

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE: APPLIED MECHANICS (STATICS)

CODE NO.: MCH 100-3

PROGRAM: Civil Engineering Technology

SEMESTER: One

DATE: August 1988

AUTHOR: G. DISANO

NEW: _____ REVISION: X

APPROVED: *L. Croft*
Chairperson

88/08/29
Date

APPLIED MECHANICS (STATICS)

Course Name

MCH 100-3

Course Number

PHILOSOPHY/GOALS: The objective of this course is to introduce the student to a number of fundamental concepts of statics which should prove useful to the civil engineering student. Every effort will be made not to dwell on the theory of these concepts but to instead stress practical applications through the extensive use of problem solving.

METHOD OF ASSESSMENT (GRADING METHOD):

See attached sheet: GRADE REQUIREMENTS

TEXTBOOK(S): INTRODUCTION TO MECHANICS
by Irving J. Levinson

OBJECTIVES:

GRADE REQUIREMENTS

MCH100

APPLIED MECHANICS (STATICS)

(Civil Engineering Technology)

Your final grade in MCH100 will be determined on the basis of four tests to be **administered** during the semester. Each test will examine your knowledge of a number of topics and will be administered within a week of completing those topics. The topics covered in each of the four tests are as follows:

Test #1 ---- Topic Number I
 Topic Number II

Test #2 ---- Topic Number III
 Topic Number IV

Test #3 ---- Topic Number V

Test #4 ---- Topic Number VI
 Topic Number VII

The four tests are of equal weight (i.e. each of the four tests is worth 25% of your final grade). As a result, provided you have received a passing grade on each of the unit tests, your final grade will simply be an average of your four test results. In order to obtain your letter grade the following percentage-letter grade equivalents will be used:

A⁺ : 90% - 100% (Consistently outstanding achievement)

A : 76% - 89% (Outstanding achievement)

B : 66% - 75% (Consistently above average achievement)

C : 55% - 65% (Satisfactory or acceptable achievement)

X or R : 0% - 54% (Incomplete or Repeat)

If your final average is below 55%, or if you have received a failing grade in one or more of the unit tests, whether you receive an 'X' (Incomplete) or an 'R' (Repeat) grade is entirely at the instructor's discretion. The decision will be based upon your final average (i.e. 32% would result in an R grade while 50% might result in an X grade); your attendance during the semester; your attitude while in the classroom; your perceived level of effort during the semester; etc.. In any case, should you find yourself with an X grade at the end of the semester, in order to upgrade your mark to a passing grade you will be required to write a make-up examination covering the entire course content. Should you receive a passing grade on the make-up examination (55% or higher) your X grade will be upgraded. The best you can do after having received an X grade as a result of a failing average is a C! If you were required to write the make-up examination as a result of having failed one test you may substitute the exam result for this test result.

Prior to administering any test you will be notified a full week in advance. Should you, for any reason, not be able to be in attendance on a day for which a test has been scheduled it is your responsibility to notify the instructor prior to the test! If your reasons are acceptable, a date will be set during which you may write a substitute test for the one you have missed.

G. Disano, August 1988

COURSE OUTLINE

MCH100

APPLIED MECHANICS (STATICS)

(Civil Engineering Technology)

Suggested Text: INTRODUCTION TO MECHANICS
by Irving J. Levinson

TOPIC NO.	PERIODS	TOPIC DESCRIPTION	REFERENCE
I		<u>Introduction</u> - discussion of course outline, general objectives, evaluation methods, attendance requirements - definitions of 'statics' and 'dynamics' - 'right' triangles - the six trigonometric functions - the theorem of Pythagoras - the cosine law - the sine law - the conversion of units	Chapter 1
II		<u>Force Systems</u> - forces - 'scalar' and 'vector' quantities - addition of vectors - subtraction of vectors - the 'resultant' of a system of forces - the 'components' of a force - the 'moment' of a force about a point - 'couples' - beam reactions	Chapter 2
III		<u>Centre of Gravity</u> - determination of the 'centre of gravity' - 'centroids' - centroids and centres of gravity of two-dimensional figures and three-dimensional solids	Chapter 3
IV		<u>Equilibrium of Two-Dimensional Systems</u> - 'collinear' force systems - 'concurrent' force systems - 'parallel' force systems	Chapter 4

continued

V	<u>Force Analysis of Structures</u>	Chapter 5
	<ul style="list-style-type: none">- simple trusses- tension and compression members- members that carry no load- analysis of trusses- analysis of frames	
VI	<u>Fluid Statics</u>	Chapter 8
	<ul style="list-style-type: none">- solids, liquids and gases- liquid pressure- forces on a submerged surface- transmission of fluid pressure- Pascal's law- buoyancy - Archimedes' principle	
VII	<u>Friction</u>	Chapter 6
	<ul style="list-style-type: none">- the laws of friction- coefficients of static and kinetic friction- problems involving simple machines: wedges, screw threads, belts, disk friction	

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