

TECHNOLOGY 478 – Engineering Technology Senior Design Project II

2007-08 Catalog Data: Tech 478 Engineering Technology Senior Design Project – II (3 Credits)

Catalog Description: Design of an electronic/mechanical project to demonstrate the student’s comprehension of electronic/mechanical fundamentals and design procedures. Individual or team design projects conducted under the direct supervision of the instructor.

Prerequisites: TECH 477

Co-requisites: None

Textbook:

COURSE OBJECTIVES

CLASS OBJECTIVES (with embedded relationships to NAIT and ABET Learning Outcomes)

You will get out of this course only what you are willing to put into it! When you finish this semester, you should gain the following:

Ability to apply laboratory skills to an open ended design project and selection and purchase of components	A. An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines. B. An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology. C. An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes. D. An ability to apply creativity in the design of systems, components or processes appropriate to program objectives. F. An ability to identify, analyze and solve technical problems. N. An ability to use modern laboratory techniques, skills, and/or equipment effectively.	Project write-ups, meetings with instructor and project coordinators, oral presentations
Understanding of research in project development and component determination	A. An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines. I. A recognition of the need for, and an ability to engage in lifelong learning. J. An ability to understand professional, ethical and social responsibilities. K. A respect for diversity and a knowledge of contemporary professional, societal and global issues.	Project write-ups, meetings with instructor and project coordinators, presentations

COURSE EXPECTATIONS, REQUIREMENTS, AND POLICIES

OVERALL DESCRIPTION

This is an advanced, open-ended, senior-level projects course where you will be working in teams to design and construct electronic and/or mechanical project in order to demonstrate your comprehension of all the electronic and/or mechanical fundamentals that you have learned throughout your tenure at NIU. This course is designed to allow you to familiarize yourself with the general aspects of the engineering and technological environment in which you will be working after graduation, and includes researching, designing, analyzing, constructing, testing, and interfacing with

systems or products. Additionally, this course will emphasize communications in the engineering environment, and will involve several written and oral reports. The culmination of this course is the completion of your design project.

EXPECTATIONS

It is expected that you will attend class, and will be prepared for discussions and possible pop quizzes. You will be working as part of a design team, and as such you will be required to put in much time on the various phases of the project. Each team member will be required to provide input into the process and development of the project. You will get out of it only what you put into it! For my part, I will try to enhance your educational experience at NIU, and will also try to return graded materials to you in a timely manner.

REQUIREMENTS

You are required to have access to a personal computer. You will make use of AutoCAD, Solid Works, PLCs, MS Excel, MS Word, and MS PowerPoint (among other programs) in the preparation of assignments and projects. If you need assistance in using any of these software packages, please contact me. Unless specified otherwise, assignments must be typed, and handwritten work will not be accepted. Neat work is expected on all material submitted for grading.

Additionally, you will need to have an NIU email address/account (Z-ID), so that you can access all class materials. You will also be required to check the email account regularly for course information.

GRADING POLICY

All assigned homework problems and projects must be turned in, and must be submitted by the due date specified on each assignment, unless prior arrangements have been made with the instructor. If prior arrangements have not been made, **LATE WORK WILL NOT BE ACCEPTED.**

No incomplete grades will be given for the course, except in the case of medical emergencies, which must be documented by a physician's statement.

No grades are automatic...you will have to work for them! Points will be earned through assignments, quizzes, examinations, projects, presentations, etc. A letter grade will then be assigned depending on the total points you have earned by the end of the semester. Course grades will be determined on the (approximate) following basis:

ASSIGNMENT	POINTS
Written Report - Final	40
Oral Presentation - Final	20
Team Input	10
Consultant/Advisor Input	30
TOTAL	100

NOTE (IMPORTANT) – in order to receive any grade in this class, the team must demonstrate the working project to both the course instructor and the project advisor

-- Please note that – the written reports will be scored equally for all group members, all other scoring will be based upon individuals in the group – and not the group as a whole -

Final grades will then be assigned as follows:

Grade	Percent Range (%)	General Grading Definitions
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A	90-100	Takes an active interest in the course, consistently submits work of high quality
B	80-89	Participates actively in many course activities, consistently submits work of good quality
C	70-79	Limited involvement in course activities, usually submits work of average quality
D	60-69	Definite lack of participation in many course activities, generally submits work of below average quality
F	Below 60	Little or no participation in course activities, typically submits work of unacceptable quality

FACULTY ADVISORS

All design teams will be assigned a faculty advisor for the given project. It is expected that each team will meet with their advisor at least twice per month. Each team must keep a log of all meetings with the items that were discussed. Failure to meet will have implications on the advisors portion of the final grade.

EXTRA CREDIT POLICY

No extra credit will be offered in this course. So you will have to work hard to earn your grades!

ATTENDANCE POLICY

Attending class is vital to the learning process, and therefore will be required in this course. Attendance will be recorded each lecture via roll call. (In other words, don't miss class!) It will be expected that all students will be in class at the correct time – if not early!

CLASSROOM DISRUPTION POLICY

Higher education is a privilege. Students at NIU are assumed to have the maturity to function appropriately in a variety of instructional situations. Therefore, when class is in session, turn **OFF** all cell phones, pagers, headphones, etc, and refrain from any behavior that would be considered distracting to your classmates or your instructor. If you cannot abide by these rules, you will be asked to leave, and will not be counted when attendance is taken for that session.

ACADEMIC HONESTY & INTEGRITY POLICY

Academic honesty and integrity is an important aspect of learning in colleges and universities, thus a portion of NIU's policy statement on academic integrity is cited below.

Good academic work must be based on honesty. The attempt of any student to present as his or her own work that which he or she has not produced is regarded by the faculty and administration as a serious offense. Students are considered to have cheated if they copy the work of another during an examination or turn in a paper or an assignment written, in whole or in part, by someone else. Students are guilty of plagiarism, intentional or not, if they copy material from books, magazines, or other courses without identifying and acknowledging those sources or if they paraphrase ideas from such sources without acknowledging them. Students guilty of, or assisting others in, either cheating or plagiarism on an assignment, quiz, or examination may receive a grade of F for the course involved and may be suspended or dismissed from the university.

For a complete policy statement on Academic Integrity, please see the *NIU Undergraduate Catalog*.

If you cheat in this class, consequences could range from failure on a particular assignment to failure for the entire class.

COURSE FLEXIBILITY

Due to unforeseen circumstances, the schedule and outline of topics and assignments is tentative, and may therefore need to be adjusted. All topics on the agenda, however, will be covered during the course of the semester.

DIVERSITY

Students at NIU are assumed to have the maturity to function appropriately in a variety of instructional situations, and to be sensitive to each other's uniqueness. Therefore, everyone's perspective and point of view will be respected in this class.

RECEIVING ASSISTANCE

GETTING HELP

If anyone has any questions regarding the course, course expectations, requirements, policies, schedules, assignments, software, etc., please contact me for clarification. Also, anytime during the semester, if you need help with course content, homework, or teamwork issues, please contact me right away. Remember, my job is to help you learn!

ADDITIONAL ACCOMMODATIONS

If you have any special circumstances that require accommodations, please contact me as soon as possible.

FINAL NOTES

Each design team will need to develop their own meeting and work schedules which will permit the timely execution and completion of your projects. Also, you will be responsible for scheduling meeting times with your consultants (faculty advisors). Remember that the total number of hours spent on your project is not a concern in grading: what matters is the completion of your project! Several rooms and laboratory areas will be available for you to conduct your work. These include Still Gym 115, Still Hall 201. Each group can request one key from the department's main office (Still Gym 203). Keys must be returned to the office and signed in before a grade will be issued to your group. If any problems arise in this room, all privileges will be lost. Also, at the end of the course, prior to receiving a grade, your workspace must be completely cleaned.

Also, the instructor reserves the right to alter the course content, syllabus, assignments, grading policy, etc., as necessary at any time during the semester if it is deemed appropriate and/or necessary.
