

#327

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON

COJ1BSE OJJIL1NE

COURSE TITLE: SKETCHING **AND** BLUEPRINT READING

CODE NO:

SEMESTER: FALL

PROGRAM: WELDER/FITTER

AUTHOR: **DENNIS SOCCHIA**

DATE: 1993-06-05

PREVIOUS OUTLINE DATED: 1991-05-07

APPROVED: _____
Dean, School of Technical Trades~


Date

COURSE NAME: SKETCHING *it* BLUEPRINT READING CODE NO.

TOTAL CREDIT HOURS: 48 REGULAR + 3 TRADE TESTS

PREREQUISITE(S): Students must be able to read, write and comprehend at the Grade 10 Level.

I. PHILOSOPHY/GOALS:

To provide students with an intermediate level of exposure to the concepts and principles of structural detailing as developed by CISC/AISC standards for dimensioning practices, abbreviations and orthographic projection. Ultimately, the student should be able to read typical site/erection drawings and/or structural (shop) drawings complete with notes, dimensions, welding symbols and bills of material.

II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course the student will:

1. Appreciate the differences between mechanical drafting and structural steel detailing.
2. Sketch structural steel members to show dimensions, details and attached parts.
3. Make up simple 'Bills of Material'.
4. Read structural shop prints.
5. Read typical site/erection drawings.

III. TOPICS TO BE COVERED:

	<u>Hours</u>
1. Course introduction and orientation	2
2. Structural steel as building components	4
3. Concepts of orthographic projection	12
Theory Test #1 and Review	2
4. The welding symbol	9.5
Theory Test #2 and Review	2
5. Reading structural shop prints	7
Theory Test #3 and Review	2
6. Reading site/erection drawings	6
Theory Test #4 and Review	2
7. Final Trades Test (open Book)	3

Note: For reasons of safety and economy, the instructor reserves the right to modify and/or change course objectives and topics.

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IV. LEARNING ACTIVITIES

<u>TOPIC NO.</u>	<u>NUMBER OF PERIODS</u>	<u>GENERAL TOPIC DESCRIPTION</u>	<u>RESOURCES</u>
Sault College		1.1 Introduction and orientation to Sketch & Blueprint concerning: i) course outline ii) course guidelines iii) course marking system including attendance	Handouts
STRUCTURAL STEEL AS BUILDING COMPONENTS			
Sault College	2	2.1 Identify and describe structural steel to include: i) common shapes ii) designations and size iii) mill tolerance on size iv) CSA and ASTM standards	CISC Manua
		2.2 Identify and describe the location and purpose of common building components to include: i) columns/base plates ii) beams, connecting plates and cross bracing iii) O.W.S.J, and typical roof truss design	CISC Manual
ORTHOGRAPHIC PROJECTION			
Ministry 2944.01	1/2	3.1 Identify and describe ortho i) location of views ii) rotation of views iii) development of views	Handouts & Notes
		3.2 Identify and describe the alphabet of lines to include: i) object lines ii) hidden lines iii) extension lines iv) dimension lines v) construction lines vi) centre lines	WIC Module #3
		3.3 Sketch a multi-view drawing by means of ratio and proportion	Handouts & Notes

IV. LEARNING ACTIVITIES

TOPIC NO.	NUMBER OF PERIODS	GENERAL TOPIC DESCRIPTION	RESOURCES
	2	3.4 Identify and describe section views to include: i) types iv) development ii) purpose v) section lines iii) location	WIC Module #2
Sault College	2	3.5 Identify and describe auxiliary views to include: i) types iv) development ii) purpose v) viewing plane lines iii) location	
	1/2	3.6 Identify and describe the alphabet of lines to include: i) cutting plane lines ii) viewing plane lines iii) leaders iv) break lines	
Ministry 2944.01		3.7 Sketch a simple section & auxiliary view by means of ratio & proportion	
THEORY TEST #1 AND REVIEW			
THE WELDING SYMBOL			
		4.1 Identify and describe basic weld joints and weld types	
Sault College	1	4.2 Identify and list information found on typical welding symbols	WIC Module #3
	1 1/2	4.3 Identify and name the parts of a weld (fillet and groove)	
	2	4.4 Identify and describe basic weld symbols to include:) fillet welds i) plug or slot welds ii) square groove v) vee groove v) bevel vi) weld all around vii) field weld viii) melt-thru	WIC Module #3

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IV. **LEARNING ACTIVITIES**

<u>TOPIC NO-</u>	<u>NUMBER OF PERIODS</u>	<u>GENERAL TOPIC DESCRIPTION</u>	<u>RESOURCES</u>
Ministry 2944.01		4.5 Identify and describe basic welding symbols to include: i) joint interface ii) arrow, reference line, tail iii) arrow side, other side iv) addition of weld symbol	WIC Module #3
		4.6 Review above material using text, chalkboard examples and typical shop drawings	
		4.7 THEORY TEST #2 and REVIEW	
READING STRUCTURAL SHOP PRINTS			
Sault College		5.1 Identify and describe the general format of a structural shop drawing to include:) title block i) revisions ii) bill of material v) use of proportion VS scale v) general notes	Structural Prints Notes
		5.2 Identify and describe the use of major piece marks	Structural Prints
		5.3 Identify and describe the use of minor piece marks	Structural Prints
		5.4 Identify and describe 'Bill of Material'	Structural Prints
		5.5 Identify and describe general dimensioning practices	Structural Prints Notes/ Handouts
Ministry 2944.01	1	5.6 Identify and describe standard abbreviations.	Notes/ Handouts
	2	5.7 THEORY TEST #3 and Review	

IV. LEARNING ACTIVITIES

TOPIC NO.	NUMBER OF PERIODS	GENERAL TOPIC DESCRIPTION
6.		SITE AND ERECTION DRAWINGS
	3	6.1 Identify and describe the general format of a site/erection to include i) project north ii) bench marks, elevations, and grid system Hi) base plate/anchor bolt patterns iv) wall and floor elevations v) major and minor piece marks
		6.2 Identify and describe the relationship between shop and erection drawings to include: i) location of building components ii) identification of components by means of piece marks and building location Hi) location and detail of components on shop drawings
		6.3 THEORY TEST #4 AND REVIEW
		FINAL TRADES TEST (OPEN BOOK)
	1/2	7.1 Identify and explain general information on a structural drawing with respect to:) title block i) revisions ii) bill of materials v) general notes
Sault College		7.2 Identify and describe specific information on a structural drawing with respect to: bill of material i) given views ii) dimensions and abbreviations v) welding symbols
	1/2	7.3 Expand upon given drawing(s) by sketching specific views to further explain the object being fabricated.
		7.4 Return, review and discuss test.

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V. EVALUATION METHODS: (INCLUDES ASSIGNMENTS, ATTENDANCE REQUIREMENTS ETC.)

General Assessment

A = 85 - 100%
B = 75 - 84%
C = 60 - 74%
D = 50 - 59%
F = 0 - 49%

* Final Mark

2 Simple Sketches	20%
4 Theory Tests	55%
1 Trades Test	25%
Attendance (** See Attached)	

VI. REQUIRED STUDENT RESOURCES

12" Clear Plastic Desk Rule
2 - 2H Pencils
2 - 1H Pencils
1 - Eraser
WIC Module #2 Basic joints, B.P.Reading
WIC Module #3 Symbols for Welding

VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY BOOK SECTION

VIII. SPECIAL NOTES

* Student evaluations concerning the 'Final Mark' are further affected by the conditions set forth in the printed handout, 'Guidelines for Sketching and Blueprint Reading'.

Be sure to obtain a copy from your instructor.

** Special guidelines for class attendance are included in the above paper.