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|  **SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY** **SAULT STE. MARIE, ONTARIO**Sault CollegeCOURSE OUTLINE |
| **COURSE TITLE:** | Applied Resource Calculations I |
| **CODE NO. :** | MTH133-3 | **SEMESTER:** | One |
| **PROGRAM:** | NEOS |
| **AUTHOR:** | Math Department |
| **DATE:** | January 2013 | **PREVIOUS OUTLINE DATED:** | August2011 |
| **APPROVED:** | “Colin Kirkwood” | Dec/12 |
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| **TOTAL CREDITS:** | 3 |
| **PREREQUISITE(S):** | None |
| **HOURS/WEEK:** | 3 |
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| *For additional information, please contact Colin Kirkwood, Dean* |
| *School of Environment, Technology and Business* |
| *(705) 759-2554, Ext. 2688* |

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| **I.** | **COURSE DESCRIPTION:** |
|  | This course focuses on developing the student’s number sense and problem solving abilities. While the student will make use of technology during problem solving, great emphasis will be placed on judging the reasonableness of the solutions. To this end the student will be required to estimate and think critically. Topics include a review of fundamental arithmetic, strengthening of mental math skills, systems of measurement, angle relationships, plane geometry, solid geometry, Pythagorean Theorem, and practical applications in plane and solid geometry. |

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| **II.** | **LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:** |
|  | Upon successful completion of this course, the student will demonstrate the ability to: |
|  | 1. | Perform calculations accurately with and without technology |
|  |  | Potential Elements of the Performance:* use computer technology, throughout the semester, to improve mental mathematical skills and speed
* use estimation to check and determine the reasonableness of answers, round values appropriately as required
* use technology appropriately as a problem solving tool
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|  | 2. | Solve problems involving mathematics |
|  |  | Potential Elements of the Performance:* exhibit perseverance, ability, and confidence to use mathematics to solve problems
* use a variety of problem-solving strategies and exhibit logical thinking
* work effectively with others to solve problems
* estimate and check answers to problems and determine the reasonableness of results
* communicate findings both in writing and orally using appropriate mathematical language and symbolism
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|  | 3. | Measure and work with measurements |
|  |  | Potential Elements of the Performance:* use Metric, Imperial, and U.S. Customary System of measurement
* convert between systems of measurement
* work with measures of length, area, volume, currency, etc
* make reasonable estimations of the measure of various items
* measure various items using the appropriate methods and devices
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|  | 4. | Angles and Plane Geometry |
|  |  | Potential Elements of the Performance:* measure of angles and angle relationships
* angles formed by intersecting lines, perpendicular lines, parallel lines, complementary angles, supplementary angles, corresponding angles, alternate angles, sum of angles in polygons
* right triangles and the Pythagorean Theorem
* calculate the perimeter and area of regular and irregular plane geometric shapes; i.e. rectangle, square, parallelogram, rhombus, trapezoid, triangle, circle, semi-circle, and composite shapes
* applications of plane geometry; directions and bearings
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|  | 5. | Solid Geometry |
|  |  | Potential Elements of the Performance:* + - orthographic projections, front view, side view and top view of three-dimensional objects
		- surface area and volume of a right prism, cylinder, pyramid, cone, sphere, and composite solids
		- applications of solid geometry
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| **III.** | **TOPICS:** |
|  | 1. | Number Sense and Mental Calculations |
|  | 2. | Angle Measurement, Angle Relations and the Pythagorean Theorem |
|  | 3. | Plane Geometry |
|  | 4. | Solid Geometry |
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| **IV.** | **REQUIRED RESOURCES:** |
|  | Calculator: SHARP Scientific Calculator EL-531.Note:*The use of some kinds of calculators, cell phones, and other electronic devices may be restricted during tests.*Geometry Set: Student are to bring a geometry set to each class that includes the following list of items:* 6 inch ruler graduated in both inches and millimetres
* protractor
* compass
* 450/900 triangle and 300/600 triangle
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| **V.** | **EVALUATION PROCESS/GRADING SYSTEM:**Individual Classroom Activities and Attendance 20%Group Classroom Activities and Assignments 20%Tests 60% |
|  | The following semester grades will be assigned to students: |

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|  | Grade | Definition | *Grade Point Equivalent* |
|  | A+ | 90 – 100% | 4.00 |
|  | A | 80 – 89% |
|  | B | 70 - 79% | 3.00 |
|  | C | 60 - 69% | 2.00 |
|  | D | 50 – 59% | 1.00 |
|  | F (Fail) | 49% and below | 0.00 |
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|  | 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. |  |

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| **VI.** | **SPECIAL NOTES:** |
| Attendance:Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

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| **VII.** | **COURSE OUTLINE ADDENDUM:** |
|  | The provisions contained in the addendum located on the portal form part of this course outline. |

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