

GE184

Problem Solving

[Onsite]

Course Description:

This course introduces students to problem solving techniques and helps them apply the tools of critical reading, analytical thinking and mathematics to help solve problems in practical applications.

Prerequisite(s) and/or Corequisite(s):

None.

Credit hours: 4

Contact hours: 40 (40 Theory Hours)

instructor

office hours

class hours

I. MAJOR TOPICS

Problem solving strategies

Critical reading

Analytical thinking

Numeric, symbolic and graphic reasoning

Solving applications problems

II. COURSE OBJECTIVES

1. Execute problem solving actions appropriate to completing a variety of case study assignments.
2. Apply critical reading to identify the meaning of information in a problem statement.
3. Apply analytical and logical thinking to extract facts from a problem description and determine how they relate to one another and to the problem(s) to be solved.
4. Provide symbolic, verbal, and graphic interpretations of statements in a problem description.

5. Discuss different ways to solve a problem and choose which one(s) to implement.
6. Execute the mathematical operations required to solve a variety of problems, properly handling units of measurement.
7. Interpret answers obtained from mathematical operations and determine which, if any, are correct solutions.
8. After determining the solution(s) to a problem, evaluate the methodology followed with regard to effectiveness and efficiency.
9. Work in team environments.

III. STUDENT TEXT and SUPPLIES

Saltzer, Brian, et.al. Strategies for Problem Solving, 3rd ed., Pearson Custom, 2004.

Martin-Gay, K. Elayn, *et.al.* Tools for Problem Solving, CD, Pearson Custom, 2001.

Access to system virtual library at <http://library.itt-tech.edu>

IV. EVALUATION

Most of the evaluation in this course will be based upon grading student work on the “Thought Projects”. There will be homework (Outside Assignments) to support improvement of skills exercised in the projects, and student work on computer applications support the development of math tools to support successful completion of the projects. The projects are progressive in nature, and hence this course will not have a mid-term or final “exam”.

Grade category weights:

75%	The 30 Thought Projects
10%	Outside Assignments (problems, reading assignments, optional software labs, etc.)
5%	Final Project
10%	Mid-term Interview

Final grades will be calculated from the percentages earned in class as follows:

A	90 - 100%	4.0
B+	85 - 89%	3.5
B	80 - 84%	3.0
C+	75 - 79%	2.5
C	70 - 74%	2.0
D+	65 - 69%	1.5
D	60 - 64%	1.0
F	<60%	0.0

V. REFERENCES and RESOURCES

Student Resources:

Prentice Hall Companion Website: <http://www.prenhall.com/martin-gay>

<http://library.itt-tech.edu>. Login to the Virtual Library to access online books, journals, and other reference resources selected to support ITT Tech curricula.

MultiSim, Educational version, Electronics Workbench. Electronic circuit simulation software. [MultiSim 2001, education version]

AutoCAD™, Autodesk. Technical drawing software.

Microsoft Office