

# DUAL DEGREE IN ECONOMICS (M.A.) AND DATA SCIENCE (M.S.)

## Requirements

The requirements for the Dual Degree in Economics (M.A.) and Data Science (M.S.) are as follows:

Course	Title	Credits
<b>Economics Courses</b>		
<i>Core Courses</i>		
ECON 6010	Microeconomic Theory I	3
ECON 6020	Macroeconomic Theory I	3
ECON 6910	Applied Econometrics	3
or ECON 6950	Financial Econometrics	
<i>Economics Electives</i> <sup>1</sup>		9
Three courses from any of the following areas:		
Applied Microeconomics		
Finance		
Specialized Topics		
<b>Data Science Courses</b>		
<i>Core Courses</i>		
CISC 5790	Data Mining	3
CISC 5800	Machine Learning	3
CISC 5950	Big Data Computing	3
<i>Data Science Electives</i> <sup>1</sup>		6
<i>One of the following options:</i> <sup>2</sup>		3
CISC 6080	Capstone Project in Data Science	
CISC 6085	Master's Thesis in Data Science I	
& CISC 6086	and Master's Thesis in Data Science II	
CISC 6081	Data Science Practicum (internship)	
<b>Math Core</b>		
ECON 5710	Mathematical Analysis in Economics	3
or CISC 5450	Mathematics for Data Science	
<b>Free Electives</b> <sup>3</sup>		6
<b>Total Credits</b>		<b>45</b>

<sup>1</sup> See below lists for courses that may fulfill this requirement. For students who did not complete an undergraduate major in economics and are pursuing this dual-degree program, ECON 5012 Foundations of Economics may also count as an economics elective.

<sup>2</sup> Students completing two semesters of data science thesis (6 credits) may complete one fewer 3-credit data science elective.

<sup>3</sup> Any course that counts as an economics or data science elective may fulfill this requirement.

### Applied Microeconomics elective courses

*Courses in this group have the EDAM attribute.*

Course	Title	Credits
ECON 5105	Topics in Economic History	3
ECON 5260	Epidemics and Development Policy	3
ECON 5280	Urban Economics	3
ECON 5415	Gender & Economic Development	3
ECON 5590	Health Economics	3
ECON 5600	Health and Development	3
ECON 6440	Development Economics	3
ECON 6460	Agriculture and Development	3
ECON 6480	Environmental and Resource Economics	3
ECON 6970	Applied Microeconometrics	3

### Finance elective courses

*Courses in this group have the EDFI attribute.*

Course	Title	Credits
ECON 5006	Programming Economics and Finance	3
ECON 6240	Financial Economics	3
ECON 6340	Financial Theory	3

### Specialized Topics elective courses

*Courses in this group have the EDST attribute.*

Course	Title	Credits
ECON 5730	Econometrics and Finance Using R - Part I	3
ECON 5750	Game Theory	3
ECON 5760	Computational Macroeconomics/Finance	3
ECON 6310	Monetary Policy	3
ECON 6320	Monetary Theory	3
ECON 6470	Growth and Development	3
ECON 6510	International Trade	3
ECON 6530	International Economics of Growth and Development	3
ECON 6560	International Finance	3
ECON 6990	Topics in Econometric Theory	3

### Data Science elective courses

*Courses in this group have the EDDS attribute.*

Course	Title	Credits
CISC 5500	Data Analytics Tools and Scripting	3
CISC 5550	Cloud Computing	3
CISC 5640	Nosql Database Systems	3
CISC 5835	Algorithms for Data Science	3
CISC 5900	Information Fusion	3
CISC 6000	Deep Learning	3
CISC 6210	Natural Language Processing	3
CISC 6525	Artificial Intelligence	3
CISC 6735	Wireless Networks	3
CISC 6745	Data Visualization	3