

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: Applied Resource Calculations II
CODE NO. : MTH127-2 **SEMESTER:** Winter
PROGRAM: Forestry Technician / Fish and Wildlife Technician
AUTHOR: The Mathematics Department
DATE: Jan 2005 **PREVIOUS OUTLINE DATED:** Aug 2004
APPROVED:

| | _____ DEAN | _____ DATE |
|-------------------------|---------------|---------------|
| TOTAL CREDITS: | 2 | |
| PREREQUISITE(S): | MTH 107-3 | |
| HOURS/WEEK: | 2 | |

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For additional information, please contact C. Kirkwood, Dean
School of Technology, Skilled Trades & Natural Resources
(705) 759-2554, Ext.688

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:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Work with fractional algebraic expressions and equations
2. Solve algebraic equations
3. Work and solve triangles using trigonometry
4. Work with exponents and roots
5. Work with logarithms

III.

| TOPIC NUMBER | TOPIC DESCRIPTION | REFERENCE CHAPTER ASSIGNMENTS |
|---------------------|---|--------------------------------------|
| 1.1 | Equivalent fractions | Ex. 17-1, pp. 366-368 |
| 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. 389-390 |
| 1.5 | Literal equations and formulae | Ex. 18-2, p. 392-393 |
| 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. 407-408 |
| 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 |

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| 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 | <u>Common and natural logarithms</u> | Ex. 28-2, pp. 654-655 |
| 5.2 | <u>Applications of logarithmic equations</u> | Ex. 28-5, p. 666 |

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

1. Foundations of Technical Mathematics (Canadian Ed.), by Calter, P., Rogers, C. F., and Giguere, J.
2. Calculator – EL531W. *The use of some kinds of calculators, cell phones, and other electronic devices may be restricted during tests.*

V. EVALUATION PROCESS/GRADING SYSTEM:

There will be 3 test of equal value. The average of the three tests will be used for your final grade

The following semester grades will be assigned to students:

| Grade | Definition | Grade Point Equivalent |
|--------------|-------------------|-------------------------------|
| A+ | 90 – 100% | 4.00 |
| A | 80 – 89% | 3.00 |
| B | 70 - 79% | 2.00 |
| C | 60 - 69% | 1.00 |
| D | 50 – 59% | |

| | | |
|-------------|--|------|
| F (Fail) | 49% and below | 0.00 |
| CR (Credit) | Credit for diploma requirements has been awarded. | |
| S | Satisfactory achievement in field /clinical placement or non-graded subject area. | |
| U | Unsatisfactory achievement in field/clinical placement or non-graded subject area. | |
| X | A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course. | |
| NR | Grade not reported to Registrar's office. | |
| W | Student has withdrawn from the course without academic penalty. | |

VI. SPECIAL NOTES:

Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 703 so that support services can be arranged for you.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

<include any other special notes appropriate to your course>

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.