Description: Foundations of probability and statistics as applied to mechanical measurements and experimentation. Basic statistical analysis of data and assessing likelihood of future events. Concept of random sampling. Uncertainty analysis and error propagation, using both analytical and graphical tools. Assessing dominant sources of error in measurements.

Prerequisites: MAT 126 or 131 or 141 or AMS 151; MEC major or permission of instructor
Co-requisites: MAT 127 or 142 or 171 or AMS 161

Credit earned: 1 credit

Instructor: Prof. Thomas Cubaud
Office hours: Mon. 4:00 - 6:00 pm, 218 Heavy Engineering Building, 2-9431
E-mail: Thomas.cubaud@stonybrook.edu

Time and Location: Thurs. 11:45–12:40pm, Light Engineering building room 102

Teaching Assistant: None

Text: None. A manual will be provided online during the semester.

Assignments: Three homework problems will be assigned.
No late homework will be accepted, except under documented emergencies.

Examination: Two competency exams (details will be given in class)
One final exam.
(There will be no make-up exams unless arranged prior to the exams)

Grading: Final exam: 55%, Homework: 45%

Student Outcomes (SO’s) of this course:
a. The ability to apply knowledge of mathematics, science, and engineering to mechanical engineering problems.
I. The ability to apply the principles of mathematics through multivariate calculus and differential equations

<table>
<thead>
<tr>
<th>Course learning objectives</th>
<th>SOs</th>
<th>Assessment tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure of central tendency and dispersion</td>
<td>a</td>
<td>Competency exam</td>
</tr>
<tr>
<td>Discrete and continuous probability</td>
<td>a</td>
<td>Competency exam</td>
</tr>
<tr>
<td>Error analysis and propagation, linear regression</td>
<td>a, l</td>
<td>Competency exam</td>
</tr>
<tr>
<td>Combinatorial methods</td>
<td>a</td>
<td>Competency exam</td>
</tr>
</tbody>
</table>

It is important to note that in order for you to earn a passing grade in this class, you have to complete and pass the “Competency Exams”. Failure to comply with this requirement will result in a letter grade of “F”. 1
STONY BROOK UNIVERSITY SYLLABUS STATEMENT:
If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Disability Support Services at (631) 632-6748 or http://studentaffairs.stonybrook.edu/dss/. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.
Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: http://www.sunysb.edu/ehs/fire/disabilities.shtml

STUDENT CONDUCT
Stony Brook University expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to observe national, state, and local laws and University regulations; and to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, and/or inhibits students’ ability to learn.

STATEMENT ON ACADEMIC DISHONESTY
Academic dishonesty is an extremely serious offense and will not be tolerated in any form. Academic dishonesty in general is the presentation of intellectual work that is not originally yours. Examples include, but are not limited to, copying or plagiarizing class assignments including homework, reports, designs, computer programs, and other submitted materials; copying or otherwise communicating answers on exams with other students; bringing unapproved aids, either in physical (written) or electronic form to an exam; obtaining copies of an exam prior to its administration, etc. Academic dishonesty violates both the ethical and moral standards of the Engineering profession and all infractions related to academic dishonesty will be prosecuted to the fullest via the CEAS CASA committee. For you, the honest student, academic dishonesty results in lower class curves, hence a depression in your GPA and class standing, while cheapening the degree you earn.

CALCULATOR POLICY
Effective Fall 2008 only the following calculators will be permitted on all midterm and final exams in the Department of Mechanical Engineering. There will be no exceptions! This list of calculators is identical to that allowed for the National Council for Examiners for Engineering and Surveying (NCEES) Fundamentals of Engineering (FE) exam that many of you will take in your senior year, as well as the Professional Engineering (PE) exam that you may take several years from now. The sooner you become comfortable on one of these calculators, the better.

NCEES Allowed calculators as of Fall 2008:

- **Casio:** All fx-115 models. Any Casio calculator must contain fx-115 in its model name.
- **Hewlett Packard:** The HP 33s and HP 35s models, but no others.
- **Texas Instruments:** All TI-30X and TI-36X models. Any Texas Instruments calculator must contain either TI-30X or TI-36X in its model name.

The NCEES policy on calculator can be found here:
http://www.ncees.org/exams/calculators/