

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA

ETE 401

COURSE OUTLINE

Course Information	ABET Unit Classification (4 Quarter Units)
Department: Engineering Technology Course Number: ETE 401 Course Title: Technical Communication and Project Management Revision Date: 12/12/2004 Revised by: Lyle B. McCurdy Compliant: Catalog 2004/05	Math: Basic Science: Engineering Topics: 4 <i>Contains significant design content:</i> (Yes/No) Other: Curriculum Designation: Required

I. Catalog Description

ETE 401/401L Technical Communications and Project Management for ET/Lab (3/1)

Writing and interpreting engineering information related to the electronics -- research papers, technical and senior project proposals, engineering specifications, oral reports; project management techniques and use of project management software. Computer methods utilized. 3 lectures/problem solving and 1 three-hour laboratory. Prerequisites: Satisfaction of GWT, ETE 272, 305, 310, 344.

II. Prerequisites and Corequisites

Completion of GWT or concurrent participation in GWT preparatory workshops at the University's Learning Resource Center; working background in building electronic projects with printed circuit boards; active devices including BJT and FET transistors; network analysis including second order systems, bode plots, and Laplace transforms; and applications of microprocessors.

III. Textbook and/or other Required Material

Text: Houp, et.al. Reporting Technical Information 10/e, Oxford Press, 2002, ISBN 0-19-514612-3, or equiv.
 Lab Text: Chatfield, et.al., Microsoft Project 2000 Step by Step, Microsoft Press, 2000, ISBN 0-7356-0920-9, or equiv.
 References: Chicago Manual of Style, The, 14th Ed., University of Chicago Press, 1993, or equiv.
 Course Notes: Instructor notes -- ASK Copy & Printing, 3530 Temple Ave., Pomona, CA, Tel (909) 594-9490

IV. Course Objectives

After completing this course the student will be able to:

1. Communicate technical information to others in professionally-oriented written and oral form, including formal engineering library research reports, informational reports, technical instructions, progress reports, laboratory reports, technical letters, and resumes, etc.
2. Develop a suitable senior project and write a senior project proposal to professional specifications.
3. Utilize basic project management techniques and software tools to control technical projects, including team leadership and assessment of others.
4. Utilize the "soft-skills" related to engineering, including life-long learning (TAC h); professional responsibility (TAC i1); ethical responsibility (TAC i2); social responsibility (TAC i3); contemporary issues (TAC j1); contemporary societal issues (TAC j2); contemporary global issues (TAC j3); respect for diversity (TAC j4); quality assurance (TAC k1); and (TAC k2).

V. Expanded Course Description

1. **Introduction to technical writing** (2 weeks)
 Writing technical reports -- numbers, equations, graphical elements. Formal technical library research reports -- topic selection; gathering information; use of the library; format, content, and structure; definitions. Other technical reports -- descriptive and informational reports; technical descriptions; formal and non-formal lab reports;

feasibility reports; technical instructions, performance-reviews; engineering specifications; technical letters; cover letters and resumes.

2. Introduction to Senior Project and Writing a Senior Project Proposal (2 weeks)
Overview of Senior Project process and grading. Writing senior project mini- and full-senior project proposals.

3. Introduction to Project Management -- Team Building and Software Tools (3 weeks)
The engineering team, team processes, engineering method, design reviews. Project management -- planning, quality, time, budget, closure, and evaluation; CPM, Gantt charts, Pert diagrams, budget tables; use of MS Project 2K software; assessment techniques.

4. Engineering "Soft Skills (TAC/ABET criteria h through k)" (3 weeks)
Students will research and write about each of the following engineering soft skills: Appreciation of and need for life-long learning (TAC h). Appreciation of and need for professional responsibility (TAC i1). Appreciation of and need for sound ethical responsibility (TAC i2). Appreciation of and need for sound social responsibility (TAC i3). Appreciation and grasp of contemporary issues (TAC j1). Appreciation and grasp of contemporary societal issues (TAC j2). Appreciation and grasp of contemporary global issues (TAC j3). Appreciation of and respect for diversity (TAC j4). Appreciation of and commitment to quality assurance (TAC k1). Appreciation of and commitment to timeliness (TAC k2).

VI. Class/Laboratory Schedule

Three sessions per week: two 75-minute lectures and problem discussions; one three-hour laboratory.

VII. Contribution of Course to Professional Component

Students learn to write effective technical reports to a professional level and how to present them orally, including formal technical library research reports, senior project proposals. They will learn about the importance of the soft skills related to the engineering field and how to infuse these ideas into their behavior. They will also learn project management fundamentals and how to use project management software tools for their projects.

VIII. Evaluation of Students

The instructor evaluates outcomes using the following methods:

- Homework assignment submittals
- Examinations
- One-on-one discussions during office hours

Student grades are typically based on the following factors -- quizzes, class projects, homework, midterm exams, literature and Internet projects, final exam.

IX. Relationship of Course Objectives to Program Outcomes

Crse Obj	Program Outcomes										
	(a) Use of modern tools of discipl	(b) Use of math, science, Engg & Tech	(c) Do experi-ments	(d) Dsn of sys & compo nents	(e) Work on teams	(f) Do Tech probs	(g) Eff Com	(h) Life-long learn	(i) Prof, ethics, social resps	(j) Prof, soc, globl, diversity	(k) Qual, Cont impr, timeli ness
1							X				
2							X				
3	X				X	X					
4								X	X	X	X

X. Typical Laboratory Experiments. Here, the students are expected to learn how to use MS Project 2000 or equivalent. The use of the Lab Textbook is required. The following labs are oriented to achieve this purpose:

Lab 0. MS Project -- Introduction. Run the MS Project 2K training video program on the Project CD to garner an overview of MS Project.

Lab 1. MS Project -- Music Video Project (Part 1). Work with MS Project 2K or equivalent, including creation of task names and duration in the Gantt Chart view, linking the tasks; entering resource names and maximum units; assigning resources to tasks, specifying the unit values for each assignment; and zooming the Gantt chart on the PC screen.

Lab 2. MS Project -- Music Video Project (Part 2). Continued -- changing working times for the entire project and for individual resources; entering standard and overtime pay rates for resources; entering and/or changing task details such as deadline dates, lead time, duration, and task relationships; and identifying and correcting resource over-allocations.

Lab 3. MS Project -- Music Video Project (Part 3). Continued -- sort and filter data; view and customize a report, save Microsoft Project data to another file format; draw a text box on a Gantt Chart, copy the Gantt Chart view to the Clipboard; and insert a Microsoft Project file into a consolidated file.

Lab 4. MS Project -- Music Video Project (Part 3). Continued -- record actual work, percent complete, and actual start dates for tasks; compare baseline, scheduled, and actual plans; view a project summary report; and change the scope of work to reduce overall project cost.

Lab 5. MS Project -- ABC Company Remodeling Project. Gain additional familiarity in using the MS Project 2K software tool. Here, MS Project will be utilized to convert a remodeling project PERT chart and related information into an equivalent MS Project proposal and report.