

# COMPUTER SCIENCE + ECONOMICS (BS)

## Overview

Program Requirements	Quarter Hours
Liberal Studies Requirements	68
Modern Language Requirements	12
Major Requirements	100
Open Electives	12
<b>Total hours required</b>	<b>192</b>

### Learning Outcomes

- Student is able to model a computational problem, select appropriate algorithms and data structures for a solution, justify the correctness of the algorithm, and implement an application solving the problem.
- Student is able to analyze and select an algorithm based on system effects.
- Student is able to analyze the efficiency of a computational solution mathematically and validate the analysis experimentally.
- Student is able to criticize a program on the basis of its maintainability and suggest improvements.
- Economic Vocabulary and Institutions: Student can define economic concepts needed to analyze issues in the popular press and identify the function of key economic institutions, such as the Federal Reserve System.
- Economic Reasoning and Analysis: Student can employ an economic theory or model to analyze the impact of changes in economic variables.
- Impact of Government Policies: Student can assess the potential impact of government interventions on individuals, markets and/or the macroeconomy.
- Breadth of Knowledge: Student gains exposure the application of economic concepts/models in a variety of fields within economics (e.g., Labor Economics, Health Economics, Urban Economics, International Economics, Development Economics, History of Economic Thought, etc).

## Liberal Studies Requirements

The distribution of LS domain requirements is based on the existing LS requirements for Computer Science and Economics [LASS] programs. We think that is justified because the CS+ECO BS degree program embraces the multidisciplinary spirit of the LS program in that students in the program will take many more STEM courses than a student majoring in a social science would and vice versa. The Senior Capstone requirement is fulfilled via either the computer science or economics capstone course. Administration of the Liberal Studies requirements is shared by the School of Computing and the Department of Economics; any changes to the requirements must be agreed to by both units.

First Year Program	Hours
<b>Chicago Quarter</b>	
LSP 110 DISCOVER CHICAGO or LSP 111 or EXPLORE CHICAGO	4
<b>Focal Point</b>	
LSP 112 FOCAL POINT SEMINAR	4

Writing		
WRD 103	COMPOSITION AND RHETORIC I <sup>1</sup>	4
WRD 104	COMPOSITION AND RHETORIC II <sup>1</sup>	4

### Quantitative Reasoning

Not Required		
Sophomore Year		
Multiculturalism in the US		
LSP 200	SEMINAR ON RACE, POWER, AND RESISTANCE	4

### Junior Year

Experiential Learning		
One Course Required		4

Senior Year		
Capstone		
See Major Requirements		

## Learning Domains

**Arts and Literature (AL)** (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/arts-and-literature/>)

- 3 Courses Required

**Historical Inquiry (HI)** (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/historical-inquiry/>)

- 2 Courses Required

**Math and Computing (MC)** (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/math-and-computing/>)

- Not Required

**Philosophical Inquiry (PI)** (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/philosophical-inquiry/>)

- 2 Courses Required (See note below)

**Religious Dimensions (RD)** (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/religious-dimensions/>)

- 2 Courses Required (See note below)

**Scientific Inquiry (SI)** (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/scientific-inquiry/>)

- 1 Lab Course Required

**Social, Cultural, and Behavioral Inquiry (SCBI)** (<https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/social-cultural-and-behavioral-inquiry/>)

- 1 Course Required

### Major Requirements

#### Modern Language Requirement

Administration of the Modern Language Requirement is shared by the School of Computing and the department of Economics; any changes to the requirements must be agreed to by both units.

Program Requirements	Quarter Hours
Up to 3 courses required per MLR rules. Students who complete the MLR with 4 years high school language or place out of language courses via test will have the associated credit hours added to open electives.	12

## Major Requirements

The CS+ECO BS major requirements are split between the Computer Science Program Committee (CS) and the Department of Economics (ECON).

### Major Requirements: Computer Science

Course	Title	Quarter Hours
MAT 140	DISCRETE MATHEMATICS I	4
MAT 141	DISCRETE MATHEMATICS II	4
CSC 241	INTRODUCTION TO COMPUTER SCIENCE I <sup>1</sup>	4
CSC 242	INTRODUCTION TO COMPUTER SCIENCE II <sup>1</sup>	4
CSC 300	DATA STRUCTURES I	4
CSC 301	DATA STRUCTURES II	4
CSC 321	DESIGN AND ANALYSIS OF ALGORITHMS	4
CSC 373	COMPUTER SYSTEMS I	4
CSC 374	COMPUTER SYSTEMS II	4
1 course from the following:		4
CSC 347	CONCEPTS OF PROGRAMMING LANGUAGES	
CSC 376	DISTRIBUTED SYSTEMS	
SE 350	OBJECT-ORIENTED SOFTWARE DEVELOPMENT	
2 additional courses, can be any 300-level CSC, CSEC, DSC, or SE course		8

<sup>1</sup> CSC 243 Python for Programmers & a CS elective can take place of CSC 241 & CSC 242

### Major Requirements: Economics

Course	Title	Quarter Hours
ECO 105	PRINCIPLES OF MICROECONOMICS	4
ECO 106	PRINCIPLES OF MACROECONOMICS	4
ECO 304	ANALYTICS FOR ECONOMICS	4
ECO 305	INTERMEDIATE MICROECONOMICS	4
ECO 306	INTERMEDIATE MACROECONOMICS	4
MAT 137	BUSINESS STATISTICS	4
6 additional 300-level ECO elective except ECO 393 and ECO 395		24

### Senior Capstone Options

Students in the CS+ECO BS program have a choice of two Senior Capstone options, each of which is a course that fulfills the Liberal Studies Senior Capstone requirement. Administration of the Capstone

options is shared by the School of Computing and the department of Economics; any changes to the Senior Capstone requirement must be agreed to by both units.

Course	Title	Quarter Hours
One course from the following:		4
CSC 394	SOFTWARE PROJECTS	
ECO 395	CAPSTONE SEMINAR IN ECONOMICS	

### Open Electives

CS+ECO BS students have 12 open elective credit hours. Administration of the Open Electives is shared by the School of Computing and the Department of Economics, any changes to these requirements must be agreed to by faculty in both units.