

**SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE MARIE, ON**



COURSE OUTLINE

Course Title: Applied Resource Calculations

Code No.: Mth 107-3

Semester: One

**Program(s): Forestry Technician, Fish & Wildlife Technician,
Parks and Outdoor Recreation**

Author: The Mathematics Department

Date: August 1998

Previous Outline Dated: New

**Approved: *QC<UU Wj^JJ*
6 Dean**

**<&* - 9P
/Date**

Total Credits: 3

Prerequisite(s): None

Substitutes: Mth 113, Mth 120, Mth 143, Mth 426

Length of Course: 3 hrs./week Total Credit Hours: 48

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I. COURSE DESCRIPTION:

This course includes a review of basic algebraic processes, estimation, the metric system, practical applications in plane and solid geometry, word problems, ratio, proportion and percent.

II. STUDENT PERFORMANCE OBJECTIVES:

The basic objectives are that the student develop an understanding of the methods studied, demonstrate a knowledge of the facts presented and show an ability to use these in the solution of problems. To accomplish these objectives, exercises are assigned. Test questions will be of near equal difficulty to questions assigned in the exercises. 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 below.

III. TOPICS TO BE COVERED:

Approximate Time Frame

- | | |
|---|----------|
| 1. a) Estimation
b) Dimensional Analysis
c) The Metric and British System | 8 hours |
| 2. Plane Geometry | 6 hours |
| 3. Solid Mensuration | 10 hours |
| 4. Elementary Algebra | 16 hours |
| 5. Ratio, Proportion and Percent | 8 hours |

IV. LEARNING ACTIVITIES:

TOPIC NUMBER	TOPIC DESCRIPTION	REFERENCE CHAPTER ASSIGNMENTS	
1.0	Estimation, Dimensional Analysis and Units Rounding	Chapter 3	
1.1	Approximate numbers and rounding off procedures	Ex:	3-1 p. 55 3-2 p. 57 3-3 p. 59 3-4 p. 61 3-5 p. 64 3-6 p. 69 3-7 p. 71
1.2	Dimensional analysis for conversion between systems of measure and within systems	Ex.	4-1 p.77

IV. LEARNING ACTIVITIES (cont'd):

TOPIC NUMBER	TOPIC DESCRIPTION	REFERENCE CHAPTER ASSIGNMENTS	
1.3	The "SI" metric system and the British Engineering System	Ex.	4-2 p. 80 4-3 p. 82 4-4 p. 84 Class notes
2.0	Plane Geometry	Chapter 13	
2.1	Lines and angles	Ex.	13-1 p. 241
2.2	Triangles		13-2 p. 249 13-3 p. 255
2.3	Quadrilaterals		13-4 p. 262
2.4	Definition and theorems of the circle		13-5 p. 266
2.5	Review		Review exercise p. 268
3.0	Solid Mensuration		
3.1	Prisms	Ex.	14-1 p. 275
3.2	Cylinders		14-2 p. 279
3.3	Pyramids and Cones		14-3 p. 285
3.4	Frustum		Class notes
3.5	Spheres		14-4 p. 287
4.0	Review of Elementary Algebra		
4.1	Operations with signed numbers	Ex.	6-1 p 104 6-2 p 106 6-3 p 109 6-4 p 112 6-5 p 115
4.2	Introduction to Algebra: i) Adding and subtracting ii) Laws of exponents	Ex.	7-1 p 126 7-2 p 130 7-3 p 136
4.3	a) Multiplication of algebraic expressions including Special Products	Ex.	8-1 p 141 8-2 p 143 8-3 p 145 8-4 p 147 8-5 p 149 8-6 p 150
	b) Division of algebraic expressions	Ex.	9-1 p 156 9-2 p 158
4.4	Solutions and properties of linear equations	Ex.	10-1 p. 167 10-2 p. 173 10-3 p. 175

IV. LEARNING ACTIVITIES (cont'd):

TOPIC NUMBER	TOPIC DESCRIPTION	REFERENCE CHAPTER ASSIGNMENTS	
4.5	Factoring	Ex.	16-1 p. 323 16-2 p. 327 16-3 p. 332 16-4 p. 338
5.0	Ratio, Proportion and Variation		
5.1	Write the ratio of numbers or quantities in simplest form	Ex.	26-1 p. 588
5.2	Solve a proportion for an unknown term	Ex.	26-2 pp. 593-595
5.3	Direct variation	Ex.	26-3 pp. 600-602
5.4	Joint, inverse and combined variations	Ex.	26-4, pp. 607-609
5.5	Review exercises		pp. 609-611
5.6	Converting to and from percent	Ex.	5-1 p. 90
5.7	Solving percentage problems	Ex.	5-2 pp. 92-94
5.8	Percent change	Ex.	5-3 pp. 96-97

V. REQUIRED RESOURCES / TEXTS / MATERIALS:

1. Introductory Algebra and Trigonometry with Applications, by Calter, P. and Rogers, C. F.
2. Calculator: (Recommended) SHARP Calculator EL-531L. *The use of some kinds of calculators may be restricted during tests.*

VI. EVALUATION PROCESS/GRADING SYSTEM:**MAJOR ASSIGNMENTS AND TESTS**

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.

At the discretion of the instructor, there may be a mid-term exam and there may be a final exam, each of which can contribute up to 30% of the overall mark.

The instructor will provide you with a list of test dates. 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)

A+	Consistently outstanding	(90%-100%)
A	Outstanding Achievement	(80% - 89%)
B	Consistently above average achievement	(70% - 79%)
C	Satisfactory or acceptable achievement in all areas subject to assessment	(55% - 69%)
X or R	A temporary grade, limited to situations with extenuating circumstances, giving a student additional time to complete course requirements (See below)	(45% - 54%)
R	Repeat - The student has not achieved the objectives of the course, and the course must be repeated	(0% - 44%)
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.

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:

- an overall average between 45% and 54% was achieved
- at least 50% of the tests were passed
- at least 80% of the scheduled classes were attended
- all of the topic tests were written

VI. EVALUATION PROCESS/GRADING SYSTEM (Continued):

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 55% or greater, a "C" grade will be assigned. If the re-calculated average is 54% 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.

VII. SPECIAL NOTES:

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.

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VIII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the instructor or the Prior Learning Assessment Office (E2203).