



## **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 all credit courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 - 59%	1.00
F (Fail)	49% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field/clinical placement or non-graded subject areas.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject areas.	
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:

### Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 so that support services can be arranged for you.

### Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

### Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

### Course outline amendments:

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

## 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.