



AREN 4440 Foundation Engineering	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Geotechnical Engineering, Structural Engineering, Building Technology, Construction Engineering	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or geotechnical engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
AREN 4450 Energy Conservation in Buildings	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Mechanical Engineering, Building Technology, Construction Engineering	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or mechanical engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
AREN 4470 Construction Management	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Structural Engineering, Building, Construction Management	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or structural engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
CVEN 3000 Introduction to Environmental Engineering	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Environmental Engineering, Geological Engineering	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or environmental engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
CVEN 3100 Fluid Mechanics	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Mechanical Engineering	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or mechanical engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
CVEN 3101 Fluid Mechanics Laboratory	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Mechanical Engineering	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or mechanical engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
ENGR 2130 Mechanics of Materials	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Mechanical Engineering, Materials Science and Engineering	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or mechanical engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
ENGR 2131 Mechanics of Materials Lab	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Mechanical Engineering, Materials Science and Engineering	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or mechanical engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
ENGR 2610 Introduction to Mining Engineering	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Environmental Engineering, Resource Engineering, Mining Engineering, Geological Engineering	Acceptable alternative qualifications include substantial professional experience in the mining or mineral extraction industry, with demonstrated expertise in surface and underground mining methods, critical mineral resource management, and mining sustainability practices. Experience with regulatory frameworks, environmental impact mitigation, and practical mine safety or design in an industrial or academic setting will also be considered.
ENGR 3610 Surface and Underground Methods	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Environmental Engineering, Resource Engineering, Mining Engineering, Geological Engineering	Acceptable alternative qualifications include extensive professional experience in surface and underground mining operations, with demonstrated expertise in mine planning and design, equipment selection, drilling and blasting techniques, and production scheduling. Industry experience involving materials handling systems, mine drainage management, and mining safety compliance, including involvement in case studies, technical presentations, or consulting work in operational mining environments, will also be considered.
ENGR 4610 Mine Ventilation and Laboratory	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Environmental Engineering, Resource Engineering, Mining Engineering, Geological Engineering	Acceptable alternative qualifications include substantial professional experience in underground mining environments, specifically in designing, modeling, or managing mine ventilation systems. Expertise in airflow dynamics, fan systems, air quality monitoring, and controlling underground hazards such as gases, dust, and temperature is essential. Experience using computational tools for ventilation network analysis or leading ventilation safety audits and compliance in operational mining contexts will also be considered.
ENGR 4630 Mineral Processing and Resource Recovery	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Environmental Engineering, Resource Engineering, Mining Engineering, Geological Engineering	Acceptable alternative qualifications include substantial industry or academic experience in mineral beneficiation, physical separation methods, or environmental aspects of resource recovery. Demonstrated expertise in unit operations such as froth flotation, comminution, magnetic or gravity separation, and surface chemistry for mineral treatment is required. Experience with waste minimization strategies, sustainability practices in mineral processing, or the application of computational tools to optimize process design may also be considered.

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AREN 3490 Construction Scheduling	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Construction, Building Technology, Construction Engineering, Urban Planning	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or quantity surveying, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
AREN 4370 Construction Law and Ethics	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Law, Urban Planning, Ethics	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or juris doctor, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
CVEN 3380 Construction Safety and Environment Management	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Environmental Engineering, Construction Management, Building, Industrial Engineering, Urban Planning	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or environmental engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
CVEN 3480 Introduction to Virtual Design and Construction	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Structural Engineering, Building, Architecture, Construction Engineering, Urban Planning	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or structural engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
AREN 3380 Construction Safety	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Environmental Engineering, Construction Management, Building, Industrial Engineering, Urban Planning	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or environmental engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
CVEN 4370 Construction Law and Ethics	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Law, Urban Planning, Ethics	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or juris doctor, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
AREN 4220 Adv Mech Syst Buildings	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Structural/Mechanical Engineering, Building, Architecture, Construction Engineering, Urban Planning	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or mechanical engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
CVEN 2430 Engineering Geology	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Geological Engineering, Materials Science and Engineering	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or geological engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.
CVEN 3450 Rock Mechanics	Earned Masters or Doctorate degree in Civil and Architectural Engineering in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in Civil and Architectural Engineering.	Geotechnical Engineering, Applied Mechanics, Materials Science and Engineering	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in civil and architectural engineering or geotechnical engineering, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in civil and architectural engineering related fields.