

This template is to be used only by programs that have received specific written approval from the Provost's office to proceed with internal proposal development and review. The proposal template should be completed in full and submitted to the University Provost's Office [mailto: curriculumplanning@asu.edu]. It must undergo all internal university review and approval steps including those at the unit, college, and university levels. A program **may not** be implemented until the Provost's Office notifies the academic unit that the program may be offered.

College/School/Institute: Ira A. Fulton Schools of Engineering
Department/Division/School: School of Sustainable Engineering and the Built Environment
Proposing Faculty Group (if applicable):
Is this an official joint degree program? No, this is not a joint degree program

If "Yes" List all the additional college(s)/school(s)/institute(s) that will be involved in offering the degree program and providing the necessary resources. Note: All units offering this program must have collaborated in the proposal development and completed the appropriate unit and college/school approvals.

Degree type: BSE-Bachelor of Science in Engineering
 If other; provide degree type title and proposed abbreviation:
Name of degree program (major): Environmental Engineering
Are any concentrations to be established under this degree program? No, concentrations will not be established.
Is a program fee required? Yes, a program fee is required.
What is the first catalog year available for students to select on the undergraduate application for this program? 2017-18
Delivery method: On-campus only (ground courses and/or iCourses)
Note: Once students select a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the University Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.

Campus/Locations: indicate all locations where this program will be offered.

Downtown Phoenix Polytechnic Tempe West Other:


Proposal Contact

Name: G. Edward Gibson, Jr. **Title:** Director, School of Sustainable Engineering and the Built Environment
Phone number: 480-965-7972 **Email:** edd.gibosn@asu.edu

DEAN APPROVAL(S)

**This proposal has been approved by all necessary unit and College/School levels of review.
 I recommend implementation of the proposed organizational change.**

College/School/Division Dean name: James S. Collofello

Signature  **Date:** 11/7/20 16

College/School/Division Dean name:
(if more than one college involved)

Signature _____ **Date:** ____ / ____ / 20

Note: An electronic signature, an email from the dean or dean's designee, or a PDF of the signed signature page is acceptable.

1. Purpose and Nature of Program

Provide a brief program description. Include the distinctive features of the program that make it unique.

The Environmental Engineering BSE degree will fill a critical gap in the degree offerings in the Fulton Schools of Engineering (FSE), in general, and the School of Sustainable Engineering and the Built Environment (SSEBE), in particular, to focus on the engineered processes and systems that preserve, protect, and restore the natural environment for benefits to human health and ecosystem services. The degree will appeal to students who seek to identify, compare, solve, analyze, evaluate, and design sustainable solutions to current and pressing environmental problems that span local, regional, national, and global scales. In recognition of the interdisciplinary nature of these challenges, the degree will incorporate educational content from other programs in FSE. Course offerings will pull from existing courses offered at ASU and key new courses that will cover fundamental engineering concepts applied to environmental processes as well as applied learning experiences including a summer internship/research experience and a capstone design course. Student interest in the new Environmental Engineering BSE degree is expected to be strong as measured by the existing Civil Engineering BSE degree with Environmental Engineering concentration from where most initial students will be recruited.

2. Student Learning Outcomes and Assessment Methods

A. Knowledge, competencies, and skills

List the knowledge, competencies, and skills students should have when they graduate from the proposed degree program. You can find examples of program Learning Outcomes at (<https://uoeee.asu.edu/plan-outcomes>).

1. An ability to apply knowledge of mathematics, science, and engineering
2. An ability to design and conduct experiments, as well as to analyze and interpret data
3. 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
4. An ability to function on multidisciplinary teams
5. An ability to identify, formulate, and solve engineering problems
6. An understanding of professional and ethical responsibility
7. An ability to communicate effectively
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
9. A recognition of the need for, and an ability to engage in life-long learning
10. A knowledge of contemporary issues
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

B. Assessment

Describe the plan and methods to assess whether students have achieved the knowledge, competencies, and skills identified in the Learning Outcomes. You can find examples of assessment methods at (<https://uoeee.asu.edu/creating-plan>).

The intent will be to seek Accreditation Board for Engineering and Technology (ABET) accreditation once the program is established and students begin to graduate (Note: ABET requires at least one student to have graduated before accreditation can be considered). Accordingly, ABET processes will be employed for defining and assessing the Program Educational Objectives and Student Outcomes. For example, the student learning outcomes listed above map directly to the ABET (a)–(k) Student Outcomes. Two assessment measures will be created for each student learning outcome. For each pair of assessment measures, one will be direct and the other one will be either direct or indirect depending on the student learning outcome. The process for creating the direct assessment measures will take place as follows: (i) once the program is approved, one or more courses will be identified that best match the student learning outcomes; (ii) for each course, a specific assignment or activity (e.g., question on an exam, course project, oral presentation, etc.) that directly relates to the student learning outcome will be identified as the direct assessment measure; (iii) the instructor will document student performance on the direct assessment measure, compare with a predetermined benchmark, and forward to the Program Chair; (iv) the Program Chair will evaluate the documentation and performance on each assessment measure, share and discuss with the Environmental Engineering curriculum committee, and work with the relevant faculty and instructors to revise the course content and/or assessment process as necessary. Initially, course evaluations will be used as indirect assessment measures for each student learning outcome (i.e., a specific question(s) from course evaluation from course that best matches the student learning outcome). The information will be compiled, reviewed by the Program Chair, shared and discussed with the Environmental Engineering curriculum committee, and revised as necessary.

3. Academic Curriculum and Requirements

A. Major Map.

Attach a copy of the “proposed” major map for this degree program and each concentration(s) to be offered. Instructions on how to create a “proposed major map” in [BAMM](#) can be found in the [Build a Major Map Training Guide](#).

B. Summary of credit hours required for this program

Total credit hours must be 120 and include first-year composition, general studies, core/required courses, program-specific electives, and any additional requirements (e.g., concentration credits).

Requirements	Credit Hours
First Year Composition	6
ASU 101 (or Equivalent)	1
General Studies	15
Core/required courses	32
Program specific electives	15
Additional requirements	50
Other; Internship 484	1
Total	120

C. Core/Required Courses.

- i. Total required and/or core course credit hours: 114
- ii. List the name, prefix, and credit hours for each required/core course for this program

MATH AND SCIENCE CORE: (32 HOURS)		
CHM 113	General Chemistry I	4
CHM 116	General Chemistry II	4
IEE 380	Probability and Statistics for Engineering Problem Solving	3
MAT 242	Elementary Linear Algebra	2
MAT 265	Calculus for Engineers I	3
MAT 266	Calculus for Engineers II	3
MAT 267	Calculus for Engineers III	3
MAT 275	Modern Differential Equations	3
PHY 121	University Physics I: Mechanics	3
PHY 122 (LAB)	University Physics Laboratory I	1
	Basic Science Elective	3
	<i>Subtotal:</i>	32
GENERAL STUDIES REQUIREMENT: (15 HOURS)		
Elective	HU/SB C, G Electives	6
CEE 181	Technological, Social, and Sustainable Systems –(HU)	3
CEE 400	Earth Systems Engineering and Management (UD,H, HU)	3
ECN 211 or ECN 212	Macroeconomic Principles or Microeconomic Principles – (SB)	3
	<i>Subtotal:</i>	15
SUPPORTING CORE FOUNDATION: (3 HOURS)		
ASU 101-CEE	The ASU Experience	1
FSE 100	Introduction to Engineering	2
	<i>Subtotal:</i>	3
ENVIRONMENTAL CORE: (64 HOURS)		
CEE 213	Introduction to Deformable Solids	3
CEE 300	Engineering Business Practice	3
CEE 341	Fluid Mechanics for Civil Engineers	4
CEE 351	Geotechnical Engineering	4
CEE 353	Civil Engineering Materials	4
CEE 384	Numerical Methods for Engineers	3
CEE 440	Hydrology	3
CEE 441	Water Resources Engineering	3
CEE 462	Unit Operations in Environmental Engineering	3
CEE 467	Environmental Microbiology	3
CEE 486	Integrated Civil Engineering Design	4
CHE 211	Introduction to Chemical Processing	3
ERM 401	Hazardous Waste Management	3
EVE 214	Environmental Engineering Mechanics	3
EVE 261	Introduction to Environmental Processes	3
EVE 302	Environmental Engineering Fundamentals: Physical and Chemical Processes	3
EVE 303	Environmental Engineering Fundamentals: Biological Processes	3
EVE 304	Environmental Engineering Processes Lab	2
EVE 484	Internship: Practicum	1
	Technical Electives	6
	<i>Subtotal</i>	64

D. Program Specific Electives.

- i. Total required program elective credit hours: 6
- ii. List the name, prefix, and credit hours for any program-specific electives for this program:
 - BCH 361: Advanced Principles of Biochemistry (3)
 - CEE 281: Surveying (3)
 - CEE 372: Transportation Engineering (3)
 - CEE 412: Pavement Analysis and Design (3)
 - CEE 466: Urban Water System Design (3)
 - CEE 470: Sustainable Environmental Biotechnologies (3)
 - CEE 481: Civil Engineering Project Management (3)
 - CEE 485: Sustainable Civil and Environmental Systems Engineering (3)
 - CEE 493: Honors Thesis (L) (6)
 - CEE 499: Individualized Instruction (3)
 - CHE 469: Air Quality Engineering (3)
 - CHM 341: Elementary Physical Chemistry (3)
 - PUP 301: Introduction to Urban Planning (L) (3)
 - PUP 442: Environmental Planning (3)
 - PUP 465: Sustainable Urbanism (3)

E. Additional Program Requirements, if any:

List and describe any capstone experiences, milestone, and/or additional requirements.

The student must complete a practice internship working for an environmental engineering firm, in a laboratory performing research or environmental testing, or broader applied learning experience.

Internship Event

EVE 484 1 Internship: Topic - Environmental Engineering Practicum

The student must complete a capstone experience in their final semester. The capstone will consist of an industry-based project. This will be a team project where the Environmental Engineering major designs water, wastewater, and other relevant environmental processes and systems.

CEE 486 4 Integrated Civil Engineering Design

F. Concentrations

- i. Are any concentrations to be established under this degree program? No, concentrations will not be established.
- ii. If yes, are concentrations required? No, concentrations will not be required.
- iii. List courses & additional requirements for the proposed concentration (s):

Concentration Name	Total credit hours	Core/Required Courses for Concentration (Prefix, # & Title)	Total Core credit hours	Program Specific Electives (include course name and prefix)	Total Elective credit hours	Additional Requirements (i.e. milestones, capstones)

4. New Course Development

A. Will a new course prefix (es) be required for this degree program? Yes

If yes, list prefix name(s) (i.e. ENG- English) EVE-Environmental Engineering

Note: A request for a New Prefix form must be completed for each new prefix required and submitted with this proposal: http://provost.asu.edu/files/shared/curriculum/Prefix_Request.doc.

B. New Courses Required for Proposed Degree Program.

List all new courses required for this program, including course prefix, number and course description.

EVE 214 Environmental Engineering Mechanics

Concepts of engineering statics and dynamics in the context of environmental processes.

EVE 261 Introduction to Environmental Processes

Concepts of air, soil, water, and sediment pollution; contaminant fate and transport; risk assessment; environmental laws and regulations.

EVE 302 Environmental Engineering Fundamentals: Physical and Chemical Processes

Physical and chemical processes in the environment emphasizing transport phenomena, aquatic chemistry, and geochemistry.

EVE 303 Environmental Engineering Fundamentals: Biological Processes

Biological processes in the environment emphasizing environmental microbiology and biogeochemical cycles.

EVE 304 Environmental Engineering Processes Lab

Laboratory experiments and data analysis/interpretation of environmental engineering processes including water quality, water treatment, microbiology, air quality, and geology.

EVE 484 Internship: Topic - Environmental Engineering Practicum

Structured theories, tools and techniques learned in the classroom, to actual operational situations, under the guidance of a company manager, supervisor, or mentor. The undergraduate student should be involved in several operations such as analysis, planning, design, lab/field work, environmental impact assessment, research etc. to advance skills, to develop a “real world” perspective and to get a comprehensive view of company functions and/or professional practice. The internship can be in any environmental engineering area such as water quality, water/wastewater treatment, water resource, air quality, solid waste management, sustainability, and other related areas.

Note: New course requests must be submitted electronically via [Curriculum ChangeMaker](#) and undergo all internal university review and approval steps including those at the unit, college, and university levels.

5. Program Need

Explain why the university needs to offer this program (include target audience and market).

The engineering profession has long recognized the need to understand the impact of engineered systems on the natural environment, and the need to preserve, protect, restore, and manage the natural environment for benefits to human health and ecosystem services. A specific degree focused on Environmental Engineering addresses this need, and builds upon this challenge to sustain and improve the built and natural environment by training engineers that are technically skilled on integrating knowledge from disparate disciplines to solve complex challenges. By including applied learning experiences such as internships, research experiences and capstone design, we aim to attract students with aspirations of applying their knowledge to real-world problems. Based on the strong and growing enrollment in the BSE in Civil Engineering (Environmental Engineering concentration), we have a proven interest from a large number of students seeking an environmental engineering degree. The new BSE in Environmental Engineering degree, however, will allow greater depth and focus in the key areas of environmental engineering including environmental processes; air, land, and water systems engineering; applied environmental chemistry and microbiology; and engineering ethics, risk analysis, and life cycle impacts.

6. Impact on Other Programs

List other academic units that might be impacted by the proposed program and describe the potential impact (e.g., how the implementation of this program might affect student headcount/enrollment, student recruitment, faculty participation, course content, etc. in other programs). Attach letters of collaboration/support from impacted programs.

School of Computing, Informatics and Decision Systems Engineering
School for Engineering of Matter, Transport and Energy, Chemical Engineering
The Polytechnic School, ENGINEERING
School of Sustainability
Civil, Sustainable and Environmental Engineering, Keith Hjelmstad
College of Liberal Arts and Sciences –
School of Life Sciences (BIO courses)
School of Molecular Sciences (BCH courses)
School of Geographical Sciences and Urban Planning (PUP courses)

7. Projected Enrollment

How many new students do you anticipate enrolling in this program each year for the next five years?

5-YEAR PROJECTED ANNUAL ENROLLMENT					
	1st Year	2nd Year (Yr 1 continuing + new entering)	3rd Year (Yr 1 & 2 continuing + new entering)	4th Year (Yrs 1, 2, 3 continuing + new entering)	5th Year (Yrs 1, 2, 3, 4 continuing + new entering)
Number of Students Majoring (Headcount)	50	100	150	200	250

8. Accreditation or Licensing Requirements

If applicable, provide the names of the external agencies for accreditation, professional licensing, etc. that guide your curriculum for this program, if any. Describe any requirements for accreditation or licensing.

ABET (Accreditation Board for Engineering and Technology). Accreditation requirements are available at: <http://www.abet.org>. and <http://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-engineering-programs-2016-2017/>. In addition to the requirements for all engineering programs, Specific Criteria for Environmental Engineering are as follows:

1. Curriculum

The curriculum must prepare graduates to apply knowledge of mathematics through differential equations, probability and statistics, calculus-based physics, chemistry (including stoichiometry, equilibrium, and kinetics), earth science, a biological science, fluid mechanics. The curriculum must prepare graduates to formulate material and energy balances, and analyze the fate and transport of substances in and between air, water, and soil phases; conduct laboratory experiments and analyze and interpret the resulting data in more than one major environmental engineering focus area, (e.g., air, water, land, environmental health); design environmental engineering systems that include considerations of risk, uncertainty, sustainability, life-cycle principles, and environmental impacts; and apply advanced principles and practice relevant to the program objectives. The curriculum must prepare graduates to understand concepts of professional practice, project management, and the roles and responsibilities of public institutions and private organizations pertaining to environmental policy and regulations.

2. Faculty

The program must demonstrate that a majority of those faculty teaching courses that are primarily designed in content are qualified to teach the subject matter by virtue of professional licensure, board certification in environmental engineering, or by education and equivalent design experience.

9. Faculty & Staff**A. Current faculty**

List the name, rank, highest degree, area of specialization/expertise and estimate of the level of involvement of all current faculties who will teach in the program.

Treavor Boyer, Associate Professor, PhD, Water Treatment Processes and Water Chemistry, 100%
Peter Fox, Professor, PhD, Water Treatment Processes, 100%
Paul Westerhoff, Vice Dean & Professor (ACD), PhD, Water Treatment Processes and Water Chemistry, 100%
Morteza Abbaszadegan, Professor, PhD, Environmental Microbiology, 100%
Mikhail Chester, Assistant Professor, PhD, Sustainable Engineering, 50%
Matthew Fraser, Professor, PhD, Atmospheric Chemistry and Energy, 100%
Francois Perrault, Assistant Professor, PhD, Environmental Chemistry, 100%
Otakuye Conroy-Ben, Assistant Professor, PhD, Water Treatment Processes and Biotechnology, 100%
Bruce Rittmann, Professor, PhD, Microbiology and Biotechnology, 100%
Rosa Krajmalnik-Brown, Associate Professor, PhD, Microbiology and Biotechnology, 100%
Rolf Halden, Professor, PhD, Environmental Chemistry, 100%
Thomas Seager, Associate Professor, PhD, Sustainable Engineering, 50%
Enrique Vivoni, Professor, PhD, Hydrosystems, 50%
Giuseppe Mascaro, Assistant Professor, PhD, Hydrosystems, 50%

B. New Faculty:

Describe the new faculty hiring needed during the next three years to sustain the program. List the anticipated hiring schedule and financial sources for supporting the addition of these faculty members.

Treavor Boyer was recently hired to become Program Chair for the new Environmental Engineering program. A search will be conducted during the 2016–2017 academic year in the area of environmental modeling and environmental engineering lecturer. In general, the faculty already on staff at ASU is sufficient to teach the program but additional faculty and lecturer support will be necessary for the program to grow and expand.

C. Administration of the program.

Explain how the program will be administered for the purposes of admissions, advising, course offerings, etc. Discuss the available staff support.

The new program will be administered by the School of Sustainable Engineering and the Built Environment, using existing resources and staffing which are currently sufficient to handle the program. The faculty of School of Sustainable Engineering and the Built Environment will assume responsibility for the curriculum. Advising will be performed by the academic success specialists within the school. As the program expands, more staff and advisors will be added to meet demand.

10. Resources (necessary to launch and sustain the program)**A. Required resources:**

Describe any new resources required for this program's success, such as new support staff, new facilities, new library resources, new technology resources, etc.

Existing resources are sufficient at this time. Future faculty and staff support will be necessary for the program to grow and expand.

B. Resource acquisition:

Explain how the resources to support this program will be obtained.

N/A

APPENDIX
OPERATIONAL INFORMATION FOR UNDERGRADUATE PROGRAMS
(This information is used to populate the Degree Search/catalog website.)

1. Program Name (Major): Environmental Engineering**2. Program Description (150 words maximum)**

The environmental engineering BSE degree program will focus on the engineered processes and systems that preserve, protect and restore the natural environment for benefits to human health and ecosystem services. The degree will appeal to students who seek to identify, compare, solve, analyze, evaluate and design sustainable solutions to current and pressing environmental problems that span local, regional, national and global scales. In recognition of the interdisciplinary nature of these challenges, the degree will incorporate educational content from other programs in the Fulton Schools of Engineering. Course offerings will cover fundamental engineering concepts applied to environmental processes and environmental engineering design, as well as applied learning experiences including a summer internship or research experience and capstone design course. The program will have a heavy emphasis on chemistry, biology and mathematics as applied to many of the pressing problems that society faces today.

3. Contact and Support Information

Building Name, code and room number: (<i>Search ASU map</i>)	CAVC 437
Program office telephone number: (<i>i.e. 480/965-2100</i>)	480/965-0595
Program Email Address:	sebe.advising@asu.edu
Program Website Address:	http://ssebe.engineering.asu.edu

4. Delivery/Campus Information Delivery: On-campus only (ground courses and/or iCourses)

Note: Once students select a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the University Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.

5. Campus/Locations: indicate all locations where this program will be offered.

Downtown Phoenix Polytechnic Tempe West Other:

6. Additional Program Description Information

- A. Additional program fee required for this program? Yes
B. Does this program have a second language requirement? No

7. Career Opportunities & Concentrations

Provide a brief description of career opportunities available for this degree program. If the program will have concentrations, provide a brief description for each concentration. (150 words maximum)

Graduates from the environmental engineering program will have career opportunities in both the private and public sectors. The private sector consulting industry in environmental engineering is growing as greater environmental awareness and emerging novel pollutants require continual refinement of regulations and environmental system design standards. We seek to accredit the BSE in environmental engineering to allow graduates to pursue professional licensure that will enable environmental engineers to design and build drinking water and wastewater treatment facilities, contaminated soil and water remediation systems, and hazardous and solid waste confinement systems. In the public sector, municipalities and regulating agencies require a knowledgeable workforce to understand how public policy can improve human health and ecosystem services through environmental engineering processes.

8. Additional Admission Requirements

If applicable list any admission requirements (freshman and/or transfer) that are higher than and/or in addition to the university minimum undergraduate admission requirements.)

Freshman Admission:

1. minimum 1210 SAT combined evidence-based reading and writing plus math score (or 1140 if taken prior to March 5, 2016) or minimum 24 ACT combined score **or** 3.00 minimum ABOR GPA **or** class ranking in top 25 percent of high school class, **and**
2. no high school math or science competency deficiencies

Transfer students with fewer than 24 transferable college credit hours:

1. minimum transfer GPA of 3.00 for less than 24 transfer hours, **and**
2. no high school math or science competency deficiencies, **and**
3. minimum 1210 SAT combined evidence-based reading and writing plus math score (or 1140 if taken prior to March 5, 2016) or minimum 24 ACT combined score, **or** 3.00 minimum ABOR GPA, **or** class ranking in top 25 percent of high school class

9. Keywords

List all keywords used to search for this program. Keywords should be specific to the proposed program.

environmental engineering; water systems engineering; air quality; hazardous waste; microbiology

10. Advising Committee Code

List the existing advising committee code to be associated with this degree. UGESNA

Note: If a new advising committee needs to be created, please complete the following form:

[Proposal to create an undergraduate advising committee](#)

11. First Required Math Course

List the first math course required in the major map. MAT 265

12. WUE Eligible:

Has a request been submitted to the Provost by the Dean to consider this degree program as eligible for WUE? No

Note: No action will be taken during the implementation process with regards to WUE until approval is received from the Provost.

13. Math Intensity:

- a. List the highest math course required on the major map. (This will not appear on Degree Search.) MAT 275
- b. What is the math intensity as indicated by the highest math required on the major map? Math intensity categorization can be found here: <https://catalog.asu.edu/mathintensity> Substantial

14. CIP codes

Identify CIP codes that should be displayed on Degree Search. CIP codes can be found at: <http://www.onetonline.org/crosswalk/CIP/>.

14.1401 Environmental/Environmental Health Engineering

Are any specific career codes (SOC/ONET codes) to be omitted from the CIP codes selected above?
 (i.e. "Omit 25-10312.00 Engineering Teachers, Postsecondary from CIP code 14.0501 Bioengineering and Biomedical Engineering.")

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15. Area(s) of Interest

A. Select **one (1)** primary area of interest from the list below that applies to this program.

- | | |
|--|--|
| <input type="checkbox"/> Architecture & Construction | <input type="checkbox"/> Health & Wellness |
| <input type="checkbox"/> Arts | <input type="checkbox"/> Humanities |
| <input type="checkbox"/> Business | <input type="checkbox"/> Interdisciplinary Studies |
| <input type="checkbox"/> Communications & Media | <input type="checkbox"/> Law, Justice & Public Service |
| <input type="checkbox"/> Computing & Mathematics | <input type="checkbox"/> STEM |
| <input type="checkbox"/> Education & Teaching | <input type="checkbox"/> Science |
| <input checked="" type="checkbox"/> Engineering & Technology | <input type="checkbox"/> Social and Behavioral Sciences |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Sustainability |
| <input type="checkbox"/> Exploratory | |

B. Select **one (1)** secondary area of interest from the list below that applies to this program.

- | | |
|--|--|
| <input type="checkbox"/> Architecture & Construction | <input type="checkbox"/> Health & Wellness |
| <input type="checkbox"/> Arts | <input type="checkbox"/> Humanities |
| <input type="checkbox"/> Business | <input type="checkbox"/> Interdisciplinary Studies |
| <input type="checkbox"/> Communications & Media | <input type="checkbox"/> Law, Justice & Public Service |
| <input type="checkbox"/> Computing & Mathematics | <input type="checkbox"/> STEM |
| <input type="checkbox"/> Education & Teaching | <input type="checkbox"/> Science |
| <input type="checkbox"/> Engineering & Technology | <input type="checkbox"/> Social and Behavioral Sciences |
| <input type="checkbox"/> Entrepreneurship | <input checked="" type="checkbox"/> Sustainability |
| <input type="checkbox"/> Exploratory | |

The following fields are to be completed by the Office of the University Provost.





CIP Code: _____






Plan Code: _____






2017 - 2018 Major Map

Environmental Engineering, (Proposed)

School/College:
DBDBFRZ

Term 1 0 - 16 Credit Hours <u>Critical course signified by</u> 	Hours	Minimum Grade	Notes
 <u>FSE 100: Introduction to Engineering</u>	2	C	<ul style="list-style-type: none"> • An SAT, ACT, Accuplacer, IELTS, or TOEFL score determines placement into first-year composition courses • ASU Mathematics Placement Test score determines placement in mathematics course • ASU 101 or college-specific equivalent First-Year Seminar required of all freshman students and should be completed the first semester. • If ENG 105 is taken, then a 3 hr applicable elective must also be taken prior to graduation. See Advisor.
 <u>MAT 265: Calculus for Engineers I (MA)</u>	3	C	
<u>ASU 101-CEE: The ASU Experience</u>	1		
<u>CHM 113: General Chemistry I (SQ)</u>	4		
<u>ENG 101 or ENG 102: First-Year Composition</u> OR			
<u>ENG 105: Advanced First-Year Composition</u> OR	3	C	
<u>ENG 107 or ENG 108: First-Year Composition</u>			
<u>Humanities, Arts and Design (HU) AND Global Awareness (G)</u>	3		
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	16		

Term 2 17 - 31 Credit Hours <u>Critical course signified by</u> 	Hours	Minimum Grade	Notes
 <u>MAT 242: Elementary Linear Algebra</u>	2	C	
 <u>MAT 266: Calculus for Engineers II (MA)</u>	3	C	
<u>CEE 181: Technological, Social, and Sustainable Systems (HU)</u>	3		
<u>CHM 116: General Chemistry II (SQ)</u>	4		
<u>ENG 101 or ENG 102: First-Year Composition</u> OR			
<u>ENG 105: Advanced First-Year Composition</u> OR	3	C	
<u>ENG 107 or ENG 108: First-Year Composition</u>			
 Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	15		

Term 3 32 - 47 Credit Hours <u>Critical course signified by</u> 	Hours	Minimum Grade	Notes
 <u>MAT 275: Modern Differential Equations (MA)</u>	3	C	
 <u>PHY 121: University Physics I: Mechanics (SQ)</u>	3	C	
 <u>PHY 122: University Physics Laboratory I (SQ)</u>	1	C	
<u>EVE 261: Introduction to Environmental Processes</u>	3	C	
<u>ECN 211: Macroeconomic Principles (SB) OR</u>			
<u>ECN 212: Microeconomic Principles (SB)</u>	3		
<u>Social-Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C)</u>	3		
 Minimum 2.00 GPA ASU Cumulative.			
Complete Mathematics (MA) requirement.			
Term hours subtotal:	16		

Term 4 48 - 62 Credit Hours <u>Critical course signified by</u> 	Hours	Minimum Grade	Notes
 <u>MAT 267: Calculus for Engineers III (MA)</u>	3	C	

<u>CHE 211: Introduction to Chemical Processing</u>	3	C
<u>EVE 214: Environmental Engineering Mechanics</u>	3	C
<u>EVE 302: Environmental Engineering Fundamentals: Physical and Chemical Processes.</u>	3	C
<u>BIO 181: General Biology I (SQ) OR</u>		
<u>BIO 182: General Biology II (SG) OR</u>		
<u>BME 111: Engineering Perspectives on Biological Systems OR</u>	3	
<u>CHM 231: Elementary Organic Chemistry (SQ) OR</u>		
<u>GLG 101: Introduction to Geology I (Physical) (SQ)</u>		

Term hours subtotal: 15

Term 5 63 - 77 Credit Hours <i>Necessary course signified by</i> ★	Hours	Minimum Grade	Notes
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★ <u>EVE 303: Environmental Engineering Fundamentals: Biological Processes</u>	3	C
<u>CEE 213: Introduction to Deformable Solids</u>	3	C
<u>CEE 300: Engineering Business Practice (L)</u>	3	C
<u>CEE 384: Numerical Methods for Engineers (CS)</u>	3	C
<u>IEE 380: Probability and Statistics for Engineering Problem Solving (CS)</u>	3	

Term hours subtotal: 15

Term 6 78 - 91 Credit Hours <i>Necessary course signified by</i> ★	Hours	Minimum Grade	Notes
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★ <u>CEE 341: Fluid Mechanics for Civil Engineers</u>	4	C
<u>CEE 351: Geotechnical Engineering</u>	4	C
<u>CEE 353: Civil Engineering Materials</u>	4	C
<u>EVE 304: Environmental Engineering Process Lab</u>	2	C

Term hours subtotal: 14

Summer 6 92 - 92 Credit Hours	Hours	Minimum Grade	Notes
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<u>EVE 484: Internship: Environmental Engineering Practicum</u>	1	C
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Term hours subtotal: 1

Term 7 93 - 107 Credit Hours <i>Necessary course signified by</i> ★	Hours	Minimum Grade	Notes
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★ <u>CEE 467: Environmental Microbiology</u>	3	C
<u>CEE 440: Hydrology</u>	3	
<u>CEE 462: Unit Operations in Environmental Engineering</u>	3	C
<i>Complete 2 courses:</i>		
<u>Technical Elective</u>	6	

Term hours subtotal: 15

Term 8 108 - 120 Credit Hours <i>Necessary course signified by</i> ★	Hours	Minimum Grade	Notes
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★ <u>CEE 486: Integrated Civil Engineering Design (L)</u>	4	C
<u>CEE 400: Earth Systems Engineering and Management ((L or HU) & H)</u>	3	C
<u>CEE 441: Water Resources Engineering</u>	3	
<u>ERM 401: Hazardous Waste Management</u>	3	

Term hours subtotal: 13

Hide Course List(s)/Track Group(s)

Technical Elective

CEE 281: Surveying

CEE 372: Transportation Engineering

CEE 412: Pavement Analysis and Design

CEE 466: Urban Water System Design

CEE 470: Sustainable Environmental
Biotechnologies

CEE 481: Civil Engineering Project
Management

CEE 485: Sustainable Civil and Environmental
Systems Engineering

CEE 493: Honors Thesis (L)

CEE 499: Individualized Instruction

CHM 341: Elementary Physical Chemistry

BCH 361: Advanced Principles of
Biochemistry

PUP 301: Introduction to Urban Planning (L)

PUP 442: Environmental Planning

PUP 465: Sustainable Urbanism

CHE 469: Air Quality Engineering

Total Hours: 120

Upper Division Hours: 45 minimum

Major GPA: 2.00 minimum

Cumulative GPA: 2.00 minimum

Total hrs at ASU: 30 minimum

Hrs Resident Credit for

Academic Recognition: 56 minimum

Total Community College Hrs: 64 maximum

General University Requirements Legend

General Studies Core Requirements:

- Literacy and Critical Inquiry (L)
- Mathematical Studies (MA)
- Computer/Statistics/Quantitative Applications (CS)
- Humanities, Arts and Design (HU)
- Social-Behavioral Sciences (SB)
- Natural Science - Quantitative (SQ)
- Natural Science - General (SG)

General Studies Awareness Requirements:

- Cultural Diversity in the U.S. (C)
- Global Awareness (G)
- Historical Awareness (H)

First-Year Composition

General Studies designations listed on the major map are current for the 2017 - 2018 academic year.

School of Earth & Space Exploration and School of Molecular Sciences

From: Hilairy Hartnett
Sent: Wednesday, September 14, 2016 1:39 PM
To: Treavor Boyer
Subject: RE: Environmental Engineering undergraduate program

Hi Treavor,

Nice to hear from you. I think the Env. Engineering program sounds pretty cool. I looked over your EVE 303 and 302 syllabi and it looks to me like both EVE 302 and EVE 303 are closely related to GLG/CHM 481 *Geochemistry*. We teach the Geochemistry class from a chemical standpoint. There is of course some biogeochemistry in many of the topics, but fundamentally it's thermodynamics, kinetics, solubility, and redox topics as applied to the Earth system. We don't get too much into contaminants or biochemical processes.

We require the students in GLG/CHM 481 *Geochemistry* to have had some kind of thermodynamics class before they take 481 (that's not something we can hold the geology students to, but they are grandfathered in for reasons that don't bear explanation).

Let me know if you need any further information.

Cheers,
Hilairy

Hilairy Ellen Hartnett

Associate Professor School of Earth & Space Exploration and School of Molecular Sciences

Associate Director, Undergraduate Programs School of Earth & Space Exploration

Honors Faculty Barrett, the Honors College

Arizona State University

PH: 480-965-5593

From: Treavor Boyer
Sent: Tuesday, September 13, 2016 4:52 PM
To: Hilairy Hartnett
Subject: Environmental Engineering undergraduate program

Hi Hilairy,

I am a new faculty member in SSEBE/Environmental Engineering, we had dinner (with Stan) at Four Peaks back in January.

As you are probably aware, we are moving forward with new Environmental Engineering undergraduate program. Enrique suggested that I contact you because there is some common course topics between SESE/Geological Sciences and new EVE courses.

I have enclosed a draft of the major map and syllabi for new courses that we plan to offer. As part of the approval process, the Fulton Schools of Engineering (FSE) Curriculum Committee asked me to contact programs that might be impacted by the new EVE program and to make other

departments/schools at ASU aware of the new EVE program. In the new course EVE 303 we list GLG 481 as a related course. Let me know if you have any questions or comments about this.

I am meeting with the FSE Curriculum Committee on Thursday, September 15, and I would appreciate your positive confirmation in support of the new EVE program—an email response will be sufficient. Please let me know if you have any questions and I would be happy to discuss the EVE program.

Thanks,
Treavor

--

Treavor H. Boyer, Ph.D.
Associate Professor of Environmental Engineering
Environmental Engineering Undergraduate Program Chair
School of Sustainable Engineering and the Built Environment
Arizona State University
Office: ISTB4, Room 361
Phone: 480-965-7447
Email: thboyer@asu.edu
Mailing: PO Box 873005, Tempe, AZ 85287-3005
Google Scholar: http://scholar.google.com/citations?user=vhn_98oAAAAJ
Twitter: @BoyerLabASU

School for Engineering of Matter, Transport and Energy

From: Valana Wells
Sent: Tuesday, September 13, 2016 4:51 PM
To: Treavor Boyer
Subject: RE: Environmental Engineering undergraduate program

Beginning in fall 2017, we will no longer be offering MAE 212. We will, however, be offering MAE 201 Mechanics of Particles and Rigid Bodies I: Statics, and MAE 202 Mechanics of Particles and Rigid Bodies II: Dynamics.

I don't see any impact on our program. We support this program in environmental engineering.

Valana L. Wells, Ph.D.
Program Chair, Aerospace Engineering and Mechanical Engineering, ERC 393
School for Engineering of Matter, Transport and Energy
Arizona State University
Tempe, AZ 85287-6106
480-965-4777
valana@asu.edu



From: Treavor Boyer
Sent: Tuesday, September 13, 2016 4:36 PM
To: Valana Wells
Subject: Environmental Engineering undergraduate program

Dear Valana,

I am contacting you as Undergraduate Program Chair for Mechanical Engineering.

The School of Sustainable Engineering and the Built Environment (SSEBE) is submitting an application to create a new multi-school Environmental Engineering (EVE) undergraduate program that will be housed in SSEBE as part of the Fulton Schools of Engineering (FSE's) number 1 program initiative. This is a cross-school's initiative within FSE with the School for Engineering of Matter, Transport and Energy (SEMTE) and the Polytechnic School as partners in the new EVE program. Lenore Dai has already given her support to the program.

I have enclosed a draft of the major map and syllabi for new courses that we plan to offer. As part of the approval process, the FSE Curriculum Committee asked me to contact programs that might be impacted by the new EVE program and to make other departments/schools at ASU aware of the new EVE program. We plan to offer a combined statics and dynamics course similar to MAE 212, and have listed MAE 212 as a related course on the syllabus for EVE 214.

I am meeting with the FSE Curriculum Committee on Thursday, September 15, and I would appreciate your positive confirmation in support of the new EVE program—an email response will be sufficient.

Please let me know if you have any questions and I would be happy to discuss the EVE program.

Thanks,
Treavor

--

Treavor H. Boyer, Ph.D.
Associate Professor of Environmental Engineering
Environmental Engineering Undergraduate Program Chair
School of Sustainable Engineering and the Built Environment
Arizona State University
Office: ISTB4, Room 361
Phone: 480-965-7447
Email: thboyer@asu.edu
Mailing: PO Box 873005, Tempe, AZ 85287-3005
Google Scholar: <http://scholar.google.com/citations?user=vh98oAAAAJ>
Twitter: @BoyerLabASU

The Polytechnic School, Ira A. Fulton Schools of Engineering

From: Larry Olson
Sent: Wednesday, September 14, 2016 8:33 AM
To: Treavor Boyer
Subject: RE: Environmental Engineering program

Dear Treavor:

I have been following the development of the EVE undergraduate program and we are pleased that ERM 401 will be included as one of the required courses. We will have no difficulty in providing this class to a new population of EVE students. In addition, there are other ERM classes that could be considered as electives in the future and I would be happy to meet with you to discuss this.

I believe the EVE program will be an excellent addition to the FSE curriculum and wholeheartedly support it. We will be happy to cooperate with you in any way that we can.

Best regards,

Larry Olson, Ph.D.
Associate Professor
Program Chair, Environmental & Resource Management
The Polytechnic School
Ira A. Fulton Schools of Engineering
Arizona State University

From: Treavor Boyer
Sent: Tuesday, September 13, 2016 4:30 PM
To: Larry Olson <larry.olson@asu.edu>
Subject: Environmental Engineering program

Dear Larry,

The School of Sustainable Engineering and the Built Environment (SSEBE) is submitting an application to create a new multi-school Environmental Engineering (EVE) undergraduate program that will be housed in SSEBE as part of the Fulton Schools of Engineering (FSE's) number 1 program initiative. This is a cross-school's initiative within FSE with the School for Engineering of Matter, Transport and Energy (SEMTE) and the Polytechnic School as partners in the new EVE program. Ann McKenna has already given her support to the program.

One of the required courses in the new EVE curriculum is ERM 401, Hazardous Waste Management, taught by Kiril Hristovski who will be listed as a faculty member in the EVE program. EVE students will take ERM 401 during Term 8 of the proposed major map, and as a result, this program will not have an impact on enrollment in ERM 401 for several years. We expect the EVE program to be approved fall 2017 and start accepting students spring 2018, so EVE students would likely take ERM 401 starting spring 2019 or spring 2020. The number of EVE students estimated to enroll in ERM 401 is on the order of 20 to 30 per year based on current number of Civil Engineering students pursuing the Environmental Engineering concentration.

I am also interested in your suggestions for other ERM courses to include as Technical Electives.

I have enclosed a draft of the major map and syllabi for new courses that we plan to offer. As part of the approval process, the FSE Curriculum Committee asked me to contact programs that might be impacted by the new EVE program and to make other departments/schools at ASU aware of the new EVE program.

I am meeting with the FSE Curriculum Committee on Thursday, September 15, and I would appreciate your positive confirmation in support of the new EVE program -- an email response will be sufficient. Please let me know if you have any questions and I would be happy to discuss the EVE program.

Thanks,
Treavor

--

Treavor H. Boyer, Ph.D.
Associate Professor of Environmental Engineering
Environmental Engineering Undergraduate Program Chair
School of Sustainable Engineering and the Built Environment
Arizona State University
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Google Scholar: http://scholar.google.com/citations?user=vhn_98oAAAAJ
Twitter: @BoyerLabASU

From: Cindy Boglin

Sent: Wednesday, September 14, 2016 11:17 AM
To: Treavor Boyer
Subject: FW: Environmental Engineering undergraduate program

Hello,

Both Dr. Morrell and Dr. Olson support this proposal.

Thank you,

Cindy

Cindy Boglin

Assistant Director | [Advising Services Office](#)
[The Polytechnic School](#) | [Ira A. Fulton Schools of Engineering](#) | [Arizona State University](#)
phone: 480-727-1874 | direct: 480-727-5213 | email: cindy.boglin@asu.edu
[schedule an advising appointment](#) | [follow us on social media](#) | [student success resources](#)

From: Darryl Morrell [<mailto:darryl.morrell@asu.edu>]
Sent: Wednesday, September 14, 2016 10:10 AM
To: Cindy Boglin <Cindy.Boglin@asu.edu>
Cc: Larry Olson <larry.olson@asu.edu>
Subject: Re: Environmental Engineering undergraduate program

This course will not affect our students. I have no objections.

On Sep 14, 2016, at 9:36 AM, Cindy Boglin <Cindy.Boglin@asu.edu> wrote:

Hello,

Please review the attached documents and then let me know if you support or do not support the proposal. I will get your responses back to Treavor Boyer.

Thank you,

Cindy

Cindy Boglin

Assistant Director | [Advising Services Office](#)
[The Polytechnic School](#) | [Ira A. Fulton Schools of Engineering](#) | [Arizona State University](#)
phone: 480-727-1874 | direct: 480-727-5213 | email: cindy.boglin@asu.edu
[schedule an advising appointment](#) | [follow us on social media](#) | [student success resources](#)

From: Treavor Boyer
Sent: Tuesday, September 13, 2016 4:42 PM

To: Cindy Boglin <Cindy.Boglin@asu.edu>

Subject: Environmental Engineering undergraduate program

Dear Cindy,

Mike Sever suggested that I contact you. This email pertains to listing EGR 217 as a related course for EVE 214. Please see details below.

The School of Sustainable Engineering and the Built Environment (SSEBE) is submitting an application to create a new multi-school Environmental Engineering (EVE) undergraduate program that will be housed in SSEBE as part of the Fulton Schools of Engineering (FSE's) number 1 program initiative. This is a cross-school's initiative within FSE with the School for Engineering of Matter, Transport and Energy (SEMTE) and the Polytechnic School as partners in the new EVE program. Ann McKenna has already given her support to the program.

I have enclosed a draft of the major map and syllabi for new courses that we plan to offer. As part of the approval process, the FSE Curriculum Committee asked me to contact programs that might be impacted by the new EVE program and to make other departments/schools at ASU aware of the new EVE program. We plan to offer a combined statics and dynamics course similar to EGR 217, and have listed EGR 217 as a related course on the syllabus for EVE 214.

I am meeting with the FSE Curriculum Committee on Thursday, September 15, and I would appreciate your positive confirmation in support of the new EVE program—an email response will be sufficient. Please let me know if you have any questions and I would be happy to discuss the EVE program.

Thanks,
Treavor

--

Treavor H. Boyer, Ph.D.

Associate Professor of Environmental Engineering

Environmental Engineering Undergraduate Program Chair

School of Sustainable Engineering and the Built Environment

Arizona State University

Office: ISTB4, Room 361

Phone: 480-965-7447

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Google Scholar: http://scholar.google.com/citations?user=vhn_98oAAAAJ

Twitter: @BoyerLabASU

<Environmental Engineering FC 17-18 most current.xlsx><EVE 214 Environmental Engineering Mechanics R1.pdf><EVE 261 Introduction to Environmental Processes R1.pdf><EVE 302 Environmental Engineering Process I R1.pdf><EVE 303 Environmental Engineering Process II R1.pdf><EVE 304 Environmental Engineering Processes Lab R1.pdf>

12 September 2016

To whom it may concern:

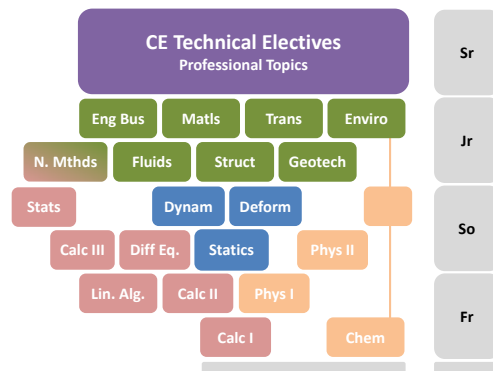
I am pleased to write this letter in support of the proposed B.S. degree program in Environmental Engineering (EVE). I write as the program chair for the B.S. degree in Civil Engineering (which currently includes an Environmental Engineering focus area as one of the degree options). Also, the proposed program plans to use a number of CEE courses in the curriculum.

The program in Environmental Engineering is timely. Environmental Engineering has long been contained within Civil Engineering programs at most institutions in the U.S., an artifact of a time when environmental engineering was primarily about water supply and wastewater removal. Environmental engineering is still an important sub-discipline of civil engineering and we plan to continue to offer environmental engineering courses to civil engineering students to fill out their course plans. However, the field of environmental engineering has evolved a great deal over the past few decades and it is less and less comfortable as a sub-discipline of civil engineering alone, even at the undergraduate level. The proposed program allows for a slightly different education for students at the lower division and more focused technical courses in the upper division (i.e., there is no need for environmental engineering students to cover all of the disciplinary core areas required in the civil engineering degree).

The plan for the new program is to attract students who are currently drawn to the Environmental Engineering focus area of the B.S. in Civil Engineering. This evolution will affect our enrollments in CE, but we view that as a positive change—the students will get a much more complete education in environmental topics under the new degree program than we can currently provide under the CE degree program. We endorse this change.

The new degree program will use a number of CEE courses. In particular, CEE 213 (Deformable Solids), CEE 300 (CE Business Practices), CEE 341 (Fluid Mechanics), CEE 351 (Geotechnical Engineering), CEE 353 (CE Materials), CEE 384 (Numerical Methods), CEE 400, CEE 401, CEE 440, CEE 462, CEE 466, CEE 467, and CEE 486 are all required in the EVE program (some of the 400-level courses are still in debate). The only significant issue that we have found is that the EVE program will offer EVE 214 (3 hours) rather than CEE 210 (Statics, 3 hours) and CEE 212 (Dynamics, 3 hours). These courses are very important in the prerequisite chain for many of the upper division CEE courses. This prerequisite problem most directly affects CEE 213, CEE 341, CEE 351, and

CEE 353. It will also have an impact on CEE 384 as our CE curriculum continues to evolve. The plan is to combine the topics from CEE 210 and CEE 212 into EVE 214 with an emphasis toward the topics covered in CEE 212 (Dynamics). Experience will tell us if this strategy can succeed. The mechanics courses are the core of the CE program, as shown in the figure at right. Many of the 300-level courses depend on this foundation, either as direct prerequisites or indirectly through the development of ability to formulate and solve engineering problems.



We are willing to allow students to take the follow-on courses using EVE 214 as the prerequisite (subject to the approval of the CE Curriculum Committee, which has not yet considered the matter). If the students are not successful in CEE 213 and the upper division courses that depend upon CEE 210 and CEE 212 (or if the CE Curriculum Committee does not approve the suggested prerequisite), then we will revisit the issue.

On the other side, we anticipate and expect that the course CEE 361 will continue to be offered by the environmental faculty and that at least two 400-level environmental engineering courses will be offered with CEE 361 as the key prerequisite so that CE students can continue to gain education in environmental engineering topics. The creation of the new program does not obsolete the need for civil engineers to have a background in environmental engineering topics.

This program should provide an interesting new avenue for students who are interested in environmental engineering issues. We look forward to participating in this program.

Sincerely,



Keith D. Hjelmstad
 Professor and Program Chair

School of Sustainability

On Sep 7, 2016, at 7:19 PM, Christopher Boone <Christopher.G.Boone@asu.edu> wrote:

Dear Edd

I am very pleased to support the proposed new degree in Environmental Engineering. Please let me know how we can assist with this important endeavor.

Chris

Sent from my mobile device
Christopher Boone
Dean, School of Sustainability
Arizona State University

----- Original message -----

From: G Gibson <GEdwardGibsonJr@asu.edu>
Date: 9/7/16 12:32 PM (GMT-10:00)
To: Christopher Boone <Christopher.G.Boone@asu.edu>
Cc: Michael Sever <Mike.Sever@asu.edu>, Treavor Boyer <thboyer@asu.edu>
Subject: New Environmental Engineering program letter of support

Dear Chris

The School of Sustainable Engineering and the Built Environment (SSEBE) is submitting an application to create a new multi-school Environmental Engineering (EVE) undergraduate program that will be housed in SSEBE as part of FSE's number 1 programs initiative. This is a cross-school's initiative within the Fulton Schools of Engineering with the School for Engineering of Matter, Transport and Energy (SEMTE) and the Polytechnic School as partners in the new EVE program.

Presently there are no courses from your School in the proposed major map for the new EVE program. However, due to the interdisciplinary nature of environmental engineering, it is possible that future iterations of the EVE major map will include courses from your School. We will be proactive in contacting you and working with you on this.

As a courtesy, we would appreciate your positive confirmation in support of the new EVE program. I have enclosed a summary sheet outlining the program, along with the draft program curriculum. I am copying Treavor Boyer, who is the new faculty member we hired this year to be the inaugural Program Chair.

We would appreciate your positive confirmation in support of the new EVE program—an email response will be sufficient. As with most things here at ASU, we are under a tight deadline for submittal to FSE by Thursday, September 15. Please let me know if you have any questions and we can set up a call.

Thanks
Edd

*G. Edward Gibson, Jr., PhD, PE
Director, School of Sustainable Engrg and the Built Environment
Professor and Sunstate Chair of Construction Mngt and Engrg
Arizona State University
Rm.502, College Avenue Commons (CAVC)
P.O. Box 873005 Tempe, AZ 85287-3005
Office: 480-965-7972
Cell:480-433-8714
Fax: 480-965-0557*

*Physical Address:
660 S. College Avenue
Tempe, AZ 85281
Email: Edd.Gibson@asu.edu*

"There are no traffic jams on the extra mile." —Roger Staubach

School of Geographical Sciences and Urban Planning

On Sep 7, 2016, at 8:01 PM, Trisalyn Nelson <Trisalyn.Nelson@asu.edu> wrote:

Hi Edd, SGSUP is supportive of this program. Please let me know if a more detailed response is required.
Best, Trisalyn

From: G Gibson

Sent: Wednesday, September 7, 2016 5:02 PM

To: Trisalyn Nelson <Trisalyn.Nelson@asu.edu>

Cc: Treavor Boyer <thboyer@asu.edu>; Michael Sever <Mike.Sever@asu.edu>

Subject: New Environmental Engineering program letter of support

Dear Trisalyn,

The School of Sustainable Engineering and the Built Environment (SSEBE) is submitting an application to create a new multi-school Environmental Engineering (EVE) undergraduate program that will be housed in SSEBE as part of Fulton Schools of Engineering (FSE's) number 1 program initiative. This is a cross-school's initiative within FSE with the School for Engineering of Matter, Transport and Energy (SEMTE) and the Polytechnic School as partners in the new EVE program.

Presently there are no required courses from your School in the proposed major map for the new EVE program; there is an option for PUP 100 or 200 as an HU elective and PUP 301, 442, and 465 as technical electives. We anticipate perhaps 10 to 20 additional students in these classes per year when the program grows. Due to the interdisciplinary nature of environmental engineering, it is possible that future iterations of the EVE major map will include courses from your School. We will be proactive in contacting you and working with you on this.

As a courtesy, we would appreciate your positive confirmation in support of the new EVE program. I have enclosed a summary sheet outlining the program, along with the draft program curriculum. I am copying Treavor Boyer, who is the new faculty member we hired this year to be the inaugural Program Chair.

We would appreciate your positive confirmation in support of the new EVE program—an email response will be sufficient. As with most things here at ASU, we are under a tight deadline for submittal to FSE by Wednesday September 14. Please let me know if you have any questions and we can set up a call if needed.

Thanks
Edd

*G. Edward Gibson, Jr., PhD, PE
Director, School of Sustainable Engrg and the Built Environment
Professor and Sunstate Chair of Construction Mngt and Engrg
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Rm.502, College Avenue Commons (CAVC)
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"There are no traffic jams on the extra mile." —Roger Staubach