# PROGRESSIVE DEGREE PROGRAM
# COURSE PLAN TEMPLATE

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| **USC SCHOOL** | Viterbi School of Engineering |
| **ACADEMIC DEPARTMENT** | Daniel J. Epstein Department of Industrial & Systems Engineering |
| **GRADUATE PROGRAM** | MS ORE (Operations Research Engineering) |
| **POST CODE** | 129 |
| **TERM EFFECTIVE DATE** | Fall 2023 |

**PROGRAM DESCRIPTION**
A brief description of the graduate program.

The MSORE degree is for students who hold a bachelor's degree in engineering, mathematics, science or related fields, who would like to enter careers in the use of computers and mathematics in solving business problems. The ORE degree trains students in solving business problems with computers and mathematics. (Open to graduates from all engineering and technical majors).

**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.

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|---|---|
| Engineering | |
| Mathematics | |
| Science | |
| Computer Science | |

**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 |
|---|---|---|---|
| | Calculus I, Calculus II, Calculus III | Required | |
| | Linear Algebra | Required | |
| | Linear Programming | Required | |
| ISE-225 | Engineering Probability, Statistics | Required | |
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**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 |
|---|---|---|
| **ISE-536** | **Linear Programming and Extensions** | **4** |
| **ISE-538** | **Performance Analysis Using Markov Models** | **4** |
| **ISE-580** | **Performance Analysis with Simulation** | **4** |
| **ISE-583** | **Enterprise Wide Information Systems** | **4** |
| **ISE-632** | **Network Flows and Combinatorial Optimization** | **4** |
| | **Minimum number of units required** | **20** |

*Last Revised 6/6/2023*

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**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.

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| 4 | **TOTAL ELECTIVE UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE** |
| 0 | **TOTAL ELECTIVE UNITS REQUIRED FOR THE PROGRESSIVE GRADUATE DEGREE** |

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**TOTAL UNIT COUNTS AND REQUIRED GRADUATE UNITS**

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|---|---|
| 28 | **TOTAL UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE** |
| 8 | **TOTAL GRADUATE UNITS THAT MAY BE WAIVED (IF ANY)** |
| 20 | **MINIMUM NUMBER OF GRADUATE UNITS THAT MUST BE AT THE 500 LEVEL OR ABOVE** |

**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.

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| Kelly Goulis |

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| 8/29/2023 | 8:19:47 PM PDT |

**Authorizing Dean's Name**                    **Date Approved**

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|---|
| Senior Associate Dean, Viterbi School of Engineering |

**Authorizing Dean's Title**

*Last Revised 6/6/2023*

**PROGRESSIVE DEGREE PROGRAM**
**COURSE PLAN TEMPLATE**

<span style="color:red">Master's Degree – Operations Research Engineering
Progressive Degree Option</span>

The MSORE degree is for students who hold a bachelor's degree in engineering, mathematics, science or related fields, who would like to enter careers in the use of computers and mathematics in solving business problems.

## Required Courses

- ISE 536 Linear Programming and Extensions Units: 4
- ISE 538 Performance Analysis Using Markov Models Units: 4
- ISE 580 Performance Analysis with Simulation Units: 4
- ISE 583 Enterprise Wide Information Systems Units: 4
- ISE 632 Network Flows with Combinatorial Optimization Units: 4

<span style="color:red">**\*Minimum Number of Units Required for the Operations Research Engineering PDP degree: 20**</span>