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
   Biological and Agricultural Engineering
   [BAEN 661 Experimental Methods in Biological and Agricultural Engineering]

2. Course prefix, number and complete title of course:
   BAEN 661 Experimental Methods in Biological and Agricultural Engineering

3. Course description (not to exceed 50 words):
   Planning and carrying out empirical research with appropriate application of statistical methods for experimental design and analysis; experimental design, data analysis, hypothesis testing, and experimental errors

4. Prerequisite(s):
   STAT 601 or STAT 651 and STAT 652 or equivalent with approval of the instructor

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.

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)

M.S., Ph.D. in BAEN

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. Prefix | Course # | Title (excluding punctuation) |
    BAEN 661 | Experimental Methods in BAEN

    Lect. | Lab | SCL | CLP | Fund Code | Admin. Unit | Acad. Year | FICE Code |
    0 | 3 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 3 | 0 | 1 | 0 | 0 | 6 | 0 | 4 | 3 | 3 | 0 | 9 | 1 | 0 | 0 | 3 | 6 | 3 | 2

    Approval recommended by: [Signature] [Date]
    Head of Department

    [Signature] [Date]
    Head of Department (if cross-listed course)

    [Signature] [Date]
    Submitted to Coordinating Board by:
    [Signature] [Date]
    Associate Director, Curricular Services

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

1 of 5 C4
BAEN 661 – Experimental Methods in Biological and Agricultural Engineering

Spring 2009 Syllabus

Instructor:
Ronald Lacey, P.E., PH.D.
Professor
Office: 302A Scoates Hall,  Office phone: 979-845-3967, email: ron-lacey@tamu.edu
Office Hours: By appointment

Catalog Description:
Planning and carrying out empirical research with appropriate application of statistical methods for experimental design and analysis; experimental design, data analysis, hypothesis testing, and experimental errors

Prerequisite: STAT 601 or STAT 651 and STAT 652 or equivalent with approval of the instructor.

Objectives:
The overall goal of this class is to prepare you to gather quality data in your research and to be able to use those data to draw sound conclusions. When you complete this course, you should be able to do the following:

1. Plan and execute experiments that can support meaningful analysis of the data.
2. Estimate the errors of experimental measurements.
3. Develop experimental plans that are cost effective (i.e. maximum information at minimal cost).
4. Present experimental results in a clear and concise format.
5. Apply statistical methods to draw conclusions for the experimental data.

Textbooks:

Software:
R (http://www.r-project.org/) “R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS.”

Ronald E. Lacey
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9/2/2008
Grading:

Exams (3): 60%
Homework: 20%
Term Paper: 20%

Grading Scale

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<th>Overall Average</th>
<th>Final Grade</th>
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<td>90% and above</td>
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<td>80% to 90%</td>
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<td>less than 60%</td>
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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, this 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 Statements
AGGIE HONOR CODE
"An Aggie does not lie, cheat, or steal or tolerate those who do."

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

For additional information please visit: http://www.tamu.edu/aggiehonor/
### Topics

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**Term Paper Due**
September 22, 2008

TO: Dr. Simon J. Sheather  
Professor and Head, Department of Statistics  
FROM: Dr. Ron Lacey  
Professor  
CC: Dr. Rosana Moreira  
Professor and Chair, Graduate Committee, BAEN  
SUBJECT: BAEN Experimental Methods class

I am developing a new graduate course in Experimental Methods for students in BAEN to replace an outdated class (BAEN 615) that has not been taught for the last several years. The old class was focused on data acquisition hardware, especially computerized systems. However, the advances in technology have made much of this material unnecessary. The new course will have a much stronger emphasis on experimental methodology and on applications of experimental design to problems in the biological and agricultural engineering discipline. As such this new course will have a larger statistical component than the course it is replacing. STAT 601 will be a firm prerequisite for this course. The proposed course is BAEN 661 Experimental Methods in Biological and Agricultural Engineering and drafts of the new course request and syllabus are attached. This course will be recommended for all graduate students in BAEN.

Since this proposed course requires STAT 601 as a prerequisite, I am requesting that you review the course request and sign below if you approve. If you do not approve or have questions or comments, please call me at 845-3967 or email at ron-lacey@tamu.edu. I would appreciate a reply by October 7, 2008.

The Department of Statistics has no objection to the addition of BAEN 661 Experimental Methods for Biological and Agricultural Engineering to the graduate course offerings in the Department of Biological and Agricultural Engineering.

Dr. Simon J. Sheather  
Professor and Head  
Department of Statistics