

LSC Use Only Proposal No:
LSC Action-Date:

UWUCC Use Only Proposal No: 11-532
UWUCC Action-Date: AP-12/13/11 Senate Action Date: App 01/24/12

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person(s) Dr. Jan K. Wachter	Email Address jan.wachter@iup.edu
Proposing Department/Unit Safety Sciences	Phone 7-3275

Check all appropriate lines and complete all information. Use a separate cover sheet for each course proposal and/or program proposal.

1. Course Proposals (check all that apply)

New Course Course Prefix Change Course Deletion
 Course Revision Course Number and/or Title Change Catalog Description Change

Current course prefix, number and full title: **SAFE 410 Environmental Safety and Health Regulations**

Proposed course prefix, number and full title, if changing: **SAFE 310 Environmental Safety and Health Regulations and Sustainability**

2. Liberal Studies Course Designations, as appropriate

This course is also proposed as a Liberal Studies Course (please mark the appropriate categories below)

Learning Skills Knowledge Area Global and Multicultural Awareness Writing Intensive (include W cover sheet)

Liberal Studies Elective (please mark the designation(s) that applies – must meet at least one)

Global Citizenship Information Literacy Oral Communication
 Quantitative Reasoning Scientific Literacy

Received

3. Other Designations, as appropriate

Honors College Course Other: (e.g. Women's Studies, Pan African)

DEC 19 2011
Liberal Studies

4. Program Proposals

Catalog Description Change Program Revision Program Title Change New Track
 New Degree Program New Minor Program Liberal Studies Requirement Changes Other

Current program name: _____

Proposed program name, if changing: _____

5. Approvals	Signature	Date
Department Curriculum Committee Chair(s)	<u>Dr. Jan Wachter</u> <i>Jan K Wachter</i>	9-13-2011
Department Chairperson(s)	<u>Dr. Lon Ferguson</u> <i>Lon H. Ferguson</i>	9-15-2011
College Curriculum Committee Chair	<u>Dr. Jan Wachter</u> <i>Jan K Wachter</i>	10-20-2011
College Dean	<u>Dr. Mary Swinker</u> <i>Mary E Swinker</i>	10/21/11
Director of Liberal Studies (as needed)		
Director of Honors College (as needed)		
Provost (as needed)		
Additional signatures (with title) as appropriate:		
UWUCC Co-Chairs	<i>Gail Sechrist</i>	12/19/11

Course Revision: SAFE 410 Environmental Safety and Health Regulations

Part II. Description of the Curriculum Change

1. New Syllabus of Record.

The new syllabus of record for this revised course is attached in Appendix A.

2. A summary of the proposed revisions:

- a. The course number and name are being changed from SAFE 410 Environmental Safety and Health Regulations to SAFE 310 Environmental Safety and Health Regulations and **Sustainability**.
- b. Course description was changed to reflect an emphasis on sustainability concepts. A sentence was added to the end of the course description which reads: "Provide an understanding of the application of sustainability concepts in the work environment."

New Course Description (changes in bold)

Provides a working knowledge of federal environmental legislation and their practical application in the work environment. Environmental laws covered include the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act, and other related environmental laws. **Provides an understanding of the application of sustainability concepts and directives in the work environment.**

Old Course Description

Provide a working knowledge of federal environmental legislation and their practical application in the work environment. Environmental laws covered include the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act, and other related environmental laws.

- c. Course content was revised to reflect an emphasis on sustainability concepts. The course was also revised (topics deleted) to reflect that some content of the old course is now being covered in another course titled SAFE 325 Air and Water Pollution. The content was also changed to be more descriptive of the applicable regulations covered in this course.
- d. Course objectives were changed to better track ABET accreditation criteria for student outcomes.

3. Justification/rationale for the revision:

- a. The Safety Sciences Department's advisory board strongly recommended that the concept of sustainability be covered in our curriculum. The concept had been covered in the old SAFE 410 Environmental Safety and Health Regulations course; however it is not emphasized in the title, course objectives, or course content in the syllabus of record. To accommodate the advisory board's recommendation, the course title and syllabus of record are being changed to reflect this emphasis on sustainability.
- b. Based on the proposed program revision to the Safety Sciences Curriculum, this course is now being targeted for students of Junior year standing rather than Senior year standing. Thus the course number was changed from SAFE 410 to SAFE 310 to reflect this.
- c. Some additional content changes to the course are required to conform to the content of additional courses (8 credits) that are necessary to meet our new Safety, Health and Environmental accreditation criteria by the Applied Science Accreditation Commission of ABE. In particular, some of the SAFE 310 course content is now being covered in SAFE 361 Air and Water Pollution. Course objectives were changed to align with ABET accreditation criteria for student outcomes.

4. The old syllabus of record.

The old syllabus of record is attached in Appendix B.

5. Liberal Studies course approval.

These course changes do not affect the Liberal Studies requirements.

Part III. Letters of Support or Acknowledgement

These course changes will not affect other departments; therefore letters of support from other departments were not obtained.

Appendix A: New Syllabus of Record

I. Catalog Description

SAFE 310 Environmental Safety and Health Regulations and Sustainability	3 class hours 0 lab hours
Prerequisite: CHEM 101 or instructor permission	3 credits (3c-01-3cr)

Provides a working knowledge of federal environmental legislation and their practical application in the work environment. Environmental laws covered include the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act and other related environmental laws. Provides an understanding of the application of sustainability concepts in the work environment.

II. Course Outcomes

Students will be able to:

1. Demonstrate an ability to identify and apply applicable environmental health and safety standards, regulations and codes covering air resources and air pollution, water resources and waste water pollution, waste management, and public safety.
2. Demonstrate an understanding of environmental permitting requirements and processes.
3. Develop a knowledge of contemporary safety, health, and environmental issues within a global and social context.
4. Apply sustainability concepts to the workplace, including continual improvement and proactive management approaches.

III. Course Outline

A. Environmental regulations	6 hours
1. Overview	
2. Trends	
3. Appropriateness of risk assessment	
B. Regulations and permits pertaining to air quality	6 hours
1. Clean Air Act	
2. Title V permits	
C. Regulations and permits pertaining to water quality	6 hours
1. Safe Drinking Water Act	
2. Clean Water Act	
3. NPDES permits	
D. Regulations and permits pertaining to waste management.	6 hours
1. Resource Conservation and Recovery Act	

2. Comprehensive Environmental Response, Compensation and Liability Act
3. Hazardous Waste Manifest Sheets

Midterm	1 hour
E. Regulations pertaining to public safety.	6 hours
1. Ethics	
2. Toxic Substances Control Act	
3. Federal Insecticide, Fungicide and Rodenticide Act	
4. Emergency Planning and Community Right-to-Know Act including Tier I/II Reports and Form R's	
5. Asbestos Hazard Emergency Response Act	
F. Emerging issues in environmental health and safety.	5 hours
1. Ethics	
2. Global concerns and regulatory implications	
3. Climate change and regulatory implications	
G. Sustainability and corporate social responsibility.	6 hours
1. Pollution prevention	
2. Green technologies	
3. Green building designs	
4. ISO-14001 environmental management system standard	
5. Sustainable/renewable resources in industry	

Final Exam (during Final Exam Week) 2 hours

IV. Evaluation Methods

The faculty person assigned to teach this course could be one of several faculty within the Safety Sciences Department. What follows is an example of the evaluation methods and weighting used for this course:

Your final grade in this class will be a compilation of the following:

A. Examinations	30%
B. Quizzes	30%
C. Homework/Projects	35%
D. Class Participation	5%

Examinations and Quizzes: The examinations and quizzes will be short answer, multiple choice, true/false and matching with material coming from lecture notes, the text and handouts.

Homework/Projects: Homework and projects will be assigned based on the material covered in the specific unit, many of which are case studies and small group projects involving the recognition, evaluation and control of occupational health hazards.

Class Participation: This includes but is not limited to individual participation in whole class and small group discussions and other brief class presentations.

V. Example Grading Scale

In general, the following scale will be used in assigning letter grades, related to the evaluation of student performance based on a "percentage" grading scale: A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%; F = Below 60%.

VI. Attendance Policy

The undergraduate course attendance policy will be consistent with the university undergraduate attendance policy included in the Undergraduate Catalog.

VII. Required Textbooks

Kubasek, N. K. & Silverman, G.S. (2011). *Environmental Law, 7th Edition*. Upper Saddle, NJ: Pearson Education, Inc., Prentice Hall.

VIII. Special Resource Requirements

None.

IX. Bibliography

Adelson, G., Engell, J., Ranalli, B., & Van Anglen, K.P. (2008). *Environment: An Interdisciplinary Anthology*. Upper Saddle River, NJ: Prentice Hall.

Ayers, D. (2010). Environmental Aspects and Impacts: A System for Identifying Priorities & Setting Goals. *Professional Safety (Feb)*.

Bernosky, J. (2011). *Overview of Environmental Law and Regulations – Navigating the Green Maze*. Denver, CO: American Water Works Association.

Bodger, K. (2003). *Fundamentals of Environmental Sampling*. Rockville, MD: Government Institutes.

Hart, J. & McKiel, M. (2002). *ISO 14000: Questions and Answers, 6th edition*. Itasca, IL: National Safety Council.

Kubasek, N. & Silverman, G. (2010). *Environmental Law, 7th Edition*. Upper Saddle River, NJ: Prentice Hall PTR.

Lockwood, L., Stewart, E. & Dietz, D. (2008). *Foundations of Environmental Sustainability – The Coevolution of Science and Policy*. New York, NY: Oxford University Press, Inc.

Martenson, C. (2011). *The Crash Course: The Unsustainable Future of our Economy, Energy, and Environment*. Hoboken, NJ: Wiley Publishing, Inc.

McCarthy, J. et al. (2011). *Clean Air Act: A Summary of the Act and Its Major Requirements*. CRS Report to Congress – Prepared for Members and Committees of Congress. Congressional Research Service.

Minnick, W. & Wachter, J.K. (2010). Integrating Environmental into SH&E. *The Educator*, 8(2), 1, 16-26.

National Safety Council. (2002). *7 Elements of a Successful Environmental Program*. Itasca, IL: National Safety Council.

Owen, O. & Chiras, D. (2002). *Natural Resource Conservation, An Ecological Approach, 8th edition*. Macmillan Publishing Company.

Pichtel, J. (2000). *Fundamentals of Site Remediation*. Rockville, MD: Government Institutes.

Ruschmann, P. (2009). *Environmental Regulations and Global Warming*. New York, NY: Infobase Publishing.

Spellman, F. & Whiting, N. (1999). *Water Pollution Control Technology – Concepts and Applications*. Rockville, MD: Government Institutes.

Sullivan, T. (ed.) (2003). *Environmental Law Handbook, 17th edition*. Rockville, MD: Government Institutes.

Taubitz, M. (2010). Lean, Green & Safe: Integrating Safety Into the Lean, Green & Sustainability Movement. *Professional Safety (May)*.

Voyles, J. (2002). *Managing Your Hazardous Wastes, 2nd edition*. Rockville, MD: Government Institutes.

Withgott, J. H. & Brennan, S. (2010). *Environment: The Science Behind the Stories, 4th Edition*. Boston, MA: Addison-Wesley.

Historical bibliography:

Hallenbeck, W.H. (1993). *Quantitative Risk Assessment for Environmental and Occupational Health, 2nd edition*. Boca Raton, FL: CRC Press.

Harrison, L. (1995). *Environmental, Health, and Safety Auditing Handbook, 2nd edition*. New York, NY: McGraw-Hill.

Howard, P.H. & Neal, M. (1992). *Dictionary of Chemical Names and Synonyms*. Boca Raton, FL: Lewis Publishers.

Appendix B: Old Syllabus of Record

I. Catalog Description

SAFE 410 Environmental Safety and Health Regulations

3 class hours

0 lab hours

3 credits

Prerequisites: SAFE 220

(3c-01-3cr)

Provide a working knowledge of federal environmental legislation and their practical application in the work environment. Environmental laws covered include the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act and other related environmental laws.

II. Course Objectives

The students will be able to:

- A. demonstrate a fundamental working knowledge of federal environmental legislation.
- B. identify the causes and controls of drinking water and waste water pollution.
- C. identify the causes and controls of air pollution problems and provide appropriate control strategies.
- D. apply a basic knowledge of the environmental field of solid wastes including applicable disposable methods.
- E. communicate effectively.
- F. recognize contemporary and global environmental issues.

III. Course Outline

- A. Environmental Regulations (6 hours)
 - 1. Overview
 - 2. Trends
 - 3. Appropriateness of risk assessment
- B. Regulations Pertaining to Air Quality (12 hours)
 - 1. Basic issues
 - 2. Major sources of air pollution
 - 3. Extent of the air pollution problem
 - 4. The Clean Air Act and Amendments (CAAA)
 - 5. Evaluation and control strategies for air pollution
 - 6. Permitting

Midterm	(1 hour)
C. Regulations Pertaining to Water Quality	(12 hours)
1. Basic issues	
2. Major sources of water pollution	
3. Extent of the water pollution problem	
4. Clean Water Act (CWA)	
5. Safe Drinking Water Act (SDWA)	
6. Evaluation and control strategies for water pollution	
7. Permitting	
D. Regulations Pertaining to Soil Contamination	(8 hours)
1. Basic issues	
2. Major sources of solid waste	
3. Extent of the solid waste problem	
4. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	
5. Resource Conservation and Recovery Act (RCRA)	
6. Identification and control strategies for soil contamination	
7. Permitting	
E. Emerging Issues in Environmental Safety	(3 hours)
1. Ethics	
2. Regulatory	
3. Global	
Final Examination	(2 hours)

IV. Evaluation Methods

The faculty person assigned to teach this course could be one of several faculty within the Safety Sciences Department. What follows is an example of the evaluation methods and weighting used for this course:

Your final grade in this class will be a compilation of the following:

E. Examinations	30%
F. Quizzes	30%
G. Homework/Projects	35%
H. Class Participation	5%

Examinations and Quizzes: The examinations and quizzes will be short answer, multiple choice, true/false and matching with material coming from lecture notes, the text and handouts.

Homework/Projects: Homework and projects will be assigned based on the material covered in the specific unit, many of which are case studies and small group projects involving the recognition, evaluation and control of occupational health hazards.

Class Participation: This includes but is not limited to individual participation in whole class and small group discussions and other brief class presentations.

V. Example Grading Scale

In general, the following scale will be used in assigning letter grades, related to the evaluation of student performance based on a “percentage” grading scale:

A = 90-100%
B = 80-89%
C = 70-79%
D = 60-69%
F = Below 60%

VI. Attendance Policy

The attendance policy for this course conforms to the University’s Undergraduate Course Attendance Policy; in that all students are expected to attend and participate in class to enhance their learning.

VII. Required Textbooks

National Safety Council. (2002). Accident Prevention Manual: Environmental Management, National Safety Council, Itasca, IL, 2nd edition.

VIII. Special Resource Requirements

None.

IX. Bibliography

Bodger, K. (2003). Fundamentals of Environmental Sampling, Government Institutes, Rockville, MD.

Hart, J. & McKiel, M. (2002). ISO 14000: Questions and Answers. National Safety Council, Itasca, IL, 6th edition.

National Safety Council. (2002). 7 Elements of a Successful Environmental Program. National Safety Council, Itasca, IL.

Owen, O. and Chiras, D. (2002). Natural Resource Conservation, An Ecological Approach, Macmillan Publishing Company, 8th edition.

Pichtel, J. (2000). *Fundamentals of Site Remediation*. Government Institutes, Rockville, MD.

Spellman, F. & Whiting, N. (1999). *Water Pollution Control Technology – Concepts and Applications*. Government Institutes, Rockville, MD.

Sullivan, T, Editor. (2003). Environmental Law Handbook, Government Institutes, Rockville, MD. 17th edition.

Voyles, James. (2002). *Managing Your Hazardous Wastes*, Government Institutes, Rockville, MD. 2nd edition.

Historical References:

Hallenbeck, W.H. (1993). Quantitative Risk Assessment for Environmental and Occupational Health, 2nd edition. Boca Raton, FL: CRC Press.

Harrison, L. (1995). Environmental, Health, and Safety Auditing Handbook, 2nd edition. New York: McGraw-Hill.

Howard, P.H. and Neal, M. (1992). Dictionary of Chemical Names and Synonyms. Boca Raton, FL: Lewis Publishers.

Appendix C: Proposed Revised Catalog Description

SAFE 310 Environmental Safety and Health Regulations and Sustainability (3c-01-3cr)

Prerequisite: CHEM 101 or instructor permission

Provides a working knowledge of federal environmental legislation and their practical application in the work environment. Environmental laws covered include the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act and other related environmental laws. Provides an understanding of the application of sustainability concepts in the work environment.