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NORTHERN ARIZONA UNIVERSITY

College of Engineering, Forestry, and Natural Sciences
Environmental Engineering Bachelor of Science in Engineering

2014 2015 - 2013-2014 Undergraduate Catalog

Four Year Progression Plan

Sample Progression Plans are for planning purposes only; see the catalog for official details

Year 1 - Fall		
CENE 150	Intro To Environmd Engineering	3
CENE 150L	Env Engr Computations	1
CHM 151	General Chemistry I	4
CHM 151L	General Chemistry I Lab	1
EGR 186	Intro To Engineering Design	3
MAT 136	Calculus I	4
NAU 100	Transition To College	1

Year 1 - Spring		
CENE 180	Computer Aided Drafting	2
ENG 105	Critical Read/Writing In Univ	4
MAT 137	Calculus II	4
PHY 161	University Physics I	4
CHM 152	General Chemistry II	3

Year 2 - Fall		
CENE 225	Engineering Analysis	3
CENE 251	Applied Mechanics Statics	3
MAT 238	Calculus III	4
PHY 262	University Physics II	3
LIBST COURSE	Liberal Studies Course	3

Year 2 - Spring		
CENE 253	Mechanics Of Materials	3
CENE 280	Env Engr Fundamentals	3
CENE 286	Cred Design: The Process	1
MAT 239	Differential Equations	3
ME 291	Thermodynamics I	3
LIBST COURSE	Liberal Studies Course	3

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Year 3 - Fall		
CENE 270	Surveying	3
CENE 281L	Water Quality Lab	1
CENE 330	Air-quality Engineering	3
CENE 333	Water Resources I	3
CENE 366W	Engineering Design: The Methods	3
Choose one of the options below:		
Option A		
CHM 239	Fundamental Organic Chemistry	3
Option B		
CHM 235	General Organic Chemistry I	4
Engineering program fee assessed		

Year 3 - Spring		
CENE 332	Solid & Hazardous Waste Mgt	3
CENE 333L	Water Resources Lab	2
CENE 335	Environmental Biotechnology	3
CENE 383	Geotechnical Engineering I	3
CENE 383L	Geotechnical Engineering I Lab	1
LS/DIV COURSE	Liberal Studies/Diversity Course	3
Engineering program fee assessed		

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Year 4 - Fall		
CENE 401	Fc Exam Preparation	1
CENE 410	Unit Operations In Envmtl Egr	3
CENE 434	Water/Waste-water Units Design	3
CENE 476	Egr Design: Capstone Proj	3
CENE 480	Envmtl Transport Processes	3
TE COURSE	Technical Elective	3
LIBST COURSE	Liberal Studies Course	3
Submit graduation application this term.		
Engineering program fee assessed		

Year 4 - Spring		
CENE 486C	Engineering Design	3
TE COURSE	Technical Elective	3
TE COURSE	Technical Elective	3
Choose one of the options below:		
Option A		
PHI 103	Introduction To Ethics	3
Option B		
PHI 331	Environmental Ethics	3
LS/DIV COURSE	Liberal Studies/Diversity Course	3
Engineering program fee assessed		

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University Requirements Specified by Major	
Foundation Requirements: English (FNRO:ENG)	ENG 105 (4)
Foundation Requirements: Math (FNRO:MAT)	MAT 137 (4)
Aesthetic and Humanistic Inquiry (AHI)	PHY 105 (3)
Science/Applied Science (SAS/LAB)	CHM 151 (4), CHM 151L (1), CHM 152 (3)
Liberal Studies Elective	PHY 161 (4)

(5) EGR 366W

Engineering Design: The Methods

(3)

② BIC 100 Principles of Biology (3)
or

BIO 181 Unity of Life I: Life of the Cell (3)

③ LIBST COURSE Liberal Studies Course (3)

④ { CFNE 476 & CE NE 486C Egr Design: Cap Prep & Eng Design (1) & (3)
or

{ EGR 476C & EGR 486C Egr Design I & II (2) & (3)

PROGRAM INFORMATION

A minimum of 130 units are required for this degree. You may not have more than one grade of D in your engineering, mathematics and science courses. All pre-requisite courses for your engineering courses must be completed with grades of "C" or better.

Take a Liberal Studies course that also satisfies a Diversity requirement.

** Technical electives include 9 units from the following list. At least 6 units must be CENE prefix.

- CENE 336, 376, 418, 420, 430, 436, 437, 438, 440, 450, 457, 460, 462, 477, 485, 497, 499, 540, 541, 543, 545, 550, 551, 560, 562, 568.
- CHM 320, 341; CM 329, 388, 391, 460, 499; GLG 451; ME 340, 435, 450, 451, 455. **CS122**

Program Objectives:

Overarching learning goals are stated as Program Objectives; within three-to-five years of obtaining a bachelor's degree, a graduate is expected to achieve the following:

- Be employed in the engineering field or pursuing a formal academic program of study;
- Have a demonstrated commitment to life-long learning by participating in professional development activities;
- Be a registered professional engineer or be in the process of becoming a professional engineer;
- Demonstrate leadership through increasing responsibilities; and
- Engage in activities that benefit others outside of their employment.

Student Learning Outcomes:

Specific learning goals are stated as Student Learning Outcomes; upon graduation, students will have developed the following:

- An ability to apply knowledge of mathematics, science, and engineering;
- An ability to design and conduct experiments, as well as to analyze and interpret data;
- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- An ability to function on multidisciplinary teams;
- An ability to identify, formulate, and solve engineering problems;
- An understanding of professional and ethical responsibility;
- An ability to communicate effectively;
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- A recognition of the need for, and an ability to engage in life-long learning;
- A knowledge of contemporary issues;
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Upon the successful completion of the Environmental Engineering curricula, you will be able to work within all the major recognized areas of environmental engineering. These areas include:

- Air
- Water
- Land
- Environmental health

CONTACT INFORMATION

Academic Services Office

College of Engineering, Forestry & Natural Sciences

Building 21, Room 132

Phone: 928-523-3842

Email: cefnacademic@nau.edu

Engineering Programs

Building 69, Room 122

Phone: 928-523-5251

<http://nau.edu/cefn/engineering/civil-environmental>

Department Chair: Bridget Bero

Phone: 928-523-2051

Email: Bridget.Bero@nau.edu