North Carolina State University Course Syllabus
BAE 502 - 601 - Instrumentation for Hydrologic Applications

BAE 502 Course Syllabus

BAE 502 - Instrumentation for Hydrologic Applications

Section 601
SPRING 2012
3 Credit Hours

Course Description

Learning Outcomes
After completion of this course students should be able to:
• distinguish between quantities that are and those that are not directly measurable;
• determine appropriate spatial and temporal measurement scales;
• choose appropriate commercially-available sensors;
• specify data storage requirements for dataloggers;
• specify a complete sensor-datalogger system;
• calculate uncertainty associated with a measurement process;
• apply appropriate data smoothing and quality checking filters;
• develop a complete data collection and management plan.

Course Structure
The course will have weekly online sessions (Elluminate). Readings will be provided. There will be weekly homework assignments, typically problem sets.
Each student will do a semester project on a topic that is proposed by the student and must be approved by the instructor.
There will be a comprehensive final exam.

Instructors
Rodney L Huffman (huffman) - Instructor
Email: rod_huffman@ncsu.edu
Phone: 919-515-6740 (email preferred)
Fax: 919-515-7760 (not recommended)
Office Location: 151 DS Weaver Labs
Office Hours: TBA

Course Meetings
There will be one online session per week, probably in the evening. The time will be arranged to best accommodate schedules.

Course Materials
## Textbooks
None.

## Expenses
None.

## Materials
None.

## Requisites and Restrictions

### Prerequisites
MA 341, BAE 401 or ECE 331, ST 370 or ST 511

### Co-requisites
None.

### Restrictions
None.

## General Education Program (GEP) Information

### GEP Category
This course does not fulfill a General Education Program category.

### GEP Co-requisites
This course does not fulfill a General Education Program co-requisite.

## Transportation
This course will not require students to provide their own transportation. Non-scheduled class time for field trips or out-of-class activities is NOT required for this class.

## Safety & Risk Assumptions
None.

## Grading

### Grade Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>40</td>
<td>Weekly assignments to be completed in a timely manner. Accommodations will be made for work-related demands.</td>
</tr>
<tr>
<td>Project</td>
<td>30</td>
<td>The project will be due at the beginning of finals.</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30</td>
<td>The final is a comprehensive, take-home exam. The timing will be determined to best fit schedules. Approximately three days will be allowed for completion and submission.</td>
</tr>
</tbody>
</table>
Letter Grades

This Course uses Standard NCSU Letter Grading Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>97</td>
<td>100</td>
</tr>
<tr>
<td>A</td>
<td>93</td>
<td>97</td>
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<tr>
<td>A-</td>
<td>90</td>
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<tr>
<td>B+</td>
<td>87</td>
<td>90</td>
</tr>
<tr>
<td>B</td>
<td>83</td>
<td>87</td>
</tr>
<tr>
<td>B-</td>
<td>80</td>
<td>83</td>
</tr>
<tr>
<td>C+</td>
<td>77</td>
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<td>D+</td>
<td>67</td>
<td>70</td>
</tr>
<tr>
<td>D</td>
<td>63</td>
<td>67</td>
</tr>
<tr>
<td>D-</td>
<td>60</td>
<td>63</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>60</td>
</tr>
</tbody>
</table>

Requirements for Credit-Only (S/U) Grading

Performance in research, seminar and independent study types of courses (6xx and 8xx) is evaluated as either "S" (Satisfactory) or "U" (Unsatisfactory), and these grades are not used in computing the grade point average. For credit only courses (S/U) the requirements necessary to obtain the grade of "S" must be clearly outlined.

Requirements for Auditors (AU)

Information about and requirements for auditing a course can be found at [http://policies.ncsu.edu/regulation/reg-02-15-4](http://policies.ncsu.edu/regulation/reg-02-15-4).

Auditors will be expected to do all of the homework assignments and the final exam with passing scores. Auditors will not be required to complete a semester project.

Policies on Incomplete Grades

If an extended deadline is not authorized by the Graduate School, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) by the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at [http://policies.ncsu.edu/regulation/reg-02-50-3](http://policies.ncsu.edu/regulation/reg-02-50-3). Additional information relative to incomplete grades for graduate students can be found in the Graduate Administrative Handbook in Section 3.18.F at [http://www.fis.ncsu.edu/grad_publicns/handbook/](http://www.fis.ncsu.edu/grad_publicns/handbook/)

Late Assignments

Accommodations will be made for work-related demands that may delay submissions. Late submissions that are not related to work demands or excusable absences may be docked 30% of the maximum score for the
Attendance Policy

Attendance

Attendance is expected.

For complete attendance policies, please see http://policies.ncsu.edu/regulation/reg-02-20-3

Absences

The standard university policy for absences applies.

Makeup Work

Makeup will be permitted only in the case of excusable absence. Arrangements will be made on an individual basis.

Additional Excuses Policy

None.

Academic Integrity

Academic Integrity

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at http://policies.ncsu.edu/policy/pol-11-35-1

None.

Academic Honesty

See http://policies.ncsu.edu/policy/pol-11-35-1 for a detailed explanation of academic honesty.

None.

Honor Pledge

Your signature on any test or assignment indicates "I have neither given nor received unauthorized aid on this test or assignment."

Electronically-Hosted Course Components

Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

Electronically-hosted Components: All submissions will be made electronically through Moodle.
Accommodations for Disabilities

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, student must register with the Disability Services Office (http://www.ncsu.edu/dso), 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at http://policies.ncsu.edu/regulation/reg-02-20-1.

Non-Discrimination Policy

NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at http://policies.ncsu.edu/regulation/reg-04-25-2 or http://www.ncsu.edu/equal_op/. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

Course Schedule

NOTE: The course schedule is subject to change.

Weekly — 01/09/2012 - 05/10/2012

The schedule of topics and assignments is posted on the course web.