

SAULT COLLEGE
of Applied Arts and Technology
Sault Ste. Marie

COURSE OUTLINE

DRAFTING

Mechanical Drafting

DRF 210-5 MD3

revised June, 1981 by G. MacLean

DRAFTING

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TEXTBOOK: Engineering Drawing and Design, SI Metric
Jensen - McGraw Hill

REFERENCE BOOKS:

1. Machinery's Handbook -- (Industrial Press)
2. CSA Standard B78.1, and B78.2
3. Fastener Standards -- (Industrial Fasteners Institute)
4. American Society for Metals Handbook No. 1
5. Modern Engineering Tolerancing -- Hill, Jensen (McGraw-Hill)

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GENERAL OBJECTIVES:

1. Make the student aware of standard methods used to describe more complicated parts and mechanisms.
2. Provide the opportunity for the student to improve Drafting techniques.
3. Introduce the student to an organized approach to design, and give practice in making design decisions.

Topic No.	Periods	Topic Description	Reference
1	10	<u>Review</u> (a) Orthographic projection (b) Dimensioning <ul style="list-style-type: none"> - technique - unilateral, bilateral & limit dimensioning - placement of dimensions and notes (c) Tolerancing <ul style="list-style-type: none"> - definition of terms - types of fits - basic hole system for mating parts (d) Threads and Fasteners <ul style="list-style-type: none"> - nomenclature - representation of various thread forms - threaded fasteners (e) Sections <ul style="list-style-type: none"> - types - conventions - breaks (f) Pictorial Drawing <ul style="list-style-type: none"> - isometric - oblique (g) Detail and assembly drawings title block, bill of material, zoning, revisions, numbering systems	
2	15	Dimensioning and Tolerancing <ul style="list-style-type: none"> - consideration and choice of tolerances for function manufacture and cost - interchangeability of parts - selective assembly - tolerances related to shop processes - accumulation of tolerance - surface quality, and symbols - surface quality related to shop processes - basic shaft system for fits of mating parts 	
3	10	Design of Weldments <ul style="list-style-type: none"> - welding processes - types of joints - standard symbols 	

TOPIC NO.	PERIODS	TOPIC DESCRIPTION	REFERENCE
4	10	Cams <ul style="list-style-type: none"> - types of cams and followers - nomenclature - motions - displacement diagrams - radial and offset cams - working drawings 	
5	10	Gears <ul style="list-style-type: none"> - types of gears - definitions - calculation of RPM - drawing of a spur gear, worm and worm gear, and bevel gear 	
6	10	Electrical and Electronic Drawing <ul style="list-style-type: none"> - chassis fabrication - symbols for electrical and electronic diagrams - conventional practices 	
7	10	Standard Parts <ul style="list-style-type: none"> - pins, rivets, keys, rings, springs, journal bearings, turn-buckles, seal - use of industrial catalogs 	
8	5	Geometric Tolerancing <ul style="list-style-type: none"> - introduction - feature control symbols 	
9	10	Design Project <ul style="list-style-type: none"> - student selection of subject (to be approved) - consideration of material - consideration of manufacturing process - submission will consist of design notes, pictorial illustration, complete working drawings 	