

**PROGRESSIVE DEGREE PROGRAM
COURSE PLAN TEMPLATE**

USC SCHOOL	Viterbi School of Engineering
ACADEMIC DEPARTMENT	Daniel J. Epstein Department of Industrial & Systems Engineering
GRADUATE PROGRAM	MS NLTX (Analytics)
POST CODE	1570
TERM EFFECTIVE DATE	Spring 2021

PROGRAM DESCRIPTION

A brief description of the graduate program.

The Master of Science in Analytics is designed to satisfy the growing demand for professionals equipped with significant technical and quantitative training in the fundamentals of analytics for solving engineering and management problems in today's data-extensive digital world.

Analytics is a multidisciplinary field that relates the application of engineering approaches and methods to the analysis and management of engineering and enterprise processes based on data. Learning objectives of this program involve data collection, cleansing, fusing and curating, for the purpose of analyzing trends, discovering patterns and building decision models for well-reasoned decision support. Rigorous mathematical modeling and computational methods tools are at the heart of the program.

COMMON BACHELOR DEGREE PROGRAM PATHWAYS

A list of common bachelor's degrees that undergraduate students pursue in advance of pursuing a progressive degree option with this graduate program. Some programs are restricted to certain majors while others are open to all students.

Analytics	Data Science
Financial Engineering	Industrial & Systems Engineering

PREPARATORY UNDERGRADUATE COURSES

A list of courses at the undergraduate level that prepare students for the graduate program. Required coursework is listed first, followed by recommended courses. If not applicable, this section will be blank.

Dept. Prefix - Course #	Course Title	Required or Recommended	Units
	Computer Programming	Required	
ISE-220	Calc Based Probability	Required	
ISE-225	Calc Based Statistics	Required	
	Calculus, I, II, III	Required	
	Linear Algebra	Required	

UNDERGRADUATE COURSES USED TO REDUCE GRADUATE LEVEL UNITS

A list of undergraduate level courses that may be used to reduce the number of graduate level units required for the graduate program. If there are none, that is specified instead.

Dept. Prefix - Course #	Course Title	Units
	NONE	

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CORE GRADUATE PROGRAM REQUIREMENTS (# units required)

A list of all required graduate courses for the graduate program. None of these courses may be used toward satisfying undergraduate degree requirements.

If special exceptions for any of these courses are made by the academic department, the course # is marked with an asterisk () and the exception is explained in the "Department Notes" section at the end of this course plan template.*

Dept. Prefix - Course #	Course Title	Units
DSCI-559	Introduction to Data Management	3
ISE-529	Predictive Analytics	3
ISE-530	Optimization Methods for Analytics	3
ISE-535	Data Mining	3
Project- Choose One		3
ISE-533	Integrative Analytics	
ISE-534	Data Analytics Consulting	
ISE-580	Performance Analysis with Simulation	
Methodology - Choose Two:		6
ISE-533	Integrative Analytics	
ISE-537	Financial Analytics	
ISE-538	Performance Analysis Using Markov Models	
ISE-540	Text Analytics	
ISE-543	Enterprise Business Intelligence & Systems Analytics	
ISE-562	Decision Analysis	
ISE-580	Performance Analysis with Simulation	

PRE-APPROVED ELECTIVE COURSEWORK

Elective coursework is approved at the discretion of the academic department. Note the following details about the total number and units required of elective coursework.

9	TOTAL ELECTIVE UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE
0	TOTAL ELECTIVE UNITS REQUIRED FOR THE PROGRESSIVE GRADUATE DEGREE

TOTAL UNIT COUNTS AND REQUIRED GRADUATE UNITS

30	TOTAL UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE
9	TOTAL GRADUATE UNITS THAT MAY BE WAIVED (IF ANY)
21	MINIMUM NUMBER OF GRADUATE UNITS THAT MUST BE AT THE 500 LEVEL OR ABOVE

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NOTES FROM THE DEPARTMENT

This section highlights any unique considerations, exceptions, or requirements for the graduate program. If a program has specific restrictions (courses, majors, etc.), they are detailed below.

Project and Methodology courses cannot be double-counted.

Kelly Goulis

Authorizing Dean's Name

April 7, 2021

Date Approved

Senior Associate Dean, Viterbi School of Engineering

Authorizing Dean's Title