REAL ESTATE, BACHELOR OF SCIENCE (B.S.)

The major in real estate prepares students for the graduate-level study of real estate, economics and finance, as well as careers in land development, brokerage, valuation and investment counseling, site analysis and selection, real property management, mortgage lending, and bank trust and corporate real estate departments, in addition to other real estate-related careers in the public and private sectors.

Learning goals

- To support career advancement over time by giving students the academic foundation in information systems 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.
- To ensure that students understand and can apply appropriate analytical methodologies and technology to the discipline of real estate.
- To prepare students for professional licensing, certification and/or professional designations

Student learning outcomes

Upon completing this program:

- Graduates will understand the legal foundations of real estate including contracts, options, title transfer, easements, conveyances, liens and recording statutes. Students will also understand ethical decision-making in the context of identifying ethical standards and establishing a framework for making ethical decisions.
- Graduates will be able to apply mathematical techniques to real estate financial analysis, including the financing process, mortgage risk analysis and loan underwriting.
- Graduates will be able to apply the highest and best use analysis (cost, market and income approaches) in valuing real estate property and will be able to understand/calculate the mathematics of yield capitalization.
- Graduates will be able to apply appropriate skills in evaluating real estate investments. This includes a multidisciplinary approach to financial, spatial and social economics.

Special requirements

The admission requirements for the School of Business (http://bulletin.vcu.edu/undergraduate/business/undergraduate-information/academic-policies/) detail the deadlines and other requirements for students to be admitted to one of these major programs of study. The following courses must be completed before the student may declare a specific business major: ACCT 203, ACCT 204, BUSN 201 or BUSN 205, BUSN 212 or MATH 200, BUSN 225, ECON 210, ECON 211, UNIV 111, UNIV 112 and UNIV 200.

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.

All baccalaureate degree programs in the School of Business require successful completion of the business knowledge exam as administered in BUSN 499.

Students may need to take additional mathematics courses as prerequisites to BUSN 212 or MATH 200. These credits will count as open electives in the degree program.

No more than six credits from the INFO 16X Digital Literacy courses may be applied to the degree.

No more than four credits in physical education courses may be applied to the degree.

INTL 493 may not be counted toward a business degree.

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.

Students must receive a minimum grade of C in FIRE 305, FIRE 325, FIRE 425, FIRE 435 and FIRE 445, and must have a minimum GPA of 2.0 in the remainder of the real estate major electives.

Degree requirements for Real Estate, Bachelor of Science (B.S.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE 305</td>
<td>Principles of Real Estate</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 312</td>
<td>Financial Modeling</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 325</td>
<td>Real Estate Law</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 425</td>
<td>Real Estate Appraisal</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 435</td>
<td>Real Estate Finance and Capital Markets</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 445</td>
<td>Real Estate Investment Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Major electives

- Real estate electives (select from list below) | 15 |

Ancillary requirements

- Ancillary core requirements
  - ACCT 203 & ACCT 204: Introduction to Accounting I and Introduction to Accounting II | 6 |
  - BUSN 225: Winning Presentations | 3 |
  - BUSN 301: Career and Professional Development | 1 |
  - BUSN 499: Business Knowledge Exam | 0 |
  - ECON 210: Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives) | 3 |
Real Estate, Bachelor of Science (B.S.)

ECON 211  Principles of Macroeconomics  3
FIRE 311  Financial Management  3
INFO 360  Business Information Systems  3
MGMT 303  Creativity and Ideation  3
MGMT 310  Managing People in Organizations  3
MGMT 434  Strategic Management  3
MKTG 301  Marketing Principles  3
SCMA 301  Business Statistics I  3
SCMA 320  Production/Operations Management  3

• Additional ancillary requirements

BUSN 201  Foundations of Business  1
or BUSN 205  Introduction to the World of Business  3
BUSN 212  Differential Calculus and Optimization for Business (either satisfies general education quantitative foundations)  3-4
or MATH 200  Calculus with Analytic Geometry I  3

Open electives
Select any course.  2

Total Hours  120

1

BUSN 205 satisfies general education AOI for global perspectives.

2

Students may choose electives to reach the minimum total of 120 credits.

The minimum number of credit hours required for this degree is 120.

Real estate electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>BUSN 400</td>
<td>Principles of Consulting</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 401</td>
<td>International Consulting Practicum</td>
<td>3</td>
</tr>
<tr>
<td>ECON 305</td>
<td>Public Finance</td>
<td>3</td>
</tr>
<tr>
<td>ECON 307</td>
<td>Money and Banking</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 309</td>
<td>Risk Management and Insurance</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 315</td>
<td>Real Property Management</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 317</td>
<td>Investments</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 321</td>
<td>Intermediate Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 429</td>
<td>Property and Liability Insurance</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 441</td>
<td>Funds Management in Financial Institutions</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 451</td>
<td>Options, Futures and Swaps</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 492</td>
<td>Independent Study in Finance, Insurance and Real Estate</td>
<td>1-3</td>
</tr>
<tr>
<td>FIRE 493</td>
<td>Internship in Finance, Insurance and Real Estate</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 491</td>
<td>Topics in Management</td>
<td>1-3</td>
</tr>
<tr>
<td>MKTG 315</td>
<td>Buyer Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 325</td>
<td>Business-to-business Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 335</td>
<td>Introduction to Personal Selling</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 340</td>
<td>Retail Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 430</td>
<td>Experiential Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 435</td>
<td>Selling in the Business Marketplace</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 442</td>
<td>Services Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 445</td>
<td>Nonprofit Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 448</td>
<td>Digital Marketing</td>
<td>3</td>
</tr>
<tr>
<td>URSP 304</td>
<td>Urban Social Systems</td>
<td>3</td>
</tr>
<tr>
<td>URSP 306</td>
<td>Economic Geography</td>
<td>3</td>
</tr>
<tr>
<td>URSP 310</td>
<td>Introduction to Urban and Regional Planning</td>
<td>3</td>
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</table>

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>BUSN 225</td>
<td>Winning Presentations</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 111</td>
<td>Focused Inquiry I (satisfies general education UNIV foundations)</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 201  or BUSN 205</td>
<td>Foundations of Business or Introduction to the World of Business</td>
<td>3</td>
</tr>
<tr>
<td>ECON 210</td>
<td>Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 212</td>
<td>Differential Calculus and Optimization for Business (satisfies general education quantitative foundations)</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 171</td>
<td>Mathematical Applications for Business (prerequisite for BUSN 212; counts as an open elective)</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 301  or BUSN 205</td>
<td>Career and Professional Development</td>
<td>1</td>
</tr>
</tbody>
</table>

Term Hours:  15

Sophomore year

Fall semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 203</td>
<td>Introduction to Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 212  or BUSN 205</td>
<td>Foundations of Business or Introduction to the World of Business</td>
<td>3</td>
</tr>
<tr>
<td>ECON 210</td>
<td>Principles of Microeconomics (satisfies general education BOK for social/behavioral sciences and/or AOI for global perspectives)</td>
<td>3</td>
</tr>
<tr>
<td>UNIV 200</td>
<td>Inquiry and the Craft of Argument (satisfies general education UNIV foundations)</td>
<td>3</td>
</tr>
</tbody>
</table>

Term Hours:  15

Spring semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 204</td>
<td>Introduction to Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 301</td>
<td>Career and Professional Development</td>
<td>1</td>
</tr>
</tbody>
</table>

Term Hours:  15
ECON 211  Principles of Macroeconomics  3
FIRE 305  Principles of Real Estate  3
MKTG 301  Marketing Principles  3
SCMA 301  Business Statistics I  3

Term Hours:  16

Junior year

Fall semester
FIRE 311  Financial Management  3
MGMT 303  Creativity and Ideation  3
MGMT 310  Managing People in Organizations  3
Open electives  5

Term Hours:  14

Spring semester
FIRE 312  Financial Modeling  3
FIRE 325  Real Estate Law  3
INFO 360  Business Information Systems  3
SCMA 320  Production/Operations Management  3
Real estate elective  3

Term Hours:  15

Senior year

Fall semester
BUSN 499  Business Knowledge Exam  0
FIRE 425  Real Estate Appraisal  3
FIRE 435  Real Estate Finance and Capital Markets  3
Open elective  3
Real estate electives  6

Term Hours:  15

Spring semester
FIRE 445  Real Estate Investment Analysis  3
MGMT 434  Strategic Management  3
Open elective  3
Real estate electives  6

Term Hours:  15

Total Hours:  120

The minimum number of credit hours required for this degree is 120.

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  
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 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 enterprise-wide 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.