Viterbi School of Engineering

**USC SCHOOL**

Sony Astani Civil and Environmental Engineering

**ACADEMIC DEPARTMENT**

Environmental Engineering (Air Track)

**GRADUATE PROGRAM**

337

**POST CODE**

Spring 2021

**TERM EFFECTIVE DATE**

**PROGRAM DESCRIPTION**

A brief description of the graduate program.

The Environmental Engineering program in the Sonny Astani Department of Civil and Environmental Engineering at USC comprises a unique team of faculty members who work collaboratively in research areas highly relevant to the dynamic field of environmental engineering.

Our faculty addresses water, air, and energy challenges that face urban and natural environments. We have built new laboratories and designed a new curriculum; our world-class program of integrated research and education is rapidly evolving.

We seek to develop students into engineers who can solve community, regional, and national challenges.

The Master of Science in Environmental Engineering requires a minimum of 28 units.

**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.

|  |  |
| --- | --- |
| BS Environmental 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** |
| ENE 428 | Air Pollution Fundamentals | Required | 4 |
| ENE 426 | Particulate Air Pollutants: Properties/ Behavior/ Measurement | 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 (# 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** |
| ENE 505 | Energy and the Environment | 4 |
| ENE 512 | Environmental Fluid Mechanics | 4 |
| ENE 527 | Climate Change and Atmospheric Aerosols | 4 |
| ENE 535 | Air Pollution Management | 4 |

**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.

4

12

**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**

9

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

19

**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.

N/A

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

April 27, 2021

Kelly Goulis

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Authorizing Dean’s Name Date Approved**

Senior Associate Dean, Viterbi School of Engineering

**Authorizing Dean’s Title**

Viterbi School of Engineering

**USC SCHOOL**

Sony Astani Civil and Environmental Engineering

**ACADEMIC DEPARTMENT**

Environmental Engineering – **Water Track**

**GRADUATE PROGRAM**

337

**POST CODE**

Spring 2021

**TERM EFFECTIVE DATE**

**PROGRAM DESCRIPTION**

A brief description of the graduate program.

The Environmental Engineering program in the Sonny Astani Department of Civil and Environmental Engineering at USC comprises a unique team of faculty members who work collaboratively in research areas highly relevant to the dynamic field of environmental engineering.

Our faculty addresses water, air, and energy challenges that face urban and natural environments. We have built new laboratories and designed a new curriculum; our world-class program of integrated research and education is rapidly evolving.

We seek to develop students into engineers who can solve community, regional, and national challenges.

The Master of Science in Environmental Engineering requires a minimum of 28 units.

**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.

|  |  |
| --- | --- |
| BS Environmental 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** |
| CE 363 | Water Chemistry and Analysis | Required | 4 |
| CE 453 | Water Quality Science and Engineering | Recommended | 4 |
| CE 465 | Water Supply and Sewerage System Design | Recommended | 4 |
| CE 485 | Water Treatment Design | 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** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**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** |
| ENE 505 | Energy and the Environment | 4 |
| ENE 512 | Environmental Fluid Mechanics | 4 |
| CE 523 | Physiochemical Processes in Environmental Engineering | 4 |
| CE 553 | Biological Processes in Environmental Engineering | 4 |
| ENE 562 | Aquatic and Environmental Chemistry | 4 |
|  |  |  |
|  |  |  |

**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.

4

12

**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**

9

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

19

**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.

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

April 27, 2021

Kelly Goulis

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Authorizing Dean’s Name Date Approved**

Senior Associate Dean, Viterbi School of Engineering

**Authorizing Dean’s Title**