

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



**SAULT
COLLEGE**

COURSE OUTLINE

COURSE TITLE: CAD/GIS
CODE NO. : GIS425 **SEMESTER:** 11F
PROGRAM: Geographic Information Systems Applications Specialist
AUTHOR: Heath Bishop
DATE: May, 2011 **PREVIOUS OUTLINE DATED:** N/A

APPROVED:

“B.Punch”

CHAIR

DATE

TOTAL CREDITS: 3

PREREQUISITE(S): None

HOURS/WEEK: 3

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For additional information, please contact Brian Punch, Chair
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I. COURSE DESCRIPTION:

This course involves the integration between AutoCAD and GIS software packages. The ability to convert data between these packages is essential in many GIS industries, and is therefore a focal point of this course. The students will be using real-world data to solve geo-spatial problems while also learning the intricacies of file conversion and compatibility. Students will get experience creating data within a CAD environment and subsequently learn the skills necessary to successfully bring the data into GIS software for further analysis.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Use AutoCAD SoftwarePotential Elements of the Performance:

- Create basic data in AutoCAD
- Input a survey plan into AutoCAD

2. Perform Data IntegrationPotential Elements of the Performance:

- Convert AutoCAD DWG and DXF files into GIS files
- Be able to use clean this data as necessary in order to use successfully in a GIS environment
- Deal with the numerous conversion issues that arise in this process

3. Editing in ArcGISPotential Elements of the Performance:

- Convert AutoCAD DWG and DXF files into GIS files
- Basic editing in ArcGIS using the editor toolbar
- Digitizing and use of snapping tools

4. AutoCAD 3d Map

Potential Elements of the Performance:

- Use AutoCAD 3d Map as a GIS software
- Use both CAD data as well as GIS data to perform spatial analyses

III. TOPICS:

1. AutoCAD
 - Perform basic editing tasks and drawing features in AutoCAD
 - Read a survey plan and reproduce it in AutoCAD
2. Conversion / Integration
 - Geodatabase theory
 - Designing a Geodatabase
 - Geodatabase geometry and topology
 - Relational databases and geodatabases
 - Coverage, shapefile and projection import and export
3. Editing in ArcGIS
 - Performing editing tasks in ArcGIS
 - Basic use of editing tools and snapping function
4. AutoCAD 3d Map
 - Introduction to the interface
 - Functionality of the software
 - File types used
 - Map creation

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

None

V. EVALUATION PROCESS/GRADING SYSTEM:

| | |
|--------------|------------|
| Assignments | 50% |
| Midterm Test | 25% |
| Final Test | <u>25%</u> |
| Total | 100% |

Note: Students must achieve a mark of at least 50% on the Test components AND complete all the assignments to an acceptable level in order to pass the course.

The following semester grades will be assigned to students:

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

VI. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.