

# FINANCIAL TECHNOLOGY, BACHELOR OF SCIENCE (B.S.) WITH A CONCENTRATION IN ACTUARIAL SCIENCE

The Bachelor of Science in Financial Technology offers concentrations in actuarial science and financial engineering. The program provides quantitatively oriented students the opportunity to apply mathematical, statistical and programming tools to the financial, risk management and actuarial disciplines. Designed to meet the growing need for quantitative modeling and analysis in finance, risk management and actuarial science, the program is technical and interdisciplinary in nature. The curriculum emphasizes courses in finance, statistics and mathematics with supporting courses in related areas.

The actuarial science concentration provides excellent preparation for the basic professional examinations and continued study in actuarial science. Students who complete this concentration also may find employment in areas such as quantitative applications in corporate and public financial policy, actuarial modeling and forecasting, reserves computation and rate making, and computer and information systems in the financial services and risk management industries.

## Learning goals

- To support career advancement over time by giving students the academic foundation in finance and actuarial sciences needed for continued professional development
- To help students develop the professional skills that will be needed by the businesses and organizations that hire graduates
- To help students develop ethical awareness so that they are able to deal with an ethical dilemma in the workplace

## Student learning outcomes

Upon completing this program, students will know and know how to do the following.

- Students will be able to identify and use relevant data to calculate appropriate quantitative measures that help in making informed actuarial calculations.
- Students will be able to describe and expound on competing propositions in a structured, organized and deliberate manner with comparisons, anecdotal evidence and descriptive analysis.
- Students will be able to express the analytic, quantitative and ethical dimensions of a business problem and proposed solutions in a clear, well-organized manner that is free of bias or distortions.

## Special requirements

Students in the actuarial science concentration must attain a minimum grade of C in MATH 200, MATH 307, STAT 309, STAT 310, FIRE 319. A student receiving a grade below C may repeat the course one time to raise the grade to the required level. In addition, a minimum GPA of 2.5 must be maintained. Students who fall below a GPA of 2.5 will be placed on program probation and will be given one semester to return to the minimum GPA of 2.5. Students who do not return to the required

minimum cumulative GPA of 2.5 after two semesters will be dismissed from the financial technology major. Students who do not satisfactorily attain the minimum grade of C in one course after two attempts will be dismissed from the financial technology major. In concert with the academic adviser of the department, an appeal may be submitted to the chair of the department. A student must have a minimum GPA of 2.5 to graduate from the program. At least 30 hours of the required business courses for the Bachelor of Science must be taken at VCU.

Students admitted into this program must place into MATH 200 to continue in the program. No more than three credits in physical education courses may be applied to the degree. Many courses are offered irregularly; please work with an adviser for optimal course sequencing.

Credit for **SPCH 121** or **SPCH 321** will substitute for **BUSN 225**, and no more than three credits of these courses may be applied toward a business degree. Students who earned a minimum grade of B in either **ECON 203** or **ECON 205** at VCU may substitute that credit for **ECON 210**.

The pass/fail grading policy may not be used for many course requirements. Students should check with their academic adviser before taking the pass/fail grading option.

The School of Business has special academic policies (<http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/>), including policies on transfer credits, that apply to all undergraduate degrees. The pass/fail grading policy may not be used for courses that can satisfy major degree requirements.

## Degree requirements for Financial Technology, Bachelor of Science (B.S.) with a concentration in actuarial science

Course	Title	Hours
General education ( <a href="http://bulletin.vcu.edu/undergraduate/undergraduate-study/general-education-curriculum/">http://bulletin.vcu.edu/undergraduate/undergraduate-study/general-education-curriculum/</a> )		
Select 12-13 credits from general education foundations and 17-18 credits from areas of inquiry.		30
<b>Major requirements</b>		
• Major core requirements		
CMSC 210	Computers and Programming	3
FIRE 309	Risk Management and Insurance	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
FIRE 321	Intermediate Financial Management	3
FIRE 417	Security Analysis and Portfolio Management	3
FIRE 451	Options, Futures and Swaps	3
FIRE 479	Managing Financial Risk	3
INFO 320	Business Intelligence and Data Mining	3
MATH 201	Calculus with Analytic Geometry II	4
MATH 211	Mathematical Structures	3
MATH 307	Multivariate Calculus	4
STAT 309	Introduction to Probability Theory	3
• Concentration requirements		
FIRE 319	Financial Mathematics	3
FIRE 320	Actuarial Probability Concepts	3

STAT 310	Introduction to Statistical Inference	3
STAT 212	Concepts of Statistics	3
Concentration electives (choose four)		12
ACCT 303	Intermediate Accounting I	
ACCT 304	Intermediate Accounting II	
BNFO 201	Computing Skills and Concepts for Bioinformatics	
BUSN 400 & BUSN 401	Principles of Consulting and International Consulting Practicum (must get credit for both courses to count toward degree completion)	
BUSN 301	Career and Professional Development	
BUSN 323	Legal Environment of Business	
CMSC 330	Data Science Skills	
ECON 307	Money and Banking	
ECON 403	Introduction to Mathematical Economics	
FIRE 305	Principles of Real Estate	
FIRE 316	International Financial Management	
FIRE 429	Property and Liability Insurance	
FIRE 439	Life Cycle Risk Management	
FIRE 449	Employee Benefit Planning	
FIRE 459	Insurance Law	
FIRE 461	Cases in Financial Management	
FIRE 491	Topics in Finance, Insurance and Real Estate	
FIRE 492	Independent Study in Finance, Insurance and Real Estate	
FIRE 493	Internship in Finance, Insurance and Real Estate	
FIRE 496	Practicum in Portfolio Management	
FIRE 540	Financial Analytics	
INFO 300	Information Technology Infrastructure	
INFO 350	Programming	
MATH 310	Linear Algebra	
MGMT 310	Managing People in Organizations	
MGMT 434	Strategic Management	
MKTG 301	Marketing Principles	
MKTG 350	Customer and Marketing Analytics	
SCMA 320	Production/Operations Management	
SCMA 339	Quantitative Solutions for Supply Chain Management	
STAT 321	Introduction to Statistical Computing	
STAT 403	Introduction to Stochastic Processes	

**Ancillary requirements**

## • Ancillary core courses

ACCT 203 & ACCT 204	Introduction to Accounting I and Introduction to Accounting II	6
BUSN 225	Winning Presentations	3
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
ECON 211	Principles of Macroeconomics	3

FIRE 311	Financial Management	3
• Additional ancillary requirements		
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4

**Open electives**

Select any course. <sup>1</sup>		13
Total Hours		123

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Students may choose electives to reach the minimum total of 123 credits.

**The minimum number of credit hours required for this degree is 123.**

What follows is a sample plan that meets the prescribed requirements within a four-year course of study at VCU. Please contact your adviser before beginning course work toward a degree.

**Freshman year**

Fall semester		Hours
ECON 210	Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)	3
MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Focused Inquiry I (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry I		
General education course		3
General education course		3
Term Hours:		16

**Spring semester**

ECON 211	Principles of Macroeconomics	3
MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course video for Focused Inquiry II		
General education course		3
Term Hours:		16

**Sophomore year**

Fall semester		Hours
ACCT 203	Introduction to Accounting I	3
FIRE 309	Risk Management and Insurance	3
FIRE 319	Financial Mathematics	3
UNIV 200	Inquiry and the Craft of Argument (satisfies general education UNIV foundations)	3
General education course		3
Term Hours:		15

**Spring semester**

ACCT 204	Introduction to Accounting II	3
BUSN 225	Winning Presentations	3
FIRE 320	Actuarial Probability Concepts	3
MATH 211	Mathematical Structures	3
General education course		3
Term Hours:		15

**Junior year**
**Fall semester**

FIRE 311	Financial Management	3
INFO 320	Business Intelligence and Data Mining	3
STAT 309	Introduction to Probability Theory	3
MATH 307	Multivariate Calculus	4
Concentration elective		3
Term Hours:		16

**Spring semester**

CMSC 210	Computers and Programming	3
FIRE 312	Financial Modeling	3
FIRE 317	Investments	3
STAT 310	Introduction to Statistical Inference	3
Open elective		3
Term Hours:		15

**Senior year**
**Fall semester**

FIRE 321	Intermediate Financial Management	3
FIRE 451	Options, Futures and Swaps	3
FIRE 479	Managing Financial Risk	3
Concentration elective		3
Open elective		3
Term Hours:		15

**Spring semester**

FIRE 417	Security Analysis and Portfolio Management	3
Concentration electives		6
Open electives		6
Term Hours:		15
Total Hours:		123

The minimum number of credit hours required for this degree is 123.

**FIRE 291. Topics in Finance, Insurance and Real Estate. 1-3 Hours.**

Variable hours. Variable credit. Maximum of 3 credits per topic. Prerequisite: permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

**FIRE 301. Personal Financial Planning. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Designed to assist individuals and households in understanding and making common financial decisions. Units include income and expenditure, credit, borrowing, banking, savings, insurance, home buying, investment, and estate planning.

**FIRE 305. Principles of Real Estate. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Focuses on the language, principles, practices and laws that govern the real estate enterprise, including property rights, legal elements, physical aspects of location and production, brokerage, valuation, ethical dimensions, development, financing and land use.

**FIRE 306. Regulatory Aspects of Safety and Risk Control. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Examines political, scientific and social concepts of risk that influence the regulation of certain societal hazards and threats. Includes a survey of federal and state laws, regulations and standards that impact upon employment, the environment, industrial security, consumer protection and occupational safety and health.

**FIRE 307. System Safety. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Addresses the concepts and practices of system safety; included are basic system concepts, application of system safety techniques, qualitative and quantitative applications such as fault-free, failure-mode-and-effects, MORT and cost-benefit analyses.

**FIRE 308. Incident Investigation and Analysis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Reviews various conceptual and analytical models used in accident/incident investigation strategies and reporting systems, report formats, data collection methods, causal inferences, problem identification and data analysis; in-depth case studies and epidemiological reviews of recent events will be emphasized.

**FIRE 309. Risk and Insurance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Nature of risk; insurance and other risk-handling methods; examination of basic life, health, property and liability principles and coverages.

**FIRE 311. Financial Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 200 or BUSN 212\*; ACCT 203 or ACCT 202 (for non-business majors); and ECON 210, or ECON 203 or ECON 205 with a minimum grade of B. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing) or 24 credits with minimum cumulative GPA of 2.5. Principles of optimal financial policy in the procurement and management of wealth by profit-seeking enterprises; the application of theory to financial decisions involving cash flow, capital structure and capital budgeting. \*Formerly MGMT 212, SCMA 212.

**FIRE 312. Financial Modeling. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 311 with a minimum grade of C; and SCMA 301, STAT 210, STAT 212 or STAT 541. Enrollment is restricted to students with majors or concentrations offered by the Department of Finance, Insurance and Real Estate who have completed at least 54 credit hours (junior standing). This course is designed to introduce students to a wide array of primarily Excel techniques used in financial model building. Students will be introduced to techniques such as data tables, solver, matrix manipulation, array formulas, pivot tables, etc., to create financial models that are common in the areas of finance, risk management and real estate finance.

**FIRE 313. Financial Management for Small Business. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). This course emphasizes financial management needs for entrepreneurs or persons who expect to be employed in closely held corporations.

**FIRE 315. Real Property Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Real property economics, planning, construction, marketing and management of leased properties.

**FIRE 316. International Financial Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). Financial management of business in an international environment. Emphasis on tools and techniques to prepare financial managers of multinational firms to effectively respond to the challenges of the international environment. Crosslisted as: INTL 416.

**FIRE 317. Investments. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 311; and SCMA 301, STAT 210, STAT 212, STAT 312 or STAT 541. This course is restricted to students who have completed at least 54 credit hours (junior standing). An analysis of the market for long-term corporate securities. Emphasis is given to the valuation of bonds, common stocks, options and convertible securities, and portfolio concepts. Designed to provide an understanding of the functioning of an efficient market.

**FIRE 319. Financial Mathematics. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 200 or MATH 201, either with a minimum grade of B. The course provides an understanding of the fundamental concepts of financial mathematics, and how those concepts are applied in calculating present and accumulated values for various streams of cash flows as a basis for future use in reserving, valuation, pricing, asset/liability management, investment income, capital budgeting and valuing contingent cash flows.

**FIRE 320. Actuarial Probability Concepts. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 200 with a minimum grade of B. Probability models, random variables, expectation, special distributions and the central limit theorem. The theory is illustrated by numerous examples from actuarial and financial fields. This class covers parts of CAS Exam 1 and SOA Exam P, which are required for the designation of associate of the Society of Actuaries and Casualty Actuarial Society.

**FIRE 321. Intermediate Financial Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 312 with a minimum grade of C. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Advanced topics in financial management with emphasis on the theoretical bases for the valuation of the firm.

**FIRE 325. Real Estate Law. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. This course is restricted to students who have completed at least 54 credit hours (junior standing). Legal fundamentals of real estate including contracts, risk management, environmental and ethical issues, concepts of title, title examination, easements, conveyances, liens and recording statutes affecting real estate.

**FIRE 329. E-business Risk Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 202. This course is restricted to students who have completed at least 54 credit hours (junior standing). An analysis of the risks associated with e-business and the practice of e-commerce.

**FIRE 359. Issues in Risk Management and Insurance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. The course focuses on timely issues in the field of risk management and insurance. Students will consider the role of government and the insurance industry as well as the use of other financial solutions in handling risks faced by businesses and individuals. The topics covered change to reflect current societal and industry issues and to explore new risk management innovations.

**FIRE 417. Security Analysis and Portfolio Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 317 with a minimum grade of C. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). A detailed analysis of stocks and bonds as well as options and futures. Emphasis is on models for portfolio selection, revision and performance evaluation.

**FIRE 419. Advanced Risk and Insurance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 311. This course is restricted to students who have completed at least 54 credit hours (junior standing). It is a risk and insurance course with emphasis on more mathematical computations and analysis. Market, credit and operational risks are covered, along with legal and catastrophic risk assessments. Sustainability is important to this course. Topics covered include (but not limited to) forecasting of losses – loss triangles and computations of reserves; risk mapping and the risk management matrix; cost/benefit and risk/award analyses; pricing; capital structure, risk-based capital and economic capital; financial statements using audit techniques (accounting); insurance regulation; life cycle financial risks; insurance solutions to property/casualty and life/health risks.

**FIRE 424. Property and Liability Insurance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309. This course is restricted to students who have completed at least 54 credit hours (junior standing). Property and liability risk identification and measurement. Major commercial line coverages including fire, marine, automobile, general liability, worker's compensation, fidelity and surety bonds.

**FIRE 425. Real Estate Appraisal. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 305 or FIRE 316. This course is restricted to students who have completed at least 54 credit hours (junior standing). Theory and practice of real property valuation from fundamental concepts to complex income-producing properties and partial-interest valuations. Technology-related tools are employed in the course, including financial modeling with various software programs.

**FIRE 429. Property and Liability Insurance. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Regulated property and liability risks with emphasis on regulated and non-regulated markets and products. The course includes major commercial line coverages including fire, marine, automobile, general liability, worker's compensation, fidelity and surety bonds and unusual new risks, including catastrophic risks covered by alternative, less-regulated insurance solutions. The course includes sustainability issues and the way to mitigate natural and man-made catastrophes and InsurTech.

**FIRE 435. Real Estate Finance and Capital Markets. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 305. This course is restricted to students who have completed at least 54 credit hours (junior standing). Instruments, techniques and institutions of real estate finance; the mortgage market; financing process; mortgage risk analysis; creative financing; emphasis on policies and procedures used in financing residential and commercial properties and their interaction with the capital markets. Technology-related tools are employed in the course, including financial modeling with various software programs.

**FIRE 439. Life Cycle Risk Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). The function, nature and uses of life and health insurance and annuities; operational aspects of life and health insurance companies. Management of group life, health, disability and retirement plans. Governmental and employers' solutions to life cycle risks – sustainability through social insurance programs, group insurance and innovations. The course reflects the dynamic nature of this field and covers cost/benefits analysis, best solutions to risks and a complete portfolio project of plan design, cost considerations, funding, regulation and tax considerations. Full-time students who pass this course can receive credit for the CLU HS323 examination from the American College. See instructor for details.

**FIRE 441. Funds Management in Financial Institutions. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 312 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Funds management techniques for selected financial institutions including investment companies (mutual funds), life and casualty insurers, savings and loans, mutual savings banks, commercial banks, and pension funds.

**FIRE 444. Occupational Safety, Health and Security. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Covers the principles and practices, and regulatory dimensions of occupational safety, health and security. Causes of workplace health hazard exposures, accidents and domestic and international industrial violence are studied with an emphasis on prevention. Characteristics of effective occupational safety, health and workplace security programs are studied to facilitate understanding and application in the workplace.

**FIRE 445. Real Estate Investment Analysis. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 425 and FIRE 435. This course is restricted to students who have completed at least 54 credit hours (junior standing). This is the capstone course for real estate majors and covers the analytical methods and tools useful for analyzing commercial real estate investments, including a multidisciplinary approach to financial, spatial and social economics, which builds a cohesive framework for analyzing complex investment decisions emphasizing fundamentals of property and financial markets.

**FIRE 449. Employee Benefit Planning. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Management of group life, health, disability and retirement plans. Governmental and employers' solutions to life cycle risks – sustainability through social insurance programs, group insurance and innovations. The course reflects the dynamic nature of this field and requires cost/benefits analysis, best solutions to risks and a complete portfolio project of plan design, cost considerations, funding, regulation and tax considerations.

**FIRE 451. Options, Futures and Swaps. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 321 with a minimum grade of C or FIRE 317 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Analysis and valuation of speculative securities and markets, including options, futures and swaps, with emphasis on their use for hedging and speculative purposes. Major valuation models and term structure models are discussed with applications to problems in finance considered.

**FIRE 459. Insurance Law. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. The course covers the legal concepts and doctrines applicable to insurance. Fundamental legal aspects of all risks and aspects of sustainability. The course provides legislative issues for all solutions to life cycles risks: life and health insurance, pensions, catastrophes (natural and man-made such as terrorism) and property and liability insurance.

**FIRE 461. Cases in Financial Management. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 321 with a minimum grade of C. This course is restricted to students who have completed at least 54 credit hours (junior standing). Cases involving financial decisions for various forms of business enterprises.

**FIRE 469. Advanced Property/Casualty Insurance: Alternative Markets. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309 or FIRE 419. This course is restricted to students who have completed at least 54 credit hours (junior standing). Property and liability risk with emphasis on alternative, less-regulated insurance solutions to all types of risks. The course includes sustainability issues and the way to mitigate natural and man-made catastrophes including sophisticated modeling and techniques. The course covers Lloyds of London; excess and surplus lines carriers; risk retention group, self-insurance, captives and shadow insurance; reinsurance; multilayers of coverage; catastrophe bonds; terrorism; regulation; liability issues globally; social responsibility.

**FIRE 479. Managing Financial Risk. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 309. Pre- or corequisite: FIRE 317. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Sources of financial risk. Measurement and uses of enterprisewide financial risk techniques. A variety of analytical tools will be used to learn about value at risk, credit risk, stress testing, financial risk management and actuarial models, and how to manage financial risk.

**FIRE 491. Topics in Finance, Insurance and Real Estate. 1-3 Hours.**

Semester course; variable hours. Variable credit. Maximum of 3 credits per course; maximum total of 6 credits for all topic courses. Prerequisite: junior standing. An in-depth study of a selected business topic, to be announced in advance.

**FIRE 492. Independent Study in Finance, Insurance and Real Estate. 1-3 Hours.**

Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites: junior or senior standing as a major in a business curriculum and approval of adviser and department chair prior to course registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

**FIRE 493. Internship in Finance, Insurance and Real Estate. 3 Hours.**

Semester course; 3 credits. Course restricted to students with junior standing and a concentration in finance or risk management and insurance or a declared major in financial technology or real estate, a minimum GPA of 2.5, and permission of the Department of Finance, Insurance and Real Estate chair or the director of the insurance or real estate programs. Involves students in a meaningful experience in finance, insurance or real estate. Intention to enroll must be indicated to the chair or appropriate program director.

**FIRE 496. Practicum in Portfolio Management. 3 Hours.**

Semester course; 3 practicum hours. 3 credits. Enrollment is restricted to students with senior standing and two prior semesters of active participation in the VCU Student Managed Investment Portfolio. Registration for this course requires permission of the Department of Finance, Insurance and Real Estate chair or the director of the Capital Markets Center. This course is an experiential learning project in applied portfolio management. Students will perform fundamental security analysis, security selection and risk management for a real money portfolio funded by the VCU School of Business Foundation. They will also build a mock portfolio, create a detailed company valuation model and write a reflection paper.