

North Central Michigan College

NCMC MASTER COURSE SYLLABUS

Last Date Revised: 2/7/2008

DIVISION/AREA: Engineering

DEPARTMENT: Occupational

ASSOCIATE DEAN: Pete Olson, Ph.D.

ORIGINATOR: Robert J. Marsh

DEAN OF INSTRUCTION: Christine M. Hammond

HOURS OF INSTRUCTION: 3

Credit hours: 3

Lecture: 3

Lab: 0

Contact hours: 52.8

COURSE TITLE: Introduction to Engineering

COURSE ALPHA: ENGR COURSE NUMBER: 101

CATALOG DESCRIPTION:

An introduction to the engineering profession and the engineering problem solving method. Topics will include an overview of the main engineering disciplines, mathematical tools to solve engineering problems, quality control, data analysis, graphical representation and engineering economics. Also included will be a discussion of the four-year engineering programs at various colleges and universities. Students with an interest in pursuing engineering may wish to take this course as a first step in their career. Prerequisite: MATH 120 or equivalent.

PREREQUISITE(S): MATH 112 or MATH 120 or higher

COREQUISITE(S):

GENERAL EDUCATION DISTRIBUTION AREA:

(example: Social Science Group B)

GENERAL EDUCATION/PROGRAM OUTCOMES:

Think critically and analytically

COURSE OBJECTIVES AND OUTCOMES:

At the conclusion of this course the student will have an understanding of the following:

- Types of engineering careers
- Introductory engineering concepts in various fields
- The engineering design problem solving method
- Engineering quality control
- Technical representation and dimensioning

- Application of mathematical problem solving tools to practical engineering problems

METHODS OF INSTRUCTION: Lecture, in –class activities, guest speakers, possible field trips, homework and project assignments.

METHODS OF EVALUATION: Quizzes, exams, in-class exercises, projects, presentations, participation.

REQUIRED TEXT AT TIME OF COURSE ADOPTION/REVISION:

TEXTS: (Tentative) *Introduction to Engineering Design and Problem Solving, 2nd ed.* Eide and Johnson., McGraw-Hill, ISBN: 978-0-07-240221-6

Reasonable accommodations can be provided to students with documented disabilities. Please contact Learning Support Services at 348-6817 to arrange these.

TENTATIVE SUGGESTED TIME ALLOWANCE AND SEQUENCE OF INSTRUCTION: (*List general content description of what is being covered each week*)

WEEK 1	Introduction to the engineering profession Discussion of various types of career options and fields
WEEK 2	Math and problem solving review
WEEK 3	Math and problem solving review- assignments Introduction to the engineering problem solving process
WEEK 4	Engineering problem solving process
WEEK 5	Design of engineering experiments
WEEK 6	Engineering experiments (cont'd)
WEEK 7	Introduction to probability and statistics
WEEK 8	Exam I
WEEK 9	Introduction to engineering quality control
WEEK 10	Statistical process control
WEEK 11	SPC, cont'd
WEEK 12	Engineering drawings
WEEK 13	Graphical representation of data
WEEK 14	Graphical representation of data
WEEK 15	Engineering economics University engineering programs
WEEK 16	Final exam and/or presentations

APPROVED FOR ADOPTION/REVISION BY THE CRD/AP COMMITTEE ON 03/21/12