

**PROGRESSIVE DEGREE PROGRAM  
COURSE PLAN TEMPLATE**

<b>USC SCHOOL</b>	Viterbi School of Engineering
<b>ACADEMIC DEPARTMENT</b>	Mork Family Department
<b>GRADUATE PROGRAM</b>	Materials Science
<b>POST CODE</b>	491
<b>TERM EFFECTIVE DATE</b>	Spring 2021

**PROGRAM DESCRIPTION**

A brief description of the graduate program.

Students with an interest in the characterization, selection and processing of engineering materials, and in materials problems related to engineering design may work toward a MS in Materials Science.

**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.

Aerospace & Mechanical Engineering	Chemical Engineering
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**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
MASC 310	Materials Behavior and Processing	Recommended	4
MASC 350	Nanostructured Materials: Design, Synthesis, and Processing	Recommended	4
CHE 475	Physical Properties of Polymers	Recommended	4

**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
CHE 475	Physical Properties of Polymers	4

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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.*

<b>Dept. Prefix - Course #</b>	<b>Course Title</b>	<b>Units</b>
<b>MASC 471</b>	<b>Applied Quantum Mechanics for Engineers</b>	<b>4</b>
<b>MASC 501</b>	<b>Solid State</b>	<b>4</b>
<b>MASC 503</b>	<b>Thermodynamics of Materials</b>	<b>4</b>
<b>MASC 504</b>	<b>Diffusion and Phase Equilibria</b>	<b>4</b>
<b>MASC 505</b>	<b>Crystals and Anisotropy</b>	<b>3</b>
<b>MASC 520</b>	<b>Mathematical Methods for Deep Learning</b>	<b>4</b>
<b>MASC 551</b>	<b>Mechanical Behavior of Engineering Materials</b>	<b>4</b>

**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.

**TOTAL ELECTIVE UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE**

**TOTAL ELECTIVE UNITS REQUIRED FOR THE PROGRESSIVE GRADUATE DEGREE**

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**TOTAL UNIT COUNTS AND REQUIRED GRADUATE UNITS**

**TOTAL UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE**

**TOTAL GRADUATE UNITS THAT MAY BE WAIVED (IF ANY)**

**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.

Undergraduate courses used to reduce graduate units: we allow 2 courses to be waived.

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Kelly Goulis

April 13, 2021

**Authorizing Dean's Name**

**Date Approved**

Senior Associate Dean, Viterbi School of Engineering

**Authorizing Dean's Title**