THE SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY
SAULT STE. MARIE, ON

COURSE OUTLINE

Course Title: Applied Resource Calculations II

Code No.: MTH1270-2   **Semester:** Winter

Program: Forestry Technician / Fish and Wildlife Technician

Author: The Mathematics Department

Date: August 2002   **Previous Outline Dated:** August 2001

Approved: _____   _____
                          Dean   Date

Total Credits: 2   **Prerequisite(s):** Mth 107-3
Substitutes: Mth 119, Mth 142, Mth 220, Mth 221
Total Credit Hours: 32

Applied Resource Calculations II   MTH1270-2
COURSE NAME   **CODE NO.**

I.   COURSE DESCRIPTION:

When the student has successfully completed this course, he/she will have demonstrated an acceptable ability to pass tests based upon the course contents as listed elsewhere. If, after completing the course, the student takes further courses (or employment) in which he/she is required to apply this material, he/she should then, through practice, be able to develop a good command of this subject matter.

II.   LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

A.   Learning Outcomes and Elements of the Performance:

The basic objectives are that the student develop an understanding of the methods studied, a knowledge of the facts presented and an ability to use these in the solution of problems. To accomplish these objectives, exercises are assigned. Tests questions will reflect the sort of work contained in the assignments. The level of competency demanded is the level required to obtain an overall passing average on the tests. The material to be covered is listed on the following pages.

III.   TOPICS: Approximate Time Frame

1	Fractional equations and formulae	8 hours
2	Algebraic and graphical solution of systems of equations	8 hours
3	Trigonometry	9 hours
4	Exponents, powers and roots	4 hours
5	Logarithms	3 hours

IV.   REQUIRED RESOURCES:

1. <u>Foundations of Technical Mathematics</u> (Canadian Ed.), by Calter, P., Rogers, C. F., and Giguere, J.

2. Calculator: (Recommended) SHARP Scientific Calculator EL-531. *The use of some kinds of calculators may be restricted during tests.*

Applied Resource Calculations II   MTH1270-2
COURSE NAME   **CODE NO.**

V.   LEARNING ACTIVITIES:

TOPIC NUMBER	TOPIC DESCRIPTION	REFERENCE CHAPTER ASSIGNMENTS
1.0	**ALGEBRAIC FRACTIONS**	
1.1	Equivalent fractions	Ex. 17-1, pp. 366-367
1.2	Multiplication and division of fractions	Ex. 17-2, pp. 370-372
1.3	Addition and subtraction of fractions	Ex. 17-3, pp. 378-379
1.4	Solving fractional equations	Ex. 18-1, p. 389
1.5	Literal equations and formulae	Ex. 18-2, p. 392
1.6	Applications	Ex. 18-3, pp. 397-398
1.7	Review exercises	pp. 398-399
2.0	**ALGEBRAIC AND GRAPHICAL SOLUTION OF SYSTEMS OF EQUATIONS**	
2.1	Solving systems of equations by graphing	Ex. 19-1, pp. 407-409
2.2	Solving systems of equations by addition	Ex. 19-2, pp. 412-413
2.3	Solving systems of equations by substitution	Ex. 19-3, p. 415-416
2.4	Solving word problems by using systems of equations in two unknowns	Ex. 19-4, pp. 420-422
2.5	Review exercises	pp. 436-437
3.0	**TRIGONOMETRY**	
3.1	Sine, cosine and tangent functions	Ex. 15-1, p. 308
3.2	Inverse trigonometric functions	Ex. 15-2, p. 311
3.3	Solve right triangles	Ex. 15-3, pp. 317-318
3.4	Solve word problems by using trigonometry	Ex. 15-4, pp. 321-325
3.5	Find the functions of angles of any size	Ex. 22-1, pp. 510-511
3.6	Find an angle from a given function value	Ex. 22-2, p. 517
3.7	The Sine Law	Ex. 22-3, pp. 522-523
3.8	The Cosine Law	Ex. 22-5, pp. 530-531
3.9	Review exercises	pp. 329-330, 532-533
4.0	**EXPONENTS, POWERS AND ROOTS**	
4.1	Laws of Exponents	Ex. 7-3, pp. 145-146
4.2	Roots of numbers Fractional exponents	Ex. 20-1, pp. 443-444
4.3	Scientific notation	Ex. 6-7, pp. 126-127
5.0	**Logarithms**	
5.1	Common and natural logarithms	Ex. 28-2, pp. 654-655
5.2	Applications of logarithmic equations	Ex. 28-5, p. 666 Handout

VI.   EVALUATION PROCESS / GRADING SYSTEM:

MAJOR ASSIGNMENTS AND TESTS
Regular topic tests will contribute a minimum of **60%** of the overall mark.

While regular tests will normally be scheduled and announced beforehand, there may be an unannounced test on current work at any time. Such tests, at the discretion of the instructor, may be used for up to **30%** of the overall mark.

The instructor will provide you with a list of test dates and other required evaluation information for your class section. Tests may be scheduled out of regular class time.

ATTENDANCE
It is your responsibility to attend all classes during the semester. Research indicates there is a high correlation between attendance and student success.

If you are absent from class, it is your responsibility to find out what work was covered and assigned and to complete this work before the next class. Your absence indicates your acceptance of this responsibility.

Unexcused absence from a test may result in a mark of zero ("0"). Absence may be excused on compassionate grounds such as verified illness or bereavement. On return from an excused absence, you should ask your instructor to schedule the writing of a make-up test. Failure to do so will be considered as an unexcused absence.

METHOD OF ASSESSMENT (GRADING METHOD)

Grade	**Definition**	**Grade Point Equivalent**
A+ Consistently outstanding	90% - 100%	4.00
A Outstanding achievement	80% - 89%	3.75
B Consistently above average achievement	70% - 79%	3.00
C Satisfactory or acceptable achievement in all areas subject to assessment	60% - 69%	2.00
R Repeat - The student has not achieved the objectives of the course, and the course must be repeated.	Less than 60%	0.00
X A temporary grade, limited to situations with extenuating circumstances, giving a student additional time to complete course requirements **(See Below)**		
CR Credit exemption		

The method of calculating your weighted average will be defined by your instructor. Since grades are based upon averages, it follows that good marks in some tests can compensate for a failing mark in another test.

Applied Resource Calculations II   MTH1270-2
COURSE NAME   CODE NO.

VI.   EVALUATION PROCESS / GRADING SYSTEM (continued):

Make-Up Test (if applicable)
An "X" grade may be assigned at the end of the regular semester if you have met ___**ALL**___ of the
following criteria for the course:

- an overall average between 50% and 59% was achieved
- at least 50% of the tests were passed
- at least 80% of the scheduled classes were attended
- at least 80% of quizzes and assignments were submitted
- all of the topic tests were written

If you are assigned an "X" grade, you may convert it to a "C" grade by writing a make-up test on
topics agreed to by the instructor. This test will be available at the time agreed to by your
instructor.

At the end of the regular term, it is your responsibility to obtain your results from your instructor
and, in the event of an "X" grade, to inquire when the make-up test will be available.

The score you receive on this make-up test will replace your original test score and be used to
re-calculate your weighted average. If the re-calculated average is 60% or greater, a "C" grade
will be assigned. If the re-calculated average is 59% or less, an "R" grade will be assigned.

"R" and "X" Grades at the end of the Semester
If an "X" grade is not cleared by the specified date, it will become an "R" grade. Except for
extenuating circumstances, an "X" grade in Math will not be carried into the next semester.

"R" Grades during the Semester
A student with a failing grade and poor attendance (less than 80% attendance) may be given an
"R" at any time during the semester.

VI.   SPECIAL NOTES:

Special Needs
Students with special needs (e.g. physical limitations, visual impairments, hearing impairments,
learning disabilities) are encouraged to discuss required accommodations with the professor
and/or contact the Special Needs Office.

Advanced Standing
Students who have completed an equivalent post-secondary course must bring relevant
documents to the Coordinator, Mathematics Department:
- a copy of course outline
- a copy of the transcript verifying successful completion of the equivalent course
Note: A copy of the transcript must be on file in the Registrar's Office.

Applied Resource Calculations II   MTH1270-2
COURSE NAME   CODE NO.

VII.   PRIOR LEARNING ASSESSMENT

Students who have related employment-centered experience should see the Prior Learning
Assessment (PLA) Coordinator.