ANALYTICAL ENVIRONMENTAL CHEMISTRY LABORATORY
11:375:310 2 credits

INSTRUCTOR: Jeffra Schaefer, ENR 356, (848) 932-5779, jschaefer@envsci.rutgers.edu

TEACHING ASSISTANTS:
Wednesdays and Thursdays: Sarah Janssen, sjanssen30@gmail.com
Wednesdays and Fridays: Isatis Cintron, isatis.cintron@rutgers.edu

COURSE TIMES:
Lecture (all sections): Tuesdays 9:15 – 10:35, Room 109 CDL
Section 1: Wednesdays 10:55 – 1:55, Room 205 ENRS
Section 2: Thursdays 10:55 – 1:55, Room 205 ENRS
Section 3: Fridays 9:15 – 12:15, Room 205 ENRS

DESCRIPTION: A chemistry laboratory course covering basic chemical lab techniques for the analysis of environmental samples and on written presentation of analytical results.

REQUIRED MATERIALS:
1. Lab manual (Sakai)
2. A lab notebook (spiral-bound, lab notebook, or composition book; no loose pages)
3. Safety glasses/goggles

LEARNING GOALS:
This class will contribute toward students’ ability to:
1. apply knowledge from the sciences and mathematics to environmental problems and solutions
2. use the skills and modern environmental science techniques and tools necessary for a successful career in the field
3. design and conduct experiments, and analyze and interpret data;
4. function effectively on multidisciplinary teams
5. communicate technical information effectively (orally, in writing, and through electronic media)
6. professional ethical responsibilities
7. contemporary environmental science issues and the impact of environmental science in a global and societal context
IMPORTANT NOTICES:
Must attend all Tuesday lecture classes
There are NO make-up labs. Attend ONLY the lab you are assigned to, not other sections.
Bring your laptop to class. We will be using Excel 2013 in this class.
No cell phones or texting in class
Must wear shoes with closed toes and bring safety glasses.

GRADING: 3 short lab write-ups (35% total), 2 formal lab reports (40% total), weekly quizzes (7.5%), and problem sets/homework (7.5%).

HOMEWORK: Homework in the form of problem sets, short assignments, figures, etc... will be assigned throughout the semester. This is due at the start of the lecture or lab period. All homework must be submitted in hard copy (paper only); electronic versions will NOT be accepted without prior approval.

QUIZZES: Starting week 3, short quizzes will be given at the start of each lab class (and occasionally lecture) to determine whether you are prepared for the lab exercise by reading the lab manual ahead of time. Late-comers will not be accommodated; you must arrive on time. See schedule provided and that posted on the Sakai website to ensure you are prepared for the week’s lesson.

LAB REPORT WRITING ASSIGNMENTS: There are two types of writing assignments: short lab write-ups and formal lab reports. Late reports will be docked 10% per day, including weekends. No electronic versions allowed without prior approval.

Short lab write-ups (due one-week after the completion of lab topic):
Lab 1: Water quality measurements (15%); Due Week 4.
Lab 3: Methane by Gas Chromatography (10%); Due Week 8.
Lab 4: PAH by HPLC (10%); Due Week 11.

Formal lab reports (usually due two weeks after the final lab):
Lab 2: Nutrient inputs and their affect on water quality. Completed draft due Week 8. Final version due Week 9 (25%)
Lab 5: Bioaccumulation of metals in the Hackensack River region. Completed draft due Week 13. Final version due Week 14 (last day of class). (25%)