

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: INTRODUCTION TO PULP AND PAPER TESTING
CODE NO.: PPE 121 **SEMESTER:** 2
PROGRAM: PULP AND PAPER OPERATIONS CERTIFICATE
AUTHOR: J. BETHUNE
DATE: APR. 2002 **PREVIOUS OUTLINE DATED:** NEW
APPROVED:

	<hr/>	DEAN	<hr/>	DATE
TOTAL CREDITS:	4			
PREREQUISITE(S):	PPE 166 PAPER QUALITY			
HOURS/WEEK:	3			

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For additional information, please contact
School of Trades and Technology
(705) 759-2554, Ext.485

I. COURSE DESCRIPTION:

This is a laboratory course designed to introduce the student to typical industry tests on raw materials and finished pulp or paper. Working with a preceptor, students will assist in such tests as Canadian Standard Freeness, consistency, moisture content, kappa or permanganate number, analysis of kraft liquor, acid strength, sodium sulphite strength, caliper, basis weight, bulk, density, burst, tear, tensile strength, stretch, opacity, whiteness, and colour. Students will be required to arrange their own preceptor who must be approved by faculty, and not all tests will be performed. The intention of this course is to provide students with first hand knowledge of the basic industry tests procedures and equipment studied in PPE 166 and other courses. It is designed for those students with little or no laboratory experience and is not intended to create qualified testers.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Indicate a knowledge of at least seven of the standard laboratory tests listed.

Potential Elements of the Performance:

- Assist in the performance of seven standard laboratory tests.
- Collect and tabulate test data.
- Draw appropriate graphs where required.
- Answer questions as required for each test.
- Submit completed laboratory reports for grading.

III. TOPICS:

1. Canadian standard freeness and consistency.
2. Moisture content of pulp and paper.
3. Kappa and permanganate number of pulp.
- 4A Analysis of kraft green or white liquor
- 4B Acid strength-Palmrose test.
- 4C Sodium Sulphite strength test.
- 4D Analysis of kraft green or white liquor-Alternate method
5. Caliper, Basis Weight, Bulk, and Density.
6. Burst and Tear.
7. Tensile Strength and Stretch.

8. Opacity and Whiteness.
9. Colour.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Bethune, J., Heitanen, W., and Sugden, A., "Study Guide for PPE 121, Introduction to Pulp and Paper Testing", Sault College of Applied Arts and Technology, 2002.

V. EVALUATION PROCESS/GRADING SYSTEM:

Students will be evaluated on their submission of seven completed laboratory reports on experiments selected from the study guide.

Note: Only one version of experiment 4 may be submitted. Four versions (4A, 4B, 4C, and 4D) are in the study guide in order to allow students from various mill and process types to participate in liquor testing.

Laboratory reports will be evaluated on the basis of completeness of tables, graphs (where required) and thoroughness of answers to the required questions.

Because of anticipated difficulty for students to arrange preceptorships in mills, students may work in pairs or a group of three and while they may all record the same test data, each will be expected to submit individual laboratory reports for grading.

Laboratory reports are to be initialed by the preceptor on the front page of each report submitted which will signify attendance and participation at that experiment.

The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
U	Unsatisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in limited situations with extenuating	

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.