

## WWS Major and Undergraduate Certificate of Finance Requirements

Courses that fulfill both are highlighted

### BCF Certificate of Finance Requirements

#### Prerequisites

1. Mathematics  
MAT201-202
2. Microeconomics  
**ECO 310**: Microeconomic Theory: A Mathematical Approach
3. Probability and Statistics  
**ECO 202**: Statistics and Data Analysis for Economists  
MAT 222: Introduction to Statistics  
**ORF 245**: Fundamentals of Engineering Statistics  
PSY 251: Quantitative Methods  
SOC 301: Sociological Research Methods  
**POL 345**: Quantitative Analysis and Politics  
**WWS 200**: Statistics for Social Science  
**WWS 332**: Quantitative Analysis for Public Policy  
PHY 301: Statistical Mechanics and Thermodynamics and PHY 312: Advanced Laboratory

#### Core Courses

- **ECO 362**: Financial Investment
- **ECO 363**: Corporate Finance and Financial Institutions

Elective Courses (Three, at least one from **List 1**)

#### **List 1: Financial Applications**

**COS 445**: Networks, Economics and Computing  
EAP 402: The Japanese Financial System  
ECO 326: Economics of the Internet: The Digital Revolution  
**ECO 332**: Economics of Health and Health Care  
**ECO 341**: Public Finance  
**ECO 342**: Money and Banking  
ECO 344: Macroeconomic Policy  
**ECO 348**: The Great Recession: Causes, Consequences, and Remedies  
**ECO 353**: International Monetary Economics  
ECO 361: Financial Accounting  
ECO 365: Empirical Methodology in Finance  
ECO 414: Introduction to Economic Dynamics  
**ECO 462**: Portfolio Theory and Asset Management  
ECO 463: International Financial Markets  
**ECO 464**: Corporate Restructuring  
**ECO 465**: Options, Futures and Financial Derivatives  
**ECO 466**: Fixed Income: Models and Applications  
**ECO 467**: Institutional Finance: Trading and Markets  
**ECO 468**: Behavioral Finance  
ECO 469: Valuation and Security Analysis  
**ECO 491**: Cases in Financial Risk Management

ECO 492: Asian Capital Markets  
ECO 493: Financial Crises  
ECO 494: Chinese Financial and Monetary Systems  
ORF 335: Introduction to Financial Mathematics  
ORF 350: Analysis of Big Data  
ORF 435: Financial Risk Management  
ORF 455: Energy and Commodities Markets  
POL 345: Quantitative Analysis and Politics  
POL 348: Politics and Finance  
WWS 332: Quantitative Analysis for Public Policy  
WWS 408: Finance and Public Policy  
WWS 466: Financial History  
WWS 524: Advanced Macroeconomics

## List 2: General Methodology for Finance

APC 350: Introduction to Differential Equations  
CEE 460: Risk Assessment and Management  
COS 318: Operating Systems  
COS 323: Computing for the Physical and Social Sciences  
COS 333: Advanced Programming Techniques  
COS 423: Theory of Algorithms  
COS 424: Interacting with Data  
COS 425: Database and Information Management Systems  
COS 432: Information Security  
COS 436: Human-Computer Interface Technology  
COS 444: Electronic Auctions: Theory and Practice  
COS 461: Computer Networks  
ECO 311: Macroeconomics: A Mathematical Approach  
ECO 312: Econometrics: A Mathematical Approach  
ECO 313: Econometric Applications  
ECO 315: Topics in Macroeconomics  
ECO 317: The Economics of Uncertainty  
ECO 321: Industrial Organization  
ECO 322: Theory of Contracts and the Firm  
ECO 370: American Economic History  
ECO 385: Ethics and Economics  
ECO 418: Strategy and Information  
ELE 491/EGY 491: High-Tech Entrepreneurship  
HIS 364: International Economic History in the 20th Century  
MAE 305/MAT 391: Mathematics in Engineering I (ODE, PDE)  
MAE 306/MAT 392: Mathematics in Engineering II (PDE, complex variables)  
MAT 325: Analysis I: Fourier Series and Partial Differential Equations  
MAT 330: Complex Analysis with Applications  
MAT 335: Analysis II: Complex Analysis  
MAT 385: Probability Theory  
MAT 486: Random Processes  
NEU 425/PSY 425: Neuroeconomics  
ORF 307: Optimization  
ORF 309: Probability and Stochastic Systems  
ORF 311: Optimization under Uncertainty  
ORF 374: Special Topics in Operations Research and Financial Engineering  
ORF 401: Electronic Commerce  
ORF 405: Regression and Applied Time Series  
ORF 409: Introduction to Monte Carlo Simulation  
ORF 474: Special Topics in Operations Research and Financial Engineering  
WWS 307/ECO 349: Public Economics  
WWS 340/PSY 321: Psychology of Decision Making/Judgement

## WWS Requirements

### Prerequisites

- A course in statistics
  - WWS 200 Statistics for Social Science
  - ECO 202 Statistics and Data Analysis for Economics
  - ECO 302 Econometrics
  - ECO 312 Econometrics: A Mathematical Approach
  - ORF 245 Fundamentals of Engineering Statistics
  - POL 345 Quantitative Analysis in Politics
  - POL 346 Applied Quantitative Analysis
- A course in introductory microeconomics
  - ECO 100 Introduction to Microeconomics
  - ECO 300 Microeconomic Theory
  - ECO 310 Microeconomic Theory: A Mathematical Approach
  - WWS 300 Microeconomics for Public Policy
- A course in history
  - A cross-listed course with an HIS designation may also be used
- A course in politics, sociology, or psychology
  - A cross-listed course with a respective designation may also be used

### Core Courses

- One Course in Microeconomics
  - WWS 300 Microeconomics for Public Policy
  - ECO 300 Microeconomic Theory
  - ECO 310 Microeconomic Theory: A Mathematical Approach
- One Course in Politics
  - POL 220/WWS 310 American Politics
  - POL 230/WWS 325 Introduction to Comparative Politics
  - POL 240/WWS 312 International Relations
  - POL 351/WWS 311 Politics in Developing Countries
- One Course in Sociology or Psychology
  - WWS 330 Population and Public Policy
  - WWS 333/SOC326 Law, Institutions & Public Policy
  - WWS 331/SOC/AAS Race and Public Policy
  - WWS 340 The Psychology of Decision Making and Judgment
  - WWS 344/PSY 312 Psychology of Social Influence
- One Course in Science Policy
  - WWS 350 The Environment: Science and Public Policy
  - WWS 351/COS/SOC Information Technology and Public Policy

- WWS 353/MAE 353 Science and Global Security
- WWS 354 Modern Genetics & Public Policy
- GEO 366/WWS 451 Climate Change: Scientific Basis, Policy Implications
- CEE 334/WWS 452 Global Environmental Issues
- ENV 304/WWS 455 Disease, Ecology, Economics and Policy
- One Course in Ethics
  - WWS 370/POL 308 Ethics and Public Policy
  - CHV 310/PHI 385 Practical Ethics
  - PHI 202 Introduction to Moral Philosophy
  - PHI 307/CHV 311 Systematic Ethics
  - PHI 309/CHV 309 Political Philosophy
  - PHI 319/CHV 319 Normative Ethics
  - POL 313 Global Justice
  - REL 261/CHV 261 Christian Ethics and Modern Society
  - REL 363 Perspectives on Religious Ethics

#### Finance-related Electives (Choose 4)

Note: Except for WWS and methodology courses, students may take no more than three electives from the same department or program

CEE 460 Risk Assessment and Management

COS 445 Networks, Economics and Computing

ECO 301 Macroeconomics

ECO 311 Macroeconomics: A Mathematical Approach

ECO 315 Topics in Macroeconomics

ECO 317 The Economics of Uncertainty

ECO 321 Industrial Organization

ECO 341 Public Finance

ECO 342 Money and Banking

ECO 348 The Great Recession

ECO 353 International Monetary Economics

ECO 362 Financial Investments

ECO 363 Corporate Finance and Financial Institutions

ECO 370 American Economic History

ECO 371 Topics in Country and Regional Economics: Economics of Russia and Eurasia

ECO 372 Topics in Country and Regional Economics: Economics of the European Union and Economies in Europe

ECO 373 What is the Euro Crisis Really About?

ECO 378 European Economic History

ECO 379 The Chinese Economy

ECO 386 History of Economic Thought

ECO 493 Financial Crises

ECO 414 Introduction to Economic Dynamics

ECO 462 Portfolio Theory and Asset Management

ECO 464 Corporate Restructuring  
ECO 465 Options, Futures, and Financial Derivatives  
ECO 466 Fixed Income: Models and Applications  
ECO 467 Institutional Finance, Trading and Markets  
ECO 468 Behavioral Finance and Economics  
ECO 490 Financial Accounting  
ECO 491 Cases in Financial Risk Management  
ECO 492 The Rise of Asian Capital Markets  
EGR 492 Radical Innovation in Global Markets  
HIS 379 The History of American Capitalism  
HIS 380 The United States and World Affairs  
HIS 468 The American Corporation  
HIS 474 American Economic Crises, 1873-2009  
POL 352 Comparative Political Economy  
POL 385 International Political Economy  
POL 430 Seminar in Comparative Politics: Political Economy of Africa  
SOC 342 Organizations: Management, Bureaucracy and Work  
WWS 301 International Trade  
WWS 307 Public Economics  
WWS 314 International Political Economy of East Asia (WWS 477)  
WWS 321 Business, Politics & Public Policy (WWS 482)  
WWS 340 Psychology of Decision Making and Judgment (WWS 312)  
WWS 383 Policy Aspects of Federal & State Budgeting  
WWS 408 Financial Policy WWS 466 Financial History  
WWS 332 Quantitative Analysis for Public Policy  
WWS 466 Financial History  
COS 424 Interacting with Data  
ECO 302 Econometrics  
ECO 312 Econometrics: A Mathematical Approach  
ECO 313 Econometric Applications  
ECO 418 Strategy and Information  
NEU 425 Neuroeconomics  
ORF 350 Analysis of Big Data  
ORF 405 Regression and Time Series  
POL 250 Introduction to Game Theory  
POL 346 Applied Quantitative Analysis  
POL 347 Mathematical Models in the Study of Politics  
PSY 300 Research Methods in Psychology  
PSY 311 Rationality and Human Reasoning SOC 330 Ethnographic Methods  
SOC 343 Advanced Research Methods  
SOC 356 Sociology of Science  
WWS 332 Quantitative Analysis for Public Policy  
WWS 340 Psychology of Decision Making and Judgment (WWS 312)

WWS 341 Psychology & Public Policy  
WWS 344 Psychology of Social Influence

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