

807-2

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ON**

**COURSE OUTLINE**

COURSE TITLE: TRADE THEORY - BASIC

CODE NO.: STM 021 SEMESTER: 2 (8 Weeks)

PROGRAM: STEAM PRE-APPRENTICESHIP PROGRAM

AUTHOR: BRIAN MICK

DATE: OCT/95 PREVIOUS OUTLINE DATED: NEW

APPROVED:

DEAN



DATE

**TRADE THEORY BASIC**  
COURSE NAME

**STM 021**  
CODE NO.

TOTAL CREDITS 13

PREREQUISITE(S): STM Oil

**I. PHILOSOPHY/GOALS:**

To gain theoretical knowledge on various components of the piping industry pertaining to the trade of steamfitting as outlined in the approved ministry curriculum for steamfitter

**II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES):**

Upon successful completion of this course the student will:

- 1) identify piping materials and their use
- 2) calculate specific lengths by the use of tables, charts and/or formula
- 3) identify types of hot water heating systems and 175 various components
- 4) identify types of valves and their proper use in the piping field
- 5) learn the application of physics in the piping field

**III. TOPICS TO BE COVERED:**

**Approximate Time  
Frames (Optional)**

- 1) steel pipe, copper pipe, plastic pipe, cast iron pipe, stainless steel pipe
- 2) fitting allowances, pipe bending, angle calculations
- 3) types of hot water heating systems, pumps, heat transfer equipment, types of boilers, boiler controls
- 4) boilers, boiler controls gate valves, globe valves, butterfly valves, ball valves check valves
- 5) Temperature scale conversion, B.T.U. calculation properties of water, pressure and heads, temperature and pressure relationship, specific heat, latent and sensible heat

**IV. LEARNING ACTIVITIES/REQUIRED RESOURCES**

**Topic/Unit** - \_\_\_\_\_

**Learning Activities:**

Types of copper/tubing and their use  
Types and application of plastic pipe  
Steel pipe application  
Methods of joining  
Schedules  
Calculation for tube bending, travel of various angled offsets and rolling offsets  
Calculations involving temperatures, B.T.U. pressure

**Resources:**

Learning Modules  
Films  
Texts

**Topic/Unit** - \_\_\_\_\_

**Learning Activities:**

Types of hot water boilers, their design and use  
Types of hot water heating systems  
Basic types of pumps  
Components of hot water systems  
Controls for hot water boilers

**Resources:**

Learning Modules  
Films  
Texts

**TRADF THEORY BASIC**  
COURSE NAME

**STM 02t**  
CODE NO.

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

**VI. 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:

**VII. REQUIRED STUDENT RESOURCES**

Other modules and handouts supplied by college

**VIII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY:**

**IX. SPECIAL NOTES**

Students with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.