Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. This request is submitted by the Department of
   Atmospheric Sciences
   ATMO 664 - Laboratory Methods in Atmospheric and Environmental Sciences

2. Course prefix, number and complete title of course:

3. Course description (not to exceed 50 words):
   Classroom and laboratory course; introduction to chemical techniques used to monitor the atmosphere and environment; instrumentation, sampling strategies; survey of current literature focusing on development of new techniques.

Graduate Standing

4. Prerequisite(s):

Cross-listed with:

5. Is this a variable credit course?  □ Yes  □ No  If yes, from ______ to ______

6. Is this a repeatable course?  □ Yes  □ No  If yes, this course may be taken ______ times.
   Will this course be repeated within the same semester?  □ Yes  □ No

7. Has this course been taught as a 489/689?  □ Yes  □ No  If yes, how many times? ______
   Indicate the number of students enrolled for each academic period it was taught.  Fall 2005 and 2007, 9 students each time

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

   Tech Elective M.S. ATMO, Ph.D. ATMO,

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments.  Attach approval letters.

10. Predix  Course #  Title (excluding punctuation)

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<tr>
<th>ATMO</th>
<th>664</th>
<th>Lab</th>
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<th>Lect</th>
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<th>CLIP and Fund Code</th>
<th>Admin. Unit</th>
<th>Acad. Year</th>
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Approval recommended by:

Head of Department [Signature] 11/7/08

Head of Department (if cross-listed course) [Signature] 12/13/08

Submitted to Coordinating Board by:

Associate Director, Curricular Services [Signature] 12/13/08

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07

1 of 8 B1
Laboratory Methods in Atmospheric Sciences Syllabus

Instructor: Sarah Brooks
845-5632
Eller O&M 1105A
sbrooks@ariel.met.tamu.edu
Office hours: Tues and Thurs, 3-4 PM
Course Credits: Total: 3 hrs (Lecture: 2 hrs, Laboratory: 1 hr)

Teaching Assistant: TBA

Prerequisites: Graduate student standing.

Course Description:
Classroom and laboratory course; introduction to chemical techniques used to monitor the atmosphere and other Earth systems; sampling strategies; survey of current literature focusing on development of new techniques.

Learning Outcomes:
Acquire basic instrument skills needed to conduct laboratory measurements.
Develop a knowledge base of available instrumentation to apply to atmospheric measurements.
Learn how to choose appropriate instrumentation and sampling strategies for a specific measurement goal.
Learn how to read and critique the current literature.
Learn to write and critique research proposals.

Required Text:

Additional readings will be provided by the instructor from various sources. Additional handouts detailing procedures for each experiment will be provided.

Recommended Additional Texts:

Course Assignments and Grading:
The course will be conducted in a lecture and lab format and will meet Mondays and Wednesdays from 12:40-1:30 and 1:50-3:50 pm, respectively. Demonstrations of laboratory techniques will be provided by the lecturer or teaching assistant. Students will work with laboratory partners to conduct the assigned experiments. Each student will be
required to write a laboratory report and analysis for each experiment and to turn in a copy of the records kept during the experiment.

Weekly reading assignments of current journal articles demonstrating the techniques covered in this class will be assigned. Each student will be required to lead a class discussion of at least one reading assignment.

Each student will submit a proposal for an independent research project. Students may elect to work in teams of 2 students if appropriate. Each student will orally present his/her findings to the class in a final project report.

Grades will be weighted as follows:
Laboratory reports: 50%  Project proposal: 15%
Discussion leadership: 10%  Final presentation: 15%
Laboratory technique and class participation: 10%

Schedule:

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12 Fourier Transform Infrared Spectroscopy (FTIR) Projects
13 Flow Tube Studies Projects on Monday, Thanksgiving
14 Presentations Presentations
Current trends in Atmospheric Research

Americans with Disabilities Act (ADA) Policy Statement
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, the legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.

Academic Integrity Statement
According to Student Rule 20.1.3, plagiarism occurs when a writer does not cite sources of information or uses work done by someone else as if it were his or her own. You should credit your use of anyone else's words, graphic images, or ideas using standard citation styles. If I should discover that you have failed to properly credit sources or have used a paper written by someone else, I will recommend that you receive an F in this course. You will have the right to submit a written appeal to the department head, as outlined in Student Rule 52.

If you have more questions about plagiarism or syllabi, you can visit the University Writing Center website:
http://uwc.tamu.edu/faculty/pedagogy/manage/syllabus_require.html

Absences
Students are expected to attend class and complete all assignments. Following the rules of the University, absences will be handled as outlined on the student rules website (http://student-rules.tamu.edu/rule7.htm)
Laboratory Methods in Atmospheric Sciences Syllabus

Instructor: Sarah Brooks
845-5632
Eller O&M 1105A
sbrooks@ariel.met.tamu.edu
Office hours: TBA
Teaching Assistant: TBA

Prerequisites: Chemistry 101 and 1 semester of Calculus (Math 171 or Math 151).

Course Description:
Classroom and laboratory course; introduction to chemical techniques used to monitor the atmosphere and other Earth systems; sampling strategies; survey of current literature focusing on development of new techniques.

Learning Outcomes:
Acquire basic instrument skills needed to conduct laboratory measurements.
Learn what information can be obtained with various instruments used in atmospheric and environmental applications.
Learn how to read and critique the current literature.
Learn to write a literature review.

Required Text:

Additional readings will be provided by the instructor from various sources. Additional handouts detailing procedures for each experiment will be provided.

Recommended Additional Texts:

Course Assignments:
The course will be conducted in a lecture and lab format and will meet Mondays and Wednesdays from 12:40-1:30 and 1:50-3:50 pm. Demonstrations of laboratory techniques will be provided by the lecturer or teaching assistant. Students will work with laboratory partners to conduct the assigned experiments. Each student will be required to write a laboratory report and analysis for each experiment and to turn in a copy of the records kept during the experiment. Weekly reading assignments of current journal articles demonstrating the techniques covered in this class will be assigned.
As a final project, each student will write a literature review. A literature review is a summary of the current knowledge of a topic, based on scientific articles published to date. The purpose of a literature review is to survey and read all articles on a given topic and to summarize what is known at this time on that topic. A good literature review ends with suggestions for what experiments should be done next. Each student will orally present his/her findings to the class in a final presentation.
Grading:
Grades will be weighted as follows:
Laboratory reports: 40%  
Midterm Exam: 20%  
Laboratory technique and class participation: 10%  
Final Presentation: 15%  
Final Written Review: 15%

Grades will be assigned according to the following scale:
A= 90-100%, B= 80-89%, C=70-79%, D 60-69%, F 59% and below.

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For more information on academic honesty, you may also visit the Aggie Honor System Office website:
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