COURSE INFORMATION FORM

DISCIPLINE  ETEC
COURSE TITLE  Build Project
CR.HR  3  LECT HR.  1  LAB HR.  4  CLIN/INTERN HR.  CLOCK HR.

CATALOG DESCRIPTION
An engineering technology research course in which students work in teams to research, design and construct a solution to an open-ended engineering problem. Students apply principles developed in the four preceding courses.

PREREQUISITES
ETEC 220 or 230

EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)
Upon completion of this course, the student will be able to:
1. Describe the purpose, rationale, distinguishing characteristics of this course, and examples of successful project completion.
2. Create a resume and portfolio that demonstrate academic achievements, activities, and accomplishments (past and current).
3. Design and maintain a well-organized daily research journal.
4. Select and use appropriate library resources to obtain desired information.
5. Demonstrate computer skills and strategies to find specific information and communicate with others.
6. Apply written and verbal communication skills (e.g., courtesy, professionalism, listening, speaking, and personal hygiene).
7. Develop a concise problem statement for a research topic and explain key issues using appropriate terminology.
8. Develop and justify alternate solutions to a research problem.
9. Demonstrate appropriate presentation skills for engineering design and development topics (e.g., teamwork, voice techniques, written and visual aids, preparation, audience recognition, and multimedia applications).
10. Complete an independent research project.
11. Safely develop and analyze a testable prototype.
12. Compose a technical research paper.
GENERAL EDUCATION OUTCOMES (ESO)
Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.

1.
PROGRAM-LEVEL OUTCOMES

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES
Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

1.

CLASS-LEVEL ASSESSMENT MEASURES
Student accomplishment of expected student outcomes will be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

I. Introduction Engineering Design and Development (1,7)
II. Elements of Formal Research (3,4,5,6)
III. Guided Research (2,7,8,9)
IV. Independent Research (3,5,6,10,11,12)
V. Formal Presentation (9)
Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Introduction Engineering Design and Development
   A. Justification of Course/Project
   B. Course Expectations

II. Elements of Formal Research
   A. Daily Research Journal
   B. Conventional Library Resources
   C. Using the Computer as a Research Tool
   D. Contacting the Experts

III. Guided Research
   A. Topics for Research
   B. Gaining the Knowledge
   C. How to Write a Problem Statement
   D. Researching Alternative Solutions
   E. Developing Alternative Solutions
   F. Redefining and Justifying the Alternative Solutions
   G. Presentation Methods

IV. Independent Research
   A. Expectations for Independent Research
   B. Developing the Prototype
   C. Research Paper

V. Formal Presentation