

I. COURSE DESCRIPTION:

Develop the ability to layout templates and patterns, through the interpretation of drawings, using common layout and measuring tools, applying shop formulas and performing calculations to ensure the accuracy and functionality to meet the tolerances specified in the blueprints and specifications of the manufactured item.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. *Identify the purpose and fundamentals of layout development.*

- Classes of geometric forms
- Manual layout development

2. *Describe methods of pattern development.*

- Radial line
- Parallel line
- Triangulation
- Mathematical

3. *Develop patterns for rectangular tapered shapes employing radial line development method.*

- Layout method for flat surfaces
- Bend allowance
- Flat, angled (sloping) surfaces
- Hoppers, shuts and pyramidal shapes
- Truncated pyramidal shape
- Verify accuracy

4. *Develop patterns for conical shapes employing radial line development.*

- Concentric cones
- Verify accuracy

5. *Develop patterns for cylindrical shapes employing parallel line development.*

- Straight, round, rolled shells and tanks
- Circular ducting

- Circular elbows
- Circular branches
- Piping intersections
- Verify accuracy

6. *Select materials for templates.*

- Paper
- Cardboard
- Wood
- Metal

7. *Develop templates for checking flat and curved surfaces.*

- Radius
- Diameter
- Angles
- Parallel bar
- Squaring methods
- Verify accuracy

8. *Use mathematics to support the development of patterns.*

- Slopes
- Dimensions
- Locations
- Verify accuracy

III. TOPICS:

1. FUNDAMENTALS OF PATTERN DEVELOPMENT
2. METHODS OF PATTERN DEVELOPMENT
3. PATTERNS FOR RECTANGULAR TAPERED SHAPES
4. PATTERNS FOR CONICAL SHAPES
5. PATTERNS FOR CYLINDRICAL SHAPES
6. TEMPLATE MATERIALS
7. CHECKING/VERIFYING TEMPLATES
8. MATHEMATICAL SUPPORT FOR PATTERNS

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- Impact Resistant Safety Glasses (CSA Approved)
- High Cut (6 inch) Safety Work Boot (CSA Approved)
- Weld Gloves (CSA Approved)
- Modules: Course Pack.
- IPT Metal Trades Handbook

V. EVALUATION PROCESS/GRADING SYSTEM:

Part 1 NOTES:

1. Re-writes are NOT allowed for any written assignment, quiz or test.
2. Repeats are NOT allowed for any shop test
3. Course attendance is mandatory. One percent (1 %) per hour will be Deducted from the final course grade for unexcused* absence.

[Any absence without a written, valid reason will be deemed unexcused.]

Valid reasons would include:

- Doctor's note
- Court note
- Family Death or Serious Illness supported by a written note.

Part 2 Final Course Grades:

The final course grade will be determined by means of the following list of weighted factors:

Factor	Value
Shop Assignments	65 %
Practical Tests	35 %
Attendance	-1% per Unexcused Hour
Late	-1% per Late
Shop Clean-up	-1% per Incident

The following semester grades will be assigned to students:

Grade	Definition	<i>Grade Point Equivalent</i>
A+	90 – 100%	
A	80 – 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00

D		50 – 59%	1.00
F (Fail)		49% and below	0.00
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.

VII. COURSE OUTLINE ADDENDUM:

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