Course: CHEM 483/283      Instructor: Dr. Katherine M. Mullaugh  
Pre-requisite: CHEM 220 and CHEM 220L (CHEM 483)  
Course Meetings: May 14-17 at C of C, May 18-30 in Costa Rica  
Course Locations: SSMB 115  
Office Hours: By Appointment  

Instructor: Dr. William Veal  
Office: 86 Wentworth, 315  
Email: vealw@cofc.edu

Pre-requisite: CHEM 111/111L or 101/101L (CHEM 283)  

Course Description  
In this study abroad course students will apply analytical chemistry to questions concerning water quality. The role of nutrients will be emphasized as a central control on the health of aquatic environments and water quality parameters measured will include: pH, dissolved oxygen, nitrate, ammonium, phosphate and alkalinity. After completing training at C of C, students will collect samples and carry out chemical analyses at and around the UGA field station in Costa Rica. Students will use both portable field-based methods and analyses carried out in the laboratory.

Required course materials: scientific calculator, lab coat, safety glasses, two composition notebooks

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Student Learning Outcomes:  
1. Students will be able to explain role of various chemical, physical and biological processes that drive various environmental cycles in the environment.  
2. Students will be able to collect and accurately analyze basic measures of water quality in the natural environment (temperature, pH, conductivity, dissolved oxygen, nitrate, ammonium, phosphate and alkalinity).  
3. Students will be able to defend the accuracy and validity of their results.  
4. Students will be able to identify the cultural and economic values of water in a Latin American community.

Attendance: It is expected that you will attend all lecture, lab and class activities. If you must miss any class due to unexpected illness, please promptly notify the instructor(s).

Disability Services: If you are a student with a documented disability who will require accommodations in this course, please provide the proper documentation in the form of a Professor Notification Letter (PNL) as soon as possible. Please come to speak with me during office hours about how I may best accommodate you in this course.

Academic Dishonesty: Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when suspected, are investigated. Each incident will be examined to determine the degree of deception involved. Incidents where the instructor determines the student’s actions are related more to a misunderstanding will be handled by the instructor. A written intervention designed to help prevent the student from repeating the error will be given to the student. The intervention, submitted by form and signed both by the instructor and the student, will be forwarded to the Dean of Students and placed in the student’s file.
Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XXF in the course, indicating failure of the course due to academic dishonesty. This status indicator will appear on the student’s transcript for two years after which the student may petition for the XX to be expunged. The F is permanent.

Students should be aware that unauthorized collaboration--working together without permission-- is a form of cheating. Research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class without obtaining prior permission from the instructor. Students can find the complete Honor Code and all related processes in the Student Handbook at http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php.

**Student Conduct:** Each student is expected to participate in labs, classroom discussions, and group work. As part of an international program, students are held to higher standards while representing the College of Charleston and themselves overseas. Cultural differences exist and students will be expected to consider others in the context of cultural differences.

**Grading:**

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<tr>
<td>Lab Notebook</td>
<td>40%</td>
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<td>Travel Journal</td>
<td>15%</td>
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<tr>
<td>Research Project</td>
<td>30%</td>
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<td>Lab Citizenship</td>
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Good record keeping is essential to successful field work. Your lab notebook (40%) will be evaluated based on completeness and clarity of the following:

- Data collection sheet (provided and taped into your lab notebook)
- Data organization
- Analysis
- Interpretation

A travel journal (15%) will be an opportunity to reflect on the broader cultural context of this experience. This may be a simple recollection on a day’s activities, or students will be given writing prompts to respond to in their writing.

All students, working in pairs, will complete a small research project (30%) close to the end of our time at UGA Costa Rica. Your research project will be graded according to the following:

- Research plan (by Friday, May 25)
- Research execution (Saturday – Monday, May 26-28)
- Research presentation (Tuesday, May 29)

Unlike other class projects you may have had like this, the research project will be completed in a more informal way. For example, you will not write a formal research proposal – instead you must just have a conversation with the instructors about your plans so we can offer suggestions. We will have a strict “no PowerPoint” policy for finals presentations. Instead all students will give a “chalk talk” in the (open air!) classroom on our last full day in Costa Rica.