

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

COURSE OUTLINE

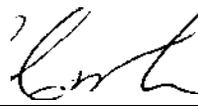
COURSE TITLE: STRUCTURAL BLUEPRINT READING

CODE NO.: WLD129 SEMESTER: FALL

PROGRAM: WELDING and FABRICATING -Techniques
AVIATION WELDING

AUTHOR: D. SOCCHLA

DATE: h\jACx «-λ^ b PREVIOUS OUTLINE DATED: New

APPROVED:  /ftf ^ ^ ^ ^
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IV. LEARNING ACTIVITIES/REQUIRED RESOURCES

Topic/Unit - #1. Course Introduction and Orientation

Learning Activities:

- 1.1 > A lecture presentation of the following major course documents:
 - a. course outline
 - b. course guidelines
 - c. course marking system including attendance requirements

Resources:

- > printed handouts, overheads, chalkboard notes.

Topic/Unit - # 2. Concepts of Orthographic Projection

Learning Activities:

- 2.1 > A lecture presentation and class discussion of the following major items:
 - a. definition / description of orthographic projection
 - b. identification / selection of the front view
 - c. placement and development of required views
- 2.2 > Discussion and chalkboard development of an *orthographic drawing* using ratio and proportion to show the following 'alphabet of lines' required for use with orthographic projection.
 - a) object and hidden lines
 - b) extension and dimension lines
 - c) construction lines
 - d) centre lines.
- 2.3 > Independent Assignment # 1 covering the topic of '*Orthoeraphic Projectioit*', that mcludes the use of section, auxiliary ana detail views.

- 2.4 > A lecture presentation and class discussion *of section views* to include:
 - a. purpose and development
 - b. types and location
 - c. identification
- 2.5 > Discussion and chalkboard development of typical *section views*.
- 2.6 > A lecture presentation and class discussion *of auxiliary views* to include:
 - a. purpose and development
 - b. types and location
 - c. identification
- 2.7 > Discussion and chalkboard development of an orthographic drawing using ratio and proportion to show the following 'alphabet of lines' required for use with auxiliary and section views.
 - a. cutting plane line
 - b. viewing plane line
 - c. leaders
 - d. break lines
 - e. cross-hatch lines

Resources

- > WIC Modules # 3, chalkboard notes, overheads, models and assignment sheets.

TopicAJnit - #3 The Welding Symbol

Learning Activities:

- 3.1 > A lecture presentation and class discussion of the following major items:
 - a. basic joint designs and weld types
 - b. components of a welding symbol
 - c. functions of welding symbol components
 - d. arrow side vs other side significance
 - e. typical (fillet and groove weld) symbol information

- 3.2 > Reading Assignment # 1 c/w review questions based upon Learning Activity #3.1

- 3.3 > Review of material to date using actual structural shop drawings to demonstrate the effective use of welding symbols and orthographic projection.
- 3.4 > A lecture presentation and class discussion of the following weld symbols to include:
 - a. fillet welds
 - b. plug and slot welds
 - c. square, bevel and vee, J and U groove welds
 - d. Held weld and weld all-around
 - e. melt thru and back or backing weld
- 3.5 > Reading Assignment # 2 c/w review questions based upon Learning Activity # 3.4
- 3.6 > Review of material to date using actual structural shop drawings to demonstrate the effective use of welding symbols.
- 3.7 > Independent Assignment # 2 that covers the sketching of structural members to include:
 - a. a pre-selected number of views
 - b. overall dimensions, piece marks, welding symbols and standard abbreviations for each view
 - c. a supporting 'Bill of Material'
- 3.8 > A lecture presentation and class discussion on the use of dimensions to indicate weld size, depth of joint preparation, effective throat, weld length and contour.
- 3.9 > Reading Assignment # 3 c/w review questions based upon Learning Activity # 3.8

Resources:

- > WIC Modules # 3, chalkboard notes, overheads, shop drawings and assignment sheets.

Topic/Unit - THEORY TEST # 1 and REVIEW

Resources:

- > test booklets, student response sheets and grade/answer sheet

Topic/Unit - # 4 Reading Structural (Shop) Prints

Learning Activities:

- 4.1 > A lecture presentation and class discussion of the proper format and page layout of a structural drawing to include:
 - a. title and revision block
 - b. structural notes
 - c. specified codes and standards
 - d. general shop notes
 - e. bill of material
 - f. types of views used by the detailers
- 4.2 > Review of material using actual shop drawings to demonstrate the effective use of drawing format and page layout.
- 4.3 > A lecture presentation and class discussion of MAJOR and Minor piece marks as used on a structural drawing to include:
 - a. reference to page number and order of drawing
 - b. piecemark standards currently in use
 - c. relationship between drawing components, piece marks and the bill of material.
 - d. purpose of piece marks as related to the reading prints and the identification of structural members.
- 4.4 > Review of material using actual structural shop drawings to demonstrate the effective use of MAJOR and Minor piece marks.
- 4.5 > A lecture presentation and class discussion on the use of both standard dimensioning practices as well as standard abbreviations.

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- 4.6 > Review of material using actual structural shop drawings to demonstrate the effective use of standard abbreviations and standard dimensioning practices.
- 4.7 > A lecture presentation and class discussion on the contents, organization and proper format for a typical 'Bill of Material'.

Resources:

- > chalkboard notes, overheads, printed handouts, structural drawings and assignment sheets.

Topic/Unit - THEORY TEST #2 and REVIEW

Resources:

- > test booklets, student response sheets, assignment sheets, 8.5 x 11 blank drawing paper, selected shop drawing and grade/answer sheet.

EVALUATION METHODS: (INCLUDES ASSIGNMENTS, ATTENDANCE REQUIREMENTS, ETC.)**Course Grading Scheme**

A+	90 - 100%	Outstanding Achievement
A	80 - 89%	Above Average Achievement
B	70 - 79%	Average Achievement
C	60 - 69%	Satisfactory Achievement
U	Unsatisfactory , only given on the midterm report	
S	Satisfactory, only given on the midterm report	
R	Repeat, signifies a failing grade	
X	A temporary grade that is limited to instances where special circumstances have prevented the student from demonstrating the required elements of performance by the end of the course semester. An 'X' grade must have the Dean's approval and has a maximum time limit of 120 days after which it becomes an 'R' grade.	

Final Mark (see item #3 under special Notes)

Theory Tests	45%
Independent Assignments	40%
Employment Readiness	15%

V. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following:

- 1. The successful completion of a structural blueprint reading course with student outcomes and course topics that are at least 80% compatible with this course outline... AND...**
- 2. The successful challenge of all theory tests identified by this course outline.**

<OR>

- 3. Written proof of at least three (3) years of trade experience involving the competent use of structural shop and site/erection drawings... AND...**
- 4. The successful challenge of all theory tests identified by this course outline.**

Vn. REQUIRED STUDENT RESOURCES

- 12" Clear Plastic Desk Rule
- 4 - Pencils (2 pencils 'H' and 2 pencils 'HB')
- 1 - Eraser
- 1 - Binder c/w standard lined paper and quad-ruled paper
- 1 - WIC Module #3 Symbols for Welding

Vin. SPECIAL NOTES

1. **Students with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the Professor and / or contact the Special Needs Office, Room E1204, Ext. 493, 717,491 so that support services can be arranged for you.**
2. **Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.**
3. *** Student evaluations concerning the 'Final Marii' are further affected by the conditions set forth in the printed handout, 'Wdding Department Guidelines'. Be sure that you receive a copy of these guidelines.**
4. **Any person caught cheating or substituting another persons work in place of their own for the purpose of grading or evaluation will automatically fail the said assignment or test. College policy*'^ also dictates that such persons may be subject to immediate dismissal.**

**** Students should refer to the definition of "academic dishonesty" as provided in the Sault College '^Statement of Student Rights and Responsibilities".**