

CTTI Course – Fall 2011
Illinois Institute of Technology
Environmental Science: Focus on the Biological Removal of Pollution
Location: 3424 S. State St. Room

Course Description: The purpose of this 11-week environmental science course for high school science educators is to develop an understanding of the biological removal of pollution. Three main topics will be covered in this course:

Topic 1: Bacteria - Development and use of aerobic bacteria communities that require low amounts of oxygen to decrease the cost of the wastewater treatment process.

Topic 2: Plants – Restoration efforts and developments to remove and prevent the reoccurrence of invasive plants in a local ecosystem.

Topic 3: Animals - Development and use of vermicomposting technologies to degrade organic materials.

There will be three classes designated to each main topic and each will consist of a variety of learning activities. The first class will be led by practicing scientists who will lecture and facilitate small group discussions to cover relevant background information and current research studies and practices related to the topic. Scientists and science educators will collaborate to lead hands-on, interactive experiences in the second class that can be easily adapted into a high school science curriculum. The third class will be led by science educators who will demonstrate advanced teaching strategies that course participants can use to develop creative and engaging lesson plans. Designated planning time will be provided throughout the course. This course will equip high school science teachers with the science content and pedagogical skills to develop and deliver a 12th grade capstone environmental science course.

| Class Date | Description |
|---|---------------------------------------|
| Thursday, September 8, 5:00 – 7:30 | Overview of course |
| Thursday, September 15, 5:00 – 7:30 | Topic 1: Bacteria |
| Thursday, September 22, 5:00 – 7:30 | Topic 1: Bacteria |
| Thursday, September 29, 5:00 – 7:30 | Topic 1: Bacteria |
| Wednesday, October 5, 5:00 – 7:30 (Date is tentative) | Topic 2: Plants |
| Thursday, October 6, 5:00 – 7:30 (Date is tentative) | Topic 2: Plants |
| Saturday, October 8, Time TBD (Date is tentative) | Topic 2: Plants |
| Monday, October 10, Time TBD | Stickney Water Reclamation Plant Tour |
| Thursday, October 20, 5:00 – 7:30 | Topic 3: Animals |
| Thursday, November 10, 5:00 – 7:30 | Topic 3: Animals |
| Thursday, November 17, 5:00 – 7:30 | Topic 3: Animals |
| Thursday, December 1, 5:00 – 7:30 | Final Projects |