graduate Certificate, the student must have an average graduate cumulative grade point of 3.0 or better on a 4.0 scale in the certificate courses taken. Students admitted only to the certificate program will have non-degree graduate status but will earn graduate credit for the courses they complete.

If the four-course sequence approved by the graduate advisor is completed with a grade of B or better in each of the courses taken, the student will, upon application, be admitted to the Master of Business Administration or to the Master of Science in Information Science and Technology. The certificate courses taken by students admitted to the program will count towards the MBA program or the M.S. in Information Science and Technology degree program.

Once admitted to the Certificate program, a student will be given three years to complete the program as long as a B or better average is maintained in the courses taken.



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# COURSE DESCRIPTIONS

Most courses are offered both on campus and via distance education

## REQUIRED CORE COURSES

### **FIN 5310 Financial Modeling**

This course is built on finance theory, financial analysis, and quantitative methods from prerequisite courses. The course will extensively use Excel spreadsheets to design and construct integrated financial models. The objective is to offer students opportunities to experience hands-on numerical analyses, company valuation, and dynamic projections. Prerequisite: Finance 2150 or Graduate Standing.

### **IST 5420 Business Analytics and Data Science**

Analysis of large business data sets via statistical summaries, cross-tabulation, correlation, and variance matrices. Techniques in model selection, prediction, and validation utilizing general linear and logistic regression, Bayesian methods, clustering, and visualization. Extensive programming in R is expected. Prerequisite: Calculus, Statistics, and Programming knowledge.

## ELECTIVE COURSES (CHOOSE ONE)

### **FIN 5160 Corporate Finance II**

This course provides a rigorous and consistent presentation of the theory of financial decisions. Capital markets are analyzed under assumptions of risk aversion and uncertainty. Models of modern portfolio theory are discussed including the CAPM and the Modigliani-Miller analysis. Prerequisite: Finance 2150.

### **FIN 5260 Investments I**

Introduction to fundamental elements of investment analysis. Students learn financial tools and gain necessary knowledge to select among alternative financial assets. Real world experience includes stock analysis, portfolio simulations and interactions with professionals in the securities industry. Prerequisite: Finance 2150.

### **BUS 5230 Financial Statement Analysis**

Analysis and interpretation of financial statements for profitability analysis, credit analysis, and other business analyses that rely on financial data. Introduces emerging roles of accounting analytics. Illustrates data analytics concepts and techniques to detect earning management, predict fraud, and to provide insights into other business strategies. Prerequisite: Finance 2150 or graduate standing

## ELECTIVE COURSES (CHOOSE ONE)

### **BUS 6723 Artificial Intelligence, Robotics, and Information Systems Management**

The course, designed for business executives, covers management of information to revitalize business processes, improve business decision-making, embrace emerging and disruptive technologies, and gain competitive advantages. The course also covers implications of AI, automation, machine learning, and robotics on business and society. MBA core. Prerequisite: Graduate standing.

### **IST 5520 Data Science and machine Learning with Python**

Examines data science methodologies for scraping, manipulating, transforming, cleaning, visualizing, summarizing, and modeling large-scale data as well as supervised and unsupervised machine learning algorithms applied in various business analytics and data science scenarios. Python libraries such as Pandas, NumPy, Matplotlib, and Scikit-learn are utilized. Prerequisites: Graduate Standing and Knowledge of Calculus, Statistics, and Programming.

### **IST 6450 Information Visualization**

Topics/activities include: the visualization development framework, traditional presentations of data, human perception and aesthetics, colorspace theory, visualization algorithms and software, case studies of modern topology, research into visualization algorithms and implementations in R. Students will produce significant programs and visualizations. Prerequisites: Statistics, Calculus, and Programming Knowledge.

### **IST 6780 Advanced Human and Organizational Factors in Cybersecurity**

In-depth examination of human and organizational factors in cybersecurity and information assurance. Examines current challenges to protecting the integrity, availability, and confidentiality of information, as well as tools, methods, principles, and analytics for fraud prevention, insider threat detection, and forensic investigations. Project Required. Prerequisite: None, but recommended: IS&T 3333 or IS&T 6336 or Comp Sci 3600 or another introductory cybersecurity or information assurance course.

### **ERP 5210 Performance Dashboards, Scoreboards, and Data Visualization**

This course will study different performance management systems including dashboards, management cockpit, scorecards, and strategy maps in an organization. SAP's BW, Business Objects Xcelsius, Crystal Reports, Sybase Unwired Platform will be used to develop the applications. Prerequisite: ERP 2110 or preceded or accompanied by ERP 5110.