

**Stony Brook University**  
**Department of Electrical and Computer Engineering**  
**ESE 440: Engineering Design I**

**Fall 2017**

*Instructor:* **Wendy Tang** , [wendy.tang@stonybrook.edu](mailto:wendy.tang@stonybrook.edu)

*Office Hours:* Tuesdays 12 – 2 pm in Light Engineering 239, (631) 632-8404  
Thursdays 12 – 2 pm in Admin 407, (631) 632-7012;  
or by appointment via e-mail [wendy.tang@stonybrook.edu](mailto:wendy.tang@stonybrook.edu)

*Class Meeting:* Tuesdays, 2:30-3:25 pm in Harriman Hall 137

**Course Syllabus**

**Version: Aug 28, 2017**

**Course Components:** There are two components of this course, a project component and a lecture series component.

For the project component, students are organized into small teams, each of which completes a design project under the supervision of an *Electrical and Computer Engineering faculty member*. The project lasts for the entire academic year, however, separate grades are earned for each semester. Two written project reports must be submitted by each team. One for the first semester (ESE 440) is an Interim Technical Report on the project. A *Final Report* on the project must be submitted for the second semester (ESE 441). Both reports must follow the ESE 440/441 report guidelines (available under “Course Document”). Descriptions of projects are available under “Course Document”. Students majoring in Computer Engineering are encouraged to take a computer engineering project or a multidisciplinary project with a computer engineering component. Students in Electrical Engineering are advised to take a project appropriate for their corresponding tracks or a multidisciplinary project that requires their expertise.

In the lecture series component, various topics relating to engineering design, current technology, professional issues and career choices are presented by faculty and outside guest lecturers. Attendance at scheduled lectures is required. Student presentations are also part of the lecture series.

**Grading Policy :** For students completing all requirements (attendance, written report for ESE 440; attendance, written report, oral presentation and a poster for ESE 441), the course grade is the project grade which will be assigned by the Project Advisor. For students with missing lectures, the final grade will be penalized according to the following table. Any student missed more than 6 lectures will get an F grade for the course automatically, regardless of performance in the project component.

NUMBER OF LECTURES MISSED, N	FINAL GRADE
N > 6	F (Fail)
N = 5, 6	Two grade levels below project grade
N = 3, 4	one grade level below project grade
N <= 2	project grade

**Project Selection:** Descriptions of projects available during the current academic year will be posted on blackboard under “Course Document”. Students should identify those projects of interest to them and

discuss the project and requirements in more detail with the supervising faculty. Students in the CE program are advised to choose a CE project or assume the CE component of a multi-disciplinary project. Students in the EE program are advised to choose a project according to the track of studies (General, Microelectronics or Telecommunications) or participate in a multidisciplinary project with a significant component on their expertise. Students are urged to make arrangements with an advisor as soon as possible, because projects and faculty advisors of particular interest may get completely booked. Students should sign up for a project by **Tuesday, September 26, 2017**. Students who do not have a commitment from an advisor by that date will be assigned to a project by a RANDOM PLACEMENT.

**Once you have signed up for project with an advisor, please fill out the Project Selection page and e-mail to [wendy.tang@stonbyrook.edu](mailto:wendy.tang@stonbyrook.edu) with Subject title: ESE 440 Project Selection by**

**Tuesday, 9/26/2017.**

If a student wishes to pursue his/her own project in lieu of one that is posted, it is necessary to propose this to an *Electrical and Computer Engineering Faculty Member* and obtain his/her CONSENT to serve as the faculty advisor. For students who want to work with particular partners, it would be best for all students in the group to meet with the advisor at the same time. Advisors can also assemble groups from individual students who select a project.

**Meetings with Advisor :** Periodic meetings of each project team with the faculty advisor are generally important. These meetings should be arranged by the individual advisors and teams.

**Reports:** Submission of a final report for ESE440 and another for ESE441 is required. Towards the end of each semester, each group will have to submit a report to the group's project advisor on the date specified by the advisor (but in NO CASE later than the last day of classes). Students should follow the format specified by the report guidelines (available under Course Document).

**Laboratory Space:** It is generally best to work in a laboratory assigned to the faculty advisor. Groups who need laboratory space to work on their projects can use Rm 283 B in Light Engineering.

**Project Expenses and Course Fees :** Students can be reimbursed for project expenses for up to \$115 per student per academic year. A project team consisting of four students has a project budget of 4 times \$115 = \$460 for the academic year. Upon obtaining an approval from their advisor on what items to purchase, students should purchase these items directly and save all receipts. These receipts can then be submitted for reimbursement to Mrs. Catheryn Mooney at Rm 267, Light Engineering. However, sales tax on purchased items *cannot* be reimbursed. Again, each student can be reimbursed for up to \$115 per academic year.

**Additional Opportunities** IEEE LISAT conference (call for paper will be posed under Course Document); URECA competition (College-wide competition, more details to follow), DARE competition (University-wide business plan competition, work with MBA students to develop a business plan, etc).

**Learning Outcomes and Objectives: Students are expected to gain:**

- a) an ability to apply knowledge of mathematics, science, and engineering;
- b) an ability to design and conduct experiments, as well as to analyze and interpret data;
- c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;

- d) an ability to function on multi-disciplinary teams;
- e) an ability to identify, formulate, and solve engineering problems;
- f) an understanding of professional and ethical responsibility;
- g) an ability to communicate effectively;
- h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- i) a recognition of the need for ability to engage in life-long learning;
- j) a knowledge of contemporary issues; and
- k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

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### **DISABILITY SUPPORT SERVICES (DSS) STATEMENT**

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room128, (631) 632-6748. They will determine with you what accommodations, if any, 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.stonybrook.edu/ehs/fire/disabilities>

### **ACADEMIC INTEGRITY STATEMENT**

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at [http://www.stonybrook.edu/commcms/academic\\_integrity/index.html](http://www.stonybrook.edu/commcms/academic_integrity/index.html)

### **CRITICAL INCIDENT MANAGEMENT**

Stony Brook University expects students 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, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.