

The Second Major in Financial Engineering

A second major in financial engineering is ideal for students who are interested in careers or graduate study in financial engineering, quantitative finance or related fields. This program covers classes in engineering, computer science and business.

Background Course Work: 18 units

Code	Title	Units
CSE 131	Introduction to Computer Science	3
ESE 326	Probability and Statistics for Engineering	3
or DAT 121	Managerial Statistics II	
or Econ 413	Introduction to Econometrics	
or Math 439	Linear Statistical Models	
Math 217	Differential Equations	3
Math 233	Calculus III	3
Math 309	Matrix Algebra	3
or ESE 105	Introduction to Electrical and Systems Engineering	
MEC 290	Microeconomics	3
or Econ 4011	Intermediate Microeconomic Theory	
Total Units		18

Engineering Professional Core Requirements: 15 units

Code	Title	Units
CSE 247	Data Structures and Algorithms	3
ESE 427	Financial Mathematics	3
9 credit units of electives from the following courses:		
ESE 417	Introduction to Machine Learning and Pattern Classification	3
or CSE 417T	Introduction to Machine Learning	
or CSE 427S	Cloud Computing with Big Data Applications	
ESE 4031	Optimization for Engineered Planning, Decisions and Operations	3
or ESE 415	Optimization	
ESE 4261	Statistical Methods for Data Analysis with Applications to Financial Engineering	3
CSE 240	Logic and Discrete Mathematics	3
or Math 310	Foundations for Higher Mathematics	

Olin Professional Core Requirements: 9 units

Code	Title	Units
ACCT 2610	Principles of Financial Accounting	3
FIN 340	Capital Markets and Financial Management	3
FIN 441	Investments	3
Total Units		9

Olin Elective Courses: 6 units minimum

Code	Title	Units
FIN 450F	Financial Technology: Methods and Practice	3
FIN 452	Advanced Derivative Securities	3
FIN 500Q	Quantitative Risk Management	3
FIN 500R	Topics in Quantitative Finance	1.5
FIN 532B	Data Analysis for Investments	1.5
FIN 539	Mathematical Finance	1.5
FIN 552	Fixed Income Derivatives	1.5

ESE 427 Financial Mathematics is to be taken after FIN 340 Capital Markets and Financial Management and before the 6 credit units of FIN 500+.

Students interested in this second major must complete the application and have a 3.3 or higher grade-point average to pursue this second major, which includes the cumulative GPA, the Business GPA, and the Engineering GPA. The application may be accessed via WebSTAC (<https://acadinfo.wustl.edu/WSHome/Default.aspx>)/Major Programs when the request for the second major is selected.

For more information, contact the director of the program, Vladimir Kurenok (<https://sites.wustl.edu/vladimirkurenok/>).