

**PROGRESSIVE DEGREE PROGRAM
COURSE PLAN TEMPLATE**

USC SCHOOL	Viterbi School of Engineering
ACADEMIC DEPARTMENT	Aerospace and Mechanical Engineering
GRADUATE PROGRAM	Mechanical Engineering (Quantitative Medical Engineering)
POST CODE	2004
TERM EFFECTIVE DATE	Fall 2024

PROGRAM DESCRIPTION

A brief description of the graduate program.

The program prepares students who have backgrounds in mechanical engineering and related fields with the skills necessary to apply the essential principles of mechanical engineering to address medical issues pertinent to clinicians. It also aims to tackle the unique problems posed by space medicine, which demands engineers to not only be adept in aerospace and mechanical engineering but also capable of applying their knowledge to biological systems and medical challenges. This program is crucial not just to meet the growing needs of the industry but also to advance improvements in healthcare by combining mechanical engineering and transport principles, mathematical models, and

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 Engineering B.S.	Biomedical Engineering B.S
Mechanical Engineering B.S.	Civil Engineering B.S.
Astronautical Engineering B.S.	Physics B.S.
Open to all students if they fulfill course deficiencies	

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
AME 204	Mechanics of Materials and Structures	Recommended	4
AME 301	Dynamics	Recommended	3
AME 309	Dynamics of Fluids	Recommended	4
AME 310	Engineering Thermodynamics I	Recommended	3
AME 431	Heat Transfer	Recommended	3
AME 305 or AME 408	Mechanical Design or Computer-Aided Engineering	Recommended	3
AME 451	Linear Control Systems I	Recommended	3
MATH 125	Calculus I	Recommended	4

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MATH 126	Calculus II	Recommended	4
MATH 226	Calculus III	Recommended	4
MATH 245	Mathematics of Physics and Engineering I	Recommended	4
PHYS 151	Mechanics and Thermodynamics	Recommended	4
PHYS 152	Electricity and Magnetism	Recommended	4
PHYS 153	Optics and Modern Physics	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
	None	

CORE GRADUATE PROGRAM REQUIREMENTS (24 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
AME 525	Linear Algebra in Engineering Science	4
Quantitative Core	Choose 2 of the following: AME 508, AME 526, AME 540	8
Medical Engineering Core	Choose 3 of the following: AME 416, AME 516, AME 522, AME 536, AME 538, BME 514	12

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.

0

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

28

TOTAL UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE

4

TOTAL GRADUATE UNITS THAT MAY BE WAIVED (IF ANY)

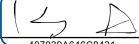
19

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.

DocuSigned by:

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11/19/2024 | 10:07:39 PM PST

Authorizing Dean's Name

Date Approved

Kelly Goulis Senior Associate Dean

Authorizing Dean's Title