INSTRUCTOR: Nicholas Basta  
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INSTRUCTOR ASSISTANT: Dax Fisher- Garibay, fisher-garibay.1@buckeyemail.osu.edu

COURSE DESCRIPTION: 3 semester hr. An overview of contaminant sources, transport through soil and water, and of environmental fate and impact of contaminants to human and ecosystem receptors. Topics include assessment and remediation of soil and water contaminants.

PREREQUISITES: One term of introductory chemistry (e.g. Chem 1110 or Chem 1210) or graduate student standing

COURSE OBJECTIVES: After completion of this course: 
You should have an understanding of:
1. sources of major environmental pollutants,
2. the relationship between environmental processes and contaminant transport and exposure,
3. pollutant transport through human and ecosystem pathways
4. approaches used to prevent or remediate environmental contamination

TEXTBOOKS:

CLASS NOTES: 
Class notes will be posted as pdf files on-line

EXAMINATIONS AND GRADING
Undergraduate and graduate students are graded separately

<table>
<thead>
<tr>
<th>Percentage of Grade</th>
<th>Undergraduate Student</th>
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<tr>
<td>2 exams @ 15 each</td>
<td>30</td>
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<tr>
<td>Final Examination</td>
<td>15</td>
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<tr>
<td>Topical briefs, 3 @ 10 each</td>
<td>30</td>
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<td>Problem sets</td>
<td>15</td>
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<td>Attendance</td>
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Grading A 90-100; B 80-89; C 70-79; D 60-69; F < 60. 
Plus/minus grading applied to overlap ranges.

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<th>Graduate Student</th>
<th>% OF GRADE</th>
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<td>2 exams @ 15 each</td>
<td>30</td>
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<tr>
<td>Final Examination</td>
<td>15</td>
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<tr>
<td>Research paper and presentation</td>
<td>25</td>
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<tr>
<td>Oral brief on key research</td>
<td>5</td>
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<tr>
<td>Problem sets</td>
<td>15</td>
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<td>Attendance</td>
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**DISABILITY STATEMENT**
Students with disabilities who need accommodations should see Dr. Basta during office or contact him by telephone (614-292-6282) or e-mail (basta.4@osu.edu) to make arrangements. Special needs must be discussed and arrangements made well in advance (preferably before the first week of class) of when arrangements to accommodate specific needs are required. Special accommodations may be arranged through the OSU Office of Disability Service, 150 Pomerene Hall, 1760 Neil Ave., Telephone 614-292-3307, [http://slds.osu.edu/](http://slds.osu.edu/)

**TOPICS COVERED:**
**Fundamental concepts:** types of pollution; environmental chemistry constants and contaminant partitioning; overview of contaminant fate and transport processes;

**Environmental Pollution**
Overview of key fate and transport issues: soil and land pollution; surface water, subsurface water; atmospheric pollution

**Fate and Transport of Specific Contaminants**
Agricultural (nutrients, pesticide, antibiotics)
Industrial and municipal derived (toxic organic chemicals, heavy metals, radioactivity)
Pharmaceutical and personal care products
Emerging pollutants (PFAS, nanoparticles, microplastics)

**Pollution in the Global System**
Major contaminant issues and human health
Environmental laws / environmental toxicology and risk assessment
New approaches and sustainable development

**Computer and Tablet Use Policy**
Open computers and surfing distracts other students and is unprofessional. However, computers / tablets for class notes is acceptable. If you are using your devices for class—fine. If not (e.g., surfing, work for other class), you should sit in the back two rows of the classroom to minimize distraction to others in the class. This will be enforced. NO computers /tablet or phone use permitted during exams.