**STUDENT INFORMATION**

|  |  |
| --- | --- |
| **Name:**       | **NAU ID:**        |
| **NAU E-mail Address:**        | **Phone Number:**       |
| **Term of Admission:**         | **Expected Graduation Term/Year:**        |
| **Advisor:**       | **Required Credits for Degree Program: 60** |

**I. Infrastructure Foundations (15 units required):**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
| CENE 539 | Public Policy and Regulatory Issues in Civil and Environmental Engineering |       |       |       | 3 |       |       |
| CENE 542 | Infrastructure Economics |       |       |       | 3 |       |       |
| CENE 572 | GIS for Civil Engineers |       |       |       | 3 |       |       |
| CENE 599 | Contemporary Developments: Infrastructure |       |       |       | 3 |       |       |
| CENE 641 | Resilience of Infrastructure Systems |       |       |       | 3 |       |       |

**II. Communication Coursework (3 units required):**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
| CENE 611 | Professional and Career Development in Civil and Environmental Engineering |       |       |       | 1 |       |       |
| CENE 612 | Professional Communication in Civil and Environmental Engineering |       |       |       | 1 |       |       |
| CENE 613 | Proposal and Grant Preparation in Civil and Environmental Education |       |       |       | 1 |       |       |

**III. Statistics (9 units required):**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
| STA 570 | Statistical Methods I |       |       |       | 3 |       |       |
| STA 571 | Statistical Methods II |       |       |       | 3 |       |       |
| STA 676 | Experimental Design |       |       |       | 3 |       |       |

**IV. Emphasis Requirements or Individualized Focus (18 units required):** Select from the following options.

* Environmental Emphasis
* Structures Emphasis
* Transportation Emphasis
* Water Resources Emphasis
* Individualized Focus
* **Option 1: Environmental Emphasis (18 units):** Select from CENE 502, CENE 530, CENE 531, CENE 540, CENE 562, and CENE 565

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |

* **Option 2: Structures Emphasis (18 units):** Select from CENE 536, CENE 575, CENE 680, and CENE 684

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |

* **Option 3: Transportation Emphasis (18 units):** Select from CENE 519, CENE 543, CENE 545, CENE 546, CENE 547, CENE 580, and CENE 581

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |

* **Option 4: Water Resources Emphasis (18 units):** Select from CENE 560, CENE 568, CENE 582, CENE 599 - Flow System Design, and CENE 666

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |

* **Option 5: Individualized Focus (18 units):** In consultation with your coordinator, select additional CENE graduate coursework or interdisciplinary electives to fulfill your research needs.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |

**V. Dissertation (15 units required):**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
| CENE 799 | Dissertation |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |
|       |       |       |       |       |       |       |       |

**ADDITIONAL INFORMATION**

Some courses may have prerequisites. For prerequisite information, view the course on LOUIE or see your advisor.

Up to 30 units of graduate-level coursework from an MS degree may be applied toward the degree requirements with the approval of the dissertation committee.

Students in this program must engage in original research in one of the focus areas of CENE, and will be primarily mentored through the program by their advisor. Students must secure an advisor by the end of their first term of study.

Milestones

* Qualifying exam: An emphasis specific comprehensive examination intended to establish the student's mastery of foundational CENE/Infrastructure topics, key expertise in their emphasis area, analytical and synthesis abilities, and potential for excellence in original research. You must receive a grade of PhD Pass to continue degree progression.
* Advancement to Candidacy: This exam consists of written and oral portions: the Advancement Proposal and the Advancement Defense, respectively. The Advancement Proposal consists of a comprehensive and well-organized survey of foundational and related work to the student's dissertation topic, a dissertation abstract, a description of the methodology used, outcomes of major milestones completed, and a clear plan for completing any remaining work and preparing the final dissertation. The Advancement Defense is an oral seminar that presents and defends this work to the student's Dissertation Committee. The outcome of this combined exam may be a Pass or Fail. Students who do not receive a Pass may retake the exam the following semester.
* Dissertation Defense: This examination consists of written and oral portions: The Dissertation and Dissertation Defense, respectively. The Dissertation captures the summative outcomes of a student's research and the Dissertation Defense allows for a comprehensive oral examination by the Dissertation Committee to determine the merits and adequacy of the work. The outcome of this combined exam may be a Pass or Fail. Students who do not receive a Pass on this exam may retake the exam the following semester.

This Program of Study documents your progress on your academic requirements for the degree and catalog year listed above. For Department of Defense-related requirements, it serves as the evaluated and approved educational plan.

In addition to all University and Office of Graduate & Professional Studies (OGPS) policies, procedures, and requirements, graduate students must also adhere to the academic requirements, policies, procedures, and criteria outlined by their program’s Graduate Student Handbook.

**Students:**

You must secure official approval by your advisor and Department Chair/Director before submitting your final Program of Study for graduation.

By signing or entering your name below, you agree to the following statement:

*“Students are responsible for complete knowledge of Academic Catalog requirements in their degree plan for their catalog year and adhering to all policies in the Academic Catalog.”*

**Advisors and Chairs/Directors:**

Please indicate approval of the curriculum on the Program of Study by placing your signature (formal digital signatures are permitted) in the space provided. Plain text typed signatures will not be accepted.

|  |  |
| --- | --- |
| **Student:**       | **Date:**       |
| **Advisor:**       | **Date:**       |
| **Chair:**       | **Date:**       |

**\*\*Transfer/Previous Graduate Degree/Internal Transfer/Accelerated (T/P/I/A)** – Must have Advisor approval

Transfer T = Course transferred from another university

Previous Graduate Degree P = Course taken at NAU from previous graduate degree

Internal Transfer I = Graduate-level course taken as undergraduate; Not applied to undergraduate degree

Accelerated Program “Dual-use” A = Courses completed during the undergraduate career and used to satisfy both the Bachelor’s and Master’s degree requirements. ONLY for designated Accelerated students.