NORTHERN ARIZONA UNIVERSITY

College of Engineering, Informatics, and Applied Sciences

Bachelor of Science in Engineering
CIVIL ENGINEERING
2019-2020 Undergraduate Catalog
Degree Progression Plan

1st term				**2nd term**			
MAT 136 ☀	Calculus I	4		CENE 150 ☀	Intro To Environmental Engineering	3	
CHM 151 ☀	General Chemistry I	4		CENE 180 ☀	Computer Aided Drafting/Lab	3	
CHM 151L ☀	General Chemistry I Lab	1		EGR 186 ☀	Intro To Engineering Design	3	
ENG 105 ☀	Critical Read/Writing in University	4		PHY 161 ☀	University Physics I	4	
LS ☀	Liberal Studies Course	4		MAT 137 ☀	Calculus II	4	
NAU 100	Transition to College	1					
	Total units	17			Total units	17	
3rd term				**4th term**			
CENE 225 ☀	Engineering Analysis	3		CENE 253 ☀	Mechanics of Materials	3	
CENE 251 ☀	Applied Mechanics Statics	3		CENE 253L ☀	Mechanics of Materials Lab	1	
CENE 270 ☀	Surveying/Lab **FALL ONLY**	3		CENE 286 ☀	CENE Design: The Process	3	
MAT 238 ☀	Calculus III	4		ME 291 ☀	Thermodynamics I	3	
PHY 262 ☀	University Physics II	3		MAT 239 ☀	Differential Equations	3	
				LS ☀	Liberal Studies Course	3	
	Total units	16			Total units	16	
5th term				**6th term**			
CENE 333	Water Resources I	3		CENE 333L	Water Resources 1 Lab	1	
CENE 376	Structural Analysis I	3		CENE 336	Water Resources 2	3	
CENE 420	Traffic Study/Lab	3		CENE 383	Geotechnical Engineering I	3	
ME 252	Applied Mechanics: Dynamics	3		CENE 383L ☀	Geotechnical Engineering I Lab	1	
SCI ELECTIVE ☀	Science Elective**	3		CENE 386W	Engineering Design: The Methods	3	
PHI 105 OR PHI 331 ☀	Introduction to Ethics or Environmental Ethics	3		LS/DIV ☀	Liberal Studies/ Diversity *	3	
	Total units	18			Total units	14	
7th term				**8th term**			
CENE 418	Highway Engineering **FALL ONLY**	3		CENE 486C	Engineering Design Capstone	3	
CENE 431	Municipal Engineering **FALL ONLY**	3		*TE*	Technical Elective ***	3	
CENE 438	Reinforced Concrete Design **FALL ONLY**	3		*TE*	Technical Elective ***	3	
CENE 450	Geotechnical Engineering II **FALL ONLY**	3		LS/DIV ☀	Liberal Studies/ Diversity *	3	
CENE 476	Engineering Design: Capstone Preparation	1		LS ☀	Liberal Studies Course	3	
CENE 431L	Water Resources 2 Lab	1		*TE*	Technical Elective ***	3	
	Total units	17			Total units	18	

☀ **Typically offered in Summer**

Liberal Studies Distribution blocks DIVERSITY: Global _____ Ethnic _____

AHI (6 units)	SPW (6 units)	CU (6 units)	Science (7 units)	Additional 3 units to reach 35 total
PHI 105 or PHI 331 (3)			PHY 161 (4)	
			PHY 262 (3)	MAT 136 (4)

PROGRAM INFORMATION

129 units are required for this degree.

You cannot have more than one grade of D in your engineering, mathematics, and science courses. All prerequisites for any engineering course must be completed with a grade of C or higher.

*Take a Liberal Studies course that also satisfies a Diversity requirement.
** Science electives include 3-4 units of: GLG 101/103, GLG 107, GLG 112/112L, GLG 115, ENV 230, AST 180.
*** Technical electives include 9 units from the following lists.

- 6-9 units from: CENE 280, 330, 332, 335, 410, 434, 436, 477, 437, 440, 457, 460, 485, 497, 499, 540, 543, 545, 550, 551, 560, 568, 599
- 0-3 units from: CM 329, CM 388, CM391, CM 460, CM 403; CS 122; EE 188; ME 340, ME 435, ME 450, ME 451, ME 454, ME 455

Program Objectives:
Our overarching learning goals are stated as our 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 a professional field consistent with one's career goals, or pursuing a graduate degree;
- Participate in continuing education or professional development activities;
- Be a registered professional engineer or be pursuing registration if consistent with one's career goals;
- Demonstrate a career path that shows development as a leader; and
- Engage in activities that benefit society.

Student Learning Outcomes:
Our specific learning goals are stated as our 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 society 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 our Civil Engineering curricula, you will be proficient in the areas of:

- Structural engineering
- Water resources engineering
- Transportation engineering
- Geotechnical engineering

GENERAL INFORMATION

• This degree progression plan is to be used in conjunction with the academic catalog and degree progress report.
• Students are encouraged see an academic advisor regularly to confirm their academic progress.
• Many courses have pre-requisites. Please check the academic catalog for pre-requisite and placement information.
• **Some courses are only offered once a year (Fall term only or Spring term only). Some of these courses may be pre-requisites for future courses. Please check with your department for current course rotations.**
• Honors students complete different requirements to meet NAU's liberal studies program. Students should consult an Honors Program advisor for complete information on fulfilling Honors Liberal Studies requirements.
• All students are required to complete a minimum of 120 total units which includes:

- 35 units of liberal studies courses: http://www4.nau.edu/aio/LScourselist.htm
- 6 units of diversity courses: (3 units in Global & 3 units in Ethnic): http://www4.nau.edu/aio/DiversityCourseList.htm
- 30 units of upper division courses (300-400 level), 18 of these units must be taken at NAU

• Enrollment in the English foundations course for liberal studies is based off of student SAT/ACT scores or incoming transfer/test credit, otherwise the student must take the English Placement Exam: http://testing.nau.edu/exams/placement.html
• Enrollment in the Math foundations course for liberal studies requires students to take the ALEKS Math Placement Exam: http://www.cefns.nau.edu/Academic/Math/studentInformation/Placement/Placement.shtml

CONTACT INFORMATION

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