Outcome 1

Graduates with a B.S. in Environmental Engineering from the University of Nevada, Reno will have proficiency in fundamental science and engineering principles necessary for the practice of environmental engineering including mathematics, probability and statistics, physics, chemistry, biology, hydrology, and fluid mechanics. Graduates will also have introductory level knowledge of environmental issues associated with air, land, and water systems, and associated environmental health impacts.
ABET Criterion 3 Alignment: a

Courses Responsible for Meeting Outcome 1

Scale 1.1: Mathematics		
a. Demonstrate proficiency in mathematics	**CEE 204 CEE 241 CEE 364**	**CEE 404 CEE 418 CEE 459**
b. Demonstrate proficiency in computational and numerical methods	**CEE 404 CEE 413**	**CEE 418**
Scale 1.2: Basic Sciences		
a. Demonstrate proficiency in physics, chemistry, and biology	**CEE 204 CEE 241 CEE 417 CEE 453**	**CEE 458 CEE 459 ATMS 412**
Scale 1.3: Fundamental Environmental Engineering Principles and Issues		
a. Demonstrate proficiency in engineering hydrology and fluid mechanics	**CEE 364 CEE 404 CEE 413**	**ME 367 or NRES 414**
b. Demonstrate introductory level knowledge of environmental issues related to air, land, and water systems, and associated environmental health impacts	**CEE 204 CEE 390 CEE 417 CEE 458**	**ATMS 412**

Outcome 2

Graduates with a B.S. in Environmental Engineering from the University of Nevada, Reno will have the ability to analyze, design, and model systems in environmental and water resources engineering as individuals and as a member of multidisciplinary teams using engineering principles and the latest technologies and engineering tools. ABET Criterion 3 Alignment: a, c, d, e, k

Courses Responsible for Meeting Outcome 2

Scale 2.1: Analysis of Water, Air, and Soil Quality		
a. Demonstrate understanding of factors affecting water, air, and soil quality and sources or sinks of pollution	CEE 390 CEE 417 CEE 418 CEE 453	CEE 456* CEE 459 ATMS 412
b. Demonstrate understanding of physical, chemical, and biological processes in natural settings and engineered systems	CEE 390 CEE 417 CEE 418	CEE 453 CEE 457* CEE 458
Scale 2.2: Design of Water, Wastewater, and Solid Waste Facilities		
a. Demonstrate ability to design unit processes and a water treatment system to achieve desired water quality objectives and satisfy environmental regulations using appropriate tools	CEE 390 CEE 456*	
b. Demonstrate ability to design unit processes and a wastewater treatment system to achieve desired water quality objectives and satisfy environmental regulations using appropriate tools	CEE 390 CEE 457*	
c. Demonstrate ability to design landfill liners and leachate collection systems	CEE 459	
d. Demonstrate ability to perform engineering tasks including drawings, contracts, specifications, and cost estimates	CEE 101 CEE 388	
Scale 2.3: Modeling of Water, Air, and Soil Quality		
a. Demonstrate knowledge of modeling principles to predict fate and transport of contaminants in surface waters	CEE 418	
b. Demonstrate ability to use models to predict the fate and transport of contaminants in the subsurface environment	CEE 459	
c. Demonstrate ability to use models to predict air quality	CEE 204	ATMS 412
Scale 2.4: Hydrology, Hydraulics, and Water Resources Engineering		
a. Demonstrate ability to use appropriate tools and methodologies to perform hydrologic analyses and determine surface runoff and design flows	CEE 364 CEE 414	
b. Demonstrate ability to use appropriate tools to calculate the flow of water in saturated media under natural or pumping conditions	CEE 364	ME 367 or NRES 414
c. Demonstrate ability to design pipelines, channels, and drainage structures for collecting and conveying water and wastewater using appropriate tools	CEE 413 CEE 414	CEE 456* CEE 457*

***Capstone Course**

Outcome 3

Graduates with a B.S. in Environmental Engineering from the University of Nevada, Reno will have a capacity for investigation and experimentation into physical, chemical, and biological phenomena in environmental engineering along with the ability to analyze and interpret engineering data.
ABET Criterion 3 Alignment: b

Courses Responsible for Meeting Outcome 3

Scale 3.1: Design and Conduct Experiments		
a. Demonstrate ability to conceptualize, design, and plan experiments to obtain desired data	**CEE 413 CEE 417**	
b. Demonstrate ability to conduct experiments to obtain desired data	**CEE 413 CEE 417**	
Scale 3.2: Data Analysis		
a. Demonstrate proficiency in organization and manipulation of data	**CEE 389 CEE 413 CEE 417**	
b. Demonstrate proficiency in interpretation of results from data analysis and formulation of conclusions	**CEE 413 CEE 417**	

Outcome 4

Graduates with a B.S. in Environmental Engineering from the University of Nevada, Reno will have the skills to communicate verbally, in writing, and through the use of engineering communication media and be capable of presenting outcomes of problem solving and design projects to groups of engineers and lay persons.
ABET Criterion 3 Alignment: d, g, k

Courses Responsible for Meeting Outcome 4

Scale 4.1: Oral Presentation		
a. Demonstrate proficiency in organization of content for oral presentation, use of visual aids, and presentation delivery and dynamics	CEE 414 CEE 453 CEE 456* CEE 457*	ENGR 301
b. Demonstrate ability to effectively respond to questions from the audience	CEE 414 CEE 453 CEE 456* CEE 457*	ENGR 301
Scale 4.2: Written Reports		
a. Demonstrate proficiency in organization of content for written reports and effective report mechanics	CEE 413 CEE 414 CEE 417 CEE 456* CEE 457*	ENGR 301

***Capstone Course**

Outcome 5

Graduates with a B.S. in Environmental Engineering from the University of Nevada, Reno will understand the role environmental engineering plays in our modern global society, that much is to be learned from the past and applied to the present, and that a responsible engineer is ethical and will continue to increase his/her knowledge throughout his/her lifetime.
ABET Criterion 3 Alignment: f, h, i, j

Courses Responsible for Meeting Outcome 5

Scale 5.1: Professional and Ethical Responsibilities		
a. Demonstrate understanding of role and impact of engineering solutions in a global society	UNR Core Curriculum CEE 204 CEE 411	CEE 413 CEE 456* CEE 457*
b. Demonstrate understanding of ethical responsibility	UNR Core Curriculum	CEE 453 CEE 456* CEE 457*
c. Demonstrate proficiency in leadership and activism	UNR Core Curriculum	Senior Exit Interviews
Scale 5.2: The Role of Life-long Learning		
a. Demonstrate awareness of and the ability to engage in life-long learning	ENGR 490 Senior Exit Interviews	Alumni Surveys

*Capstone Course