# Purdue University
REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF AN UNDERGRADUATE COURSE
(10000-40000 LEVEL)

## INSTRUCTIONS:
Please check the items below which describe the purpose of this request:

- ✓ New course with supporting documents
- □ Add existing course offered at another campus
- □ Expiration of a course
- □ Change in course number
- □ Change in course title
- □ Change in course credit/grade
- □ Change in course attributes (department head signature only)
- □ Change in instructional hours
- □ Change in course description
- □ Change in course requisites
- □ Change in semesters offered (department head signature only)
- □ Transfer from one department to another

## PROPOSED:

### Subject Abbreviation
CE

### Course Number
366

### Long Title
Environmental Engineering Laboratory

### Short Title
Environ Engr Lab

## EXISTING:

### Subject Abbreviation

### Course Number

### Long Title

### Short Title

## TERMS OFFERED
Check All That Apply:
- ☐ Summer
- ☑ Fall
- ☑ Spring

### CAMPUS(ES) INVOLVED
- ☐ Calumet
- ☐ Cont Ed
- ☐ Ft. Wayne
- ☐ Indiapolis
- ☐ N. Central
- ☐ Tech Statewide
- ☐ W. Lafayette

## CREDIT TYPE

<table>
<thead>
<tr>
<th>1. Fixed Credit Or, Hrs.</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>2. Variable Credit Range:</td>
<td></td>
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<tr>
<td>Maximum Cr. Hrs.</td>
<td>To</td>
</tr>
<tr>
<td>Minimum Cr. Hrs. (Check One)</td>
<td></td>
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<tr>
<td>3. Equivalent Credit</td>
<td>Yes</td>
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</tbody>
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## COURSE ATTRIBUTES
Check All That Apply:
- ☐ 8 Registration Approval Type
- ☐ Instructor
- ☐ 7 Variable Title
- ☐ 8 Honors
- ☐ 9 Full Time Privilege
- ☐ 10 Off Campus Experience

## COURSE DESCRIPTION (INCLUDE PREQUISITES/RESTRICTIONS):
P: CE 365. Application of basic chemistry and chemical calculations to measure physical, chemical, and bacteriological parameters of water and wastewater. Laboratory methods and interpretation of results with regard to environmental engineering applications such as design and operation of water and wastewater treatment processes, and to the control of the quality of natural water.

## SIGNATURES

- Calumet Department Head: Donald Mydlarz, 12/22/08
- Calumet School Dean: Michael W. Hall, 12/22/08
- Ft. Wayne Department Head:  
- Ft. Wayne School Dean:  
- Indianapolis Department Head:  
- Indianapolis School Dean:  
- North Central Department Head:  
- North Central Chancellor:  
- West Lafayette Department Head:  
- West Lafayette College/School Dean:  
- West Lafayette Registrar:  

OFFICE OF THE REGISTRAR
Required Course: **CE 366 – Environmental Engineering Laboratory**  
Offered each fall

**Catalog Data:**  
Application of basic chemistry and chemical calculations to measure physical, chemical, and bacteriological parameters of water and wastewater. Laboratory methods and interpretation of results with regard to environmental engineering applications such as design and operation of water and wastewater treatment processes, and to the control of the quality of natural waters.

**Prerequisites:**  
**CE 365 – Environmental Engineering**

**Corequisite:**  
N/A

**Required Textbook:**  
None

**Reference:**


**Course Objectives:**  
To introduce students as to how the common environmental experiments relating to water, water quality, and wastewater are performed. This course will help students know which tests are appropriate for given environmental problems, statistically interpret laboratory results and write technical reports, and apply the laboratory results to problem identification, quantification, and basic environmental design.

**Schedule:**  
One 150-minute class per week.

**Laboratory Topics**

1. Orientation, introduction, lab safety, sampling procedure
2. Experiment 1: Determination of pH of Water  
   Experiment 2: Determination of Color of Water
3. Experiment 3: Determination of Turbidity of Water  
   Experiment 4: Determination of Solids of Water
4. Experiment 5: Determination of Carbon Dioxide of Water  
   Experiment 6: Determination of Alkalinity of Water
5. Experiment 7: Determination of Hardness of Water  
   Experiment 8: Determination of Chloride of Water  
   1 lab  
   ½ lab  
   ½ lab  
   ½ lab  
   ½ lab  
   ½ lab
6. Quiz 1
7. Experiment 9: Determination of Metal (Iron/Arsenic) of Water ½ lab
   Experiment 10: Determination of Biochemical Oxygen Demand ½ lab
8. Experiment 11: Determination of Chemical Oxygen Demand 1 lab
9. Experiment 12: Determination of Alum Dose (Alum Coagulation) 1 lab
10. Experiment 13: Determination of Break Point Chlorination 1 lab
11. Experiment 14: Determination of Total and Fecal Coliform of Water 1 lab
12. Visit to a local Water Treatment Plant 1 lab
13. Visit to a local Wastewater Treatment Plant 1 lab
14. Review 1 lab
15. Final Quiz 1 lab

Course Outcomes
Upon successful completion of this course, students shall be able to:

1. Perform common environmental experiments relating to water, water quality, and wastewater, and know which tests are appropriate for given environmental problems. [b (3), e (2)]
2. Statistically analyze and interpret laboratory results [b (3)]
3. Apply the laboratory results to problem identification, quantification, and basic environmental design. [e (2)]
4. Understand and use the water and wastewater sampling procedure and sample preservations [k (6)]
5. Obtain the necessary background for subsequent courses in environmental engineering. [i (9)]
6. Demonstrate the ability to write clear technical lab reports. [g (8)]
7. Use word processors and other modern software packages in writing and finishing the report. [g (8), i (9)]
8. Demonstrate the ability to work in groups. [d (5), g (8)]
9. Understand the impact of water and waste water treatment plant on people and environment [h (9)]
10. Understanding and apply ethical issues associated with decision making and professional conduct in the lab and field environment. [f (7)]

ABET category
Engineering science: 0.90 credits or 90%
Engineering design: 0.10 credits or 10%