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| For Academic Affairs and Research Use Only | |
| Proposal Number |  |
| CIP Code: |  |
| Degree Code: |  |

**NEW OR MODIFIED COURSE PROPOSAL FORM**

**[X] Undergraduate Curriculum Council**

**[ ] Graduate Council**

|  |
| --- |
| **[X]New Course, [ ]Experimental Course (1-time offering), or [ ]Modified Course (Check one box)** |

Signed paper copies of proposals submitted for consideration are no longer required. Please type approver name and enter date of approval.

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **Department Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **COPE Chair (if applicable)** |
| Julie B. King 8/7/2020 **Department Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Head of Unit (if applicable)** |
| |  |  | | --- | --- | | Mary Elizabeth Spence | 9/4/2020 | | **Office of Assessment** |  | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Undergraduate Curriculum Council Chair** |
| Shanon Brantley 08/26/2020 **College Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Graduate Curriculum Committee Chair** |
| \_\_Susan Hanrahan\_\_\_\_\_\_\_\_ 8/27/2020 **College Dean** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Vice Chancellor for Academic Affairs** |
| |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **General Education Committee Chair (if applicable)** |  |

1. **Contact Person (Name, Email Address, Phone Number)**

Dr. Julie King, juking@astate.edu; 870-932-3920

1. **Proposed starting term and Bulletin year for new course or modification to take effect**

Fall 2021, Bulletin year 2021-2021.

**Instructions:**

*Please complete all sections unless otherwise noted. For course modifications, sections with a “Modification requested?” prompt need not be completed if the answer is “No.”*

|  |  |  |
| --- | --- | --- |
|  | **Current (Course Modifications Only)** | **Proposed (New or Modified)**  *(Indicate “N/A” if no modification)* |
| **Prefix** |  | **OESH** |
| **Number\*** |  | **3303** |
| **Title** |  | **Water, Wastewater, Solid and Hazardous Waste Treatment**  **Short Title: Water and Waste Treatment** |
| **Description\*\*** |  | Water quality, water supply, and wastewater disposal, as well as solid and hazardous waste management, treatment, and disposal technology. |

***\**** (Confirm with the Registrar’s Office that number chosen has not been used before and is available for use. For variable credit courses, indicate variable range. *Proposed number for experimental course is 9*. )

\*\*Forty words or fewer as it should appear in the Bulletin.

1. **Proposed prerequisites and major restrictions** **[Modification requested? Yes/No]**

(Indicate all prerequisites. If this course is restricted to a specific major, which major. If a student does not have the prerequisites or does not have the appropriate major, the student will not be allowed to register).

1. **Yes / No** Are there any prerequisites? Yes
   1. If yes, which ones?

Must be admitted to the OESH program

OESH 3013 Fundamentals of Occupational Health and Safety

OESH 3103 Recognition of Occupational Hazards.

OESH 3023 Principles of Environmental Health

OESH 3113 Toxicology

DPEM 3503 Principles of Disaster Preparedness and Emergency Management

Why or why not?

A basic understanding of chemistry is needed to understand the fundamental properties of water quality. Students admitted to the Occupational and Environmental Safety and Health program will need to have completed the core support courses in addition to courses that come before it in the program.

1. **Yes** Is this course restricted to a specific major?
   1. If yes, which major? **Occupational and Environmental Safety and Health**
2. **Proposed course frequency [Modification requested? Yes/No]**

(e.g. Fall, Spring, Summer; if irregularly offered, please indicate, “irregular.”) *Not applicable to Graduate courses.*

**Spring**

1. **Proposed course type [Modification requested? Yes/No]**

Will this course be lecture only, lab only, lecture and lab, activity (e.g., physical education), dissertation/thesis, capstone, independent study, internship/practicum, seminar, special topics, or studio? Please choose one.

**Lecture only**

1. **Proposed grade type [Modification requested? Yes/No]**

What is the grade type (i.e. standard letter, credit/no credit, pass/fail, no grade, developmental, or other [please elaborate])

**Standard Letter grade**

1. **No** Is this course dual-listed (undergraduate/graduate)? No
2. **No** Is this course cross-listed? No

*(If it is, all course entries must be identical including course descriptions. Submit appropriate documentation for requested changes. It is important to check the course description of an existing course when adding a new cross-listed course.)*

**a.** – If yes, please list the prefix and course number of the cross-listed course.

Enter text...

**b.** – **Yes / No** Can the cross-listed course be used to satisfy the prerequisite or degree requirements this course satisfies?

Enter text...

1. **Yes** Is this course in support of a new program?

a. If yes, what program?

**Occupational and Environmental Safety and Health**

1. **No** Will this course be a one-to-one equivalent to a deleted course or previous version of this course (please check with the Registrar if unsure)?

a. If yes, which course?

Enter text...

**Course Details**

1. **Proposed outline** **[Modification requested? Yes/No]**

(The course outline should be topical by weeks and should be sufficient in detail to allow for judgment of the content of the course.)

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| Week | Topic/Assignments |
| 1 | Introduction: Current Issues in water and wastewater treatment |
| 2 | Water properties, parameters, and regulations |
| 3 | Water purification overview, Sources, intake and screening, Coagulation and flocculation |
| 4 | Wastewater: properties, parameters, and regulations |
| 5 | Sedimentation, Filtration and Disinfection |
| 6 | Wastewater sources and collection options |
| 7 | Wastewater Treatment Options |
| 8 | Introduction and Historical attempts at Hazardous waste disposal |
| 9 | Hazardous waste definitions, pathways, fates, and standards |
| 10 | Hazardous waste standards |
| 11 | Hazardous waste generators, sources, and transportation |
| 12 | Hazardous waste treatment options |
| 13 | Pollution Prevention, waste minimization, reuse and recycling |
| 14 | Resource Conservation and Recovery Act (RCRA) |
| 15 | The Derived from rule |
|  |  |

1. **Proposed special features** **[Modification requested? Yes/No]**

(e.g. labs, exhibits, site visitations, etc.)

Possible site visits to Water treatment plant

1. **Department staffing and classroom/lab resources**

Traditional classroom setting

1. Will this require additional faculty, supplies, etc.?

Yes, a faculty member with a specialization in environmental health will be needed and is planned for.

1. **No** Does this course require course fees?

*If yes: please attach the New Program Tuition and Fees form, which is available from the UCC website.*

**Justification**

**Modification Justification (Course Modifications Only)**

1. Justification for Modification(s)

Enter text...

**New Course Justification (New Courses Only)**

1. Justification for course. Must include:

a. Academic rationale and goals for the course (skills or level of knowledge students can be expected to attain)

Environmental health specialists are represented in a variety of work places including private industry and the public sector. Good water quality is a basic necessity for good community health. A basic understanding of water quality, wastewater, and stormwater will be necessary for graduates desiring to become environmental health specialists either in the private sector or municipal water suppliers. Students should be able to describe water using chemical, biological, and physical properties. They should also be able to explain basic water treatment techniques for providing potable water to our communities. Students will gain an understanding of the basic technologies for treating and disposing of solid hazardous waste and understand what management systems are doing to help minimize waste generation.

b. How does the course fit with the mission of the department? If course is mandated by an accrediting or certifying agency, include the directive.

The mission of the College of Nursing and Health Professions is dedicated to providing a comprehensive and quality education to students wishing to pursue careers in health fields and this includes the fields of occupational and environmental safety and health. The mission for the program in Occupational and Environmental Safety and Health is to train the next generation of environmental health and safety practitioners that will be able to function effectively in industrial settings, the public sector, or academia. The study of water quality and wastewater treatment is critical to this field as the levels and types of pollutants can have dramatic impacts on community health. The Occupational and Environmental Safety and Health Program at Arkansas State University will also be seeking accreditation from the Environmental Health Science and Protection Accreditation Council (NEHSPAC/EHAC) which requires that students have been exposed to or have in depth study in environmental health areas including Water, wastewater, solid and hazardous material waste management. This course will fulfill that requirement.

c. Student population served.

This course is a required course for the students accepted into the OESH major and is a requirement for graduating with a bachelors in OESH.

d. Rationale for the level of the course (lower, upper, or graduate).

Requiring this course to be upper level ensures that students will have the opportunity to have completed courses in chemistry and biology prior to taking this course. This course requires a fundamental understanding of these topics and is considered an in-depth course in the program.

**Assessment**

**Assessment Plan Modifications (Course Modifications Only)**

1. **Yes / No** Do the proposed modifications result in a change to the assessment plan?

*If yes, please complete the Assessment section of the proposal*

**Relationship with Current Program-Level Assessment Process (Course modifications skip this section unless the answer to #18 is “Yes”)**

1. What is/are the intended program-level learning outcome/s for students enrolled in this course? Where will this course fit into an already existing program assessment process?

Because this is an upper level course in the program of Occupational and Environmental Safety and Health, the course will touch on all of the program-level outcomes for the students. Critical thinking skills will be reinforced along with communication skills. Students will also be reinforcing skills in experimental design and interpretation and program management.

1. Considering the indicated program-level learning outcome/s (from question #19), please fill out the following table to show how and where this course fits into the program’s continuous improvement assessment process.

*For further assistance, please see the ‘Expanded Instructions’ document available on the UCC - Forms website for guidance, or contact the Office of Assessment at 870-972-2989.*

|  |  |
| --- | --- |
| **Program-Level Outcome 1 (from question #23)** | (SLO – 1) Students will be able to apply a broad base of science, mathematics, and communication knowledge to anticipate, recognize, and quantify environmental health and occupational safety hazards. |
| Assessment Measure | Direct measure: OESH 4003 Internship and OESH 4401 Senior Seminar act as a capstone to the program. Internship preceptors and instructors will be given a detailed evaluation form to fill out upon internship completion to assess for critical thinking skills in anticipating, recognizing and evaluating environmental health and occupational safety hazards. Students will also be given mock certification exams in either environmental health or occupational safety in the OESH 4401 Senior Seminar course. The grade outcomes of these exams will also be used to assess the program. Indirect measures: Students will be given program exit surveys in the OESH 4401 Senior Seminar course to assess the program. |
| Assessment  Timetable | Annually |
| Who is responsible for assessing and reporting on the results? | Course faculty and Occupational and Environmental Safety and Health Program Chair, Dr. Julie King, [juking@astate.edu](mailto:juking@astate.edu) 870-972-3920 |

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| **Program-Level Outcome 2 (from question #23)** | (SLO - 2) Students should be able to communicate occupational and environmental standards, studies, and programs effectively and professionally with a wide range of audiences verbally and in writing through publications, presentations, and technical reports. |
| Assessment Measure | Direct measure: OESH 4003 Internship and OESH 4401 Senior Seminar act as a capstone to the program. Students will be required to give a formal presentation in the OESH 4401 Senior seminar detailing their experiences in the internship. Presentations will be evaluated for communication skills. Internship preceptors and instructors will also give detailed evaluations on the students’ ability to communicate with a variety of audiences. Indirect measures: Students will be given program exit surveys in the OESH 4401 Senior Seminar course to assess the program. |
| Assessment  Timetable | Annually |
| Who is responsible for assessing and reporting on the results? | Course faculty and Occupational and Environmental Safety and Health Program Chair, Dr. Julie King, [juking@astate.edu](mailto:juking@astate.edu) 870-972-3920 |

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| **Program-Level Outcome 3 (from question #23)** | (SLO – 3) Students will be able to design and conduct environmental or workplace studies, experiments, or investigations, then analyze data and draw appropriate conclusions using sound scientific judgement. |
| Assessment Measure | Direct measure: OESH 4003 Internship and OESH 4401 Senior Seminar act as a capstone to the program. Internship preceptors and instructors will be given a detailed evaluation form to fill out upon internship completion to assess for ability to design and conduct detailed workplace studies, experiments, and investigations. Students will also be assessed for their ability to draw sound scientific conclusions using data from these experiments. Students ability to conduct these investigations will also be assessed by program faculty in their formal presentation of their internship experiences required in OESH 4401 Senior Seminar. Indirect measures: Students will be given program exit surveys in the OESH 4401 Senior Seminar course to assess the program. |
| Assessment  Timetable | Annually |
| Who is responsible for assessing and reporting on the results? | Course faculty and Occupational and Environmental Safety and Health Program Chair, Dr. Julie King, [juking@astate.edu](mailto:juking@astate.edu) 870-972-3920 |

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| **Program-Level Outcome 4 (from question #23)** | (SLO – 4) Students should be able to design, analyze, and evaluate environmental health or occupational safety management systems or programs including placing an emphasis on ethical considerations, stakeholder interests, and fiscal responsibility. |
| Assessment Measure | Direct measure: OESH 4003 Internship and OESH 4401 Senior Seminar act as a capstone to the program. Internship preceptors and instructors will be given a detailed evaluation form to fill out upon internship completion to assess for student’s ability to design, analyze and evaluate OESH programs. Students will also be assessed by program faculty in a formal presentation of their internship experience which will be completed in OESH 4401 Senior Seminar. Students will also be assessed by exam scores on mock certification exams to be taken in the senior seminar course. Indirect measures: Students will be given program exit surveys in the OESH 4401 Senior Seminar course to assess the program. |
| Assessment  Timetable | Annually |
| Who is responsible for assessing and reporting on the results? | Course faculty and Occupational and Environmental Safety and Health Program Chair, Dr. Julie King, [juking@astate.edu](mailto:juking@astate.edu) 870-972-3920 |

**Course-Level Outcomes**

1. What are the course-level outcomes for students enrolled in this course and the associated assessment measures?

|  |  |
| --- | --- |
| **Outcome 1** | Students will learn to evaluate water quality using fundamental principles of the chemical, biological, and physical properties of water. |
| Which learning activities are responsible for this outcome? | Lectures  Assigned readings  Blackboard discussions  Written assignments |
| Assessment Measure | Final Exam rubric benchmark 85% |

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| **Outcome 2** | Students will identify water pollution problems and discuss their control measures |
| Which learning activities are responsible for this outcome? | Lectures  Assigned readings  Possible visit to a water treatment site  Written assignments |
| Assessment Measure | Final paper rubric Benchmark 85%. |

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| **Outcome 3** | Students will be able to describe the basic provisions of standards and regulations providing for the safety of on-site water and waste systems. |
| Which learning activities are responsible for this outcome? | Lectures  Assigned readings  Exams  Written assignments |
| Assessment Measure | Final Exam rubric Benchmark 85% |

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| **Outcome 4** | Students will understand how to approach and classify hazardous waste problems |
| Which learning activities are responsible for this outcome? | Lectures  Assigned readings  Discussion board posts |
| Assessment Measure | Discussion Board rubric benchmark 85% |

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| **Outcome 5** | Students will be able to describe the methods that management uses to minimize hazardous waste. |
| Which learning activities are responsible for this outcome? | Lectures  Assigned readings  Discussion board posts  exams |
| Assessment Measure | Final paper rubric benchmark 85% |

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| **Outcome 6** | Students will be able to evaluate the effectiveness of different treatment and containment technologies in addressing today’s hazardous waste situation. |
| Which learning activities are responsible for this outcome? | Lectures  Assigned readings  Discussion board posts  exams |
| Assessment Measure | Final paper rubric benchmark 85% |

**Bulletin Changes**

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| **Instructions** |
| **Please visit** [**http://www.astate.edu/a/registrar/students/bulletins/index.dot**](http://www.astate.edu/a/registrar/students/bulletins/index.dot) **and select the most recent version of the bulletin. Copy and paste all bulletin pages this proposal affects below. Please include a before (with changed areas highlighted) and after of all affected sections.**  **\*Please note: Courses are often listed in multiple sections of the bulletin. To ensure that all affected sections have been located, please search the bulletin (ctrl+F) for the appropriate courses before submission of this form.** |

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Insert

**Major in Occupational and Environmental Safety and Health**

*Bachelor of Science*

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| **University Requirements:** |  |
| See University General Requirements for Baccalaureate degrees (p. 42) |  |
| **First Year Making Connections Course:** | **Sem. Hrs.** |
| UC 1013, Making Connections | **3** |
| **General Education Requirements:** | **Sem. Hrs.** |
| See General Education Curriculum for Baccalaureate degrees (p. 78)  **Students with this major must take the following:**  *MATH 1023, College Algebra or MATH course that requires MATH 1023 as a prerequisite*  *CHEM 1013 and CHEM 1011 General Chemistry and Lab*  *BIO 2013 and BIO 2011 Biology of the Cell and Lab*  *COMS 1203, Oral Communication (Required Departmental Gen. Ed. Option)* | **35** |
| **Major Requirements:** | **Sem. Hrs.** |
| OESH 3013 Fundamentals of Occupational Safety | 3 |
| OESH 3023 Principles of Environmental Health | 3 |
| OESH 3103 Recognition of Occupational Hazards | 3 |
| OESH 3113 Toxicology | 3 |
| OESH 3203 Control of Occupational Hazards | 3 |
| OESH 3223 Industrial Hygiene Sampling and Analysis Laboratory | 3 |
| OESH 3303 Water, Wastewater, Solid and Hazardous Waste Treatment | 3 |
| OESH 3313 Epidemiology and Biostatistics | 3 |
| DPEM 3503 Principles of Disaster Preparedness and Emergency Management | 3 |
| OESH 4003 OESH Internship | 3 |
| OESH 4013 OSHA Standards and Practices | 3 |
| OESH 4113 Environmental Health and Safety Management | 3 |
| OESH 4203 Principles of Food Safety and Sanitation | 3 |
| OESH 4213 Construction Safety | 3 |
| OESH 4223 Accident Investigation and Analysis | 3 |
| OESH 4303 Environmental Risk Assessment | 3 |
| OESH 4313 Ergonomics | 3 |
| OESH 4323 Air Pollution | 3 |
| OESH 4401 OESH Senior Seminar | 1 |
| POSC 4533 Environmental Law and Administration | 3 |

**Page 534 Course Descriptions**

**OESH 3303 Water, Wastewater, Solid and Hazardous Waste Treatment** - Water quality, water supply, and wastewater disposal, as well as solid and hazardous waste management, treatment, and disposal technology. Admission to the Occupational and Environmental Safety and Health Program required. Prerequisites, OESH 3013, OESH 3023, OESH 3103, OESH 3113, and DPEM 3503. Spring.