

QUANTITATIVE ECONOMICS MAJOR

The Bachelor's of Science in Quantitative Economics provides a range of coursework in economics and related fields to prepare students for careers in a variety of quantitative occupations as well as graduate school in economics or related fields.

Learning Goals and Outcomes

Goal 1: Students will understand how all issues in economics involve making choices in the context of scarcity.

Objective 1.1: Students will be able to explain the concept of opportunity cost.

Objective 1.2: Students will understand the concept that decision-making takes place at the margin and explain how this affects the behavior of consumers and firms.

Goal 2: Students will understand how economic agents interact.

Objective 2.1: Students will be able to explain the supply and demand model and how it is applied to input and output markets as well as the macro economy.

Goal 3: Students will be able to identify important economic variables, understand how they are measured, and explain what they tell us.

Objective 3.1: Students will be able to define and know the approximate value of some key macroeconomic variables in the US, including GDP growth, inflation, unemployment, and interest rates. Furthermore, students will know how these variables are measured, how they affect us and understand the difference between "nominal" and "real" values.

Goal 4: Students will be able to demonstrate knowledge of econometric and quantitative methodology in economics.

Objective 4.1: Students will be able to use statistical and econometric techniques for estimation and analysis.

Objective 4.2: Students will be able to apply quantitative methods to economic theories and models.

Requirements

Requirements for the Quantitative Economics Major (B.S.)

The traditional undergraduate programs includes a minimum of 120 credits distributed across three components: A General Education component divided into Signature Courses, Variable Courses, and an Integrative Learning requirement; a Major and Divisional component; and Free Electives. In addition to course requirements as specified in each area, students must complete one certified course in each of the following overlay areas¹:

1. Diversity, Globalization or Non-western Area Studies,
2. Ethics Intensive
3. Writing Intensive, and
4. Diversity

1

Overlay requirements are part of the 120 credit requirements

General Education Signature Courses

See this page about Signature courses (<https://academiccatalog.sju.edu/curricula/#signature>).

General Education Variable Courses

See this page about Variable courses (<https://academiccatalog.sju.edu/curricula/#variable>). Six to Nine courses

Code	Title	Hours
Social/Behavioral Sciences:		
ECN 101	Introductory Economics Micro	3
Math Beauty: Students should select among the following:		
MAT 131	Linear Methods	3
MAT 132	Math of Games & Politics	3
MAT 134	Math of Uncertainty:Rules/Prob	3
MAT 155	Fundamentals of Calculus	3
MAT 161	Calculus I	4

General Education Overlays

See this page about Overlays (<https://academiccatalog.sju.edu/curricula/#overlay>).

General Education Integrative Learning Component

See this page about Integrative Learning Component (<https://academiccatalog.sju.edu/curricula/#integrative-learning>). Three courses:

Code	Title	Hours
Any calculus course including:*		
MAT 123	Differential Calculus	3
or MAT 155	Fundamentals of Calculus	
or MAT 161	Calculus I	

*For students who have already completed calculus for Math Beauty or received AP calculus credit, students will complete any course in the College of Arts & Sciences

Two additional courses chosen from Math (MAT) (this is in addition to the Math Beauty requirement and the statistics requirement) or Data Science (DSC), or Computer Science (CSC) or Geographic Information Systems (GIS) or Decision System Sciences (DSS). Suggested courses include:

MAT 162	Calculus II	6
MAT 213	Calculus III	
MAT 226	Introduction to Linear Algebra	
CSC 133	Python Programming for All	
CSC 134	Databases for All	
CSC 201	Data Structures	
DSC 223	Intro Math of Data Science	
DSC 325	Essentials of Data Science	
DSS 220	Business Analytics	
GIS 101	Introduction to GIS	

GIS 201 Intermediate GIS

Total Hours 9

Major Requirements

Code	Title	Hours
ECN 101	Introductory Economics Micro	3
ECN 102	Introductory Economics Macro	3
ECN 290	Professional Prep Seminar	1
ECN 301	Microeconomic Theory	3
ECN 302	Macroeconomic Theory	3
ECN 410	Econometrics	3
Any Statistics Course, including:		3
MAT 118	Introduction to Statistics	
MAT 128	Applied Statistics	
MAT 322	Mathematical Statistics	
DSS 210	Business Statistics	
Any three of the following quantitative economics electives ¹		9
ECN 322	International Macroeconomics	
ECN 330	Economics of Labor	
ECN 350	Monetary Economics	
ECN 365	Game Theory	
ECN 375	Environmental Economics	
ECN 382	Urban Economics	
ECN 415	Economic Forecasting	
ECN 487	Research Methods	
ECN 491	Economics Internship (with department chair approval)	
Any 300/400-level ECN course		3
Experiential Learning Requirement (required starting with students entering in Fall 2023) ²		
Includes ECN491, Service-Learning course, Study abroad, The Washington Center, Independent Study – research, Summer Scholars, Winter Immersion Program (WIP), or Honors Thesis.		
Total Hours		31

1

MAT 311, MAT 322, MAT 423, ASC 401, DSS 420, DSS 435, and DSS 470 can be substituted for the above economics requirements at a maximum of two substitutions.

2

ECN 290 and Experiential Learning are required starting with students entering in Fall 2023.