

SAULT COLLEGE  
of Applied Arts and Technology  
Sault Ste. Marie

COURSE OUTLINE

PULP TECHNOLOGY I

PPE 230-4

r e V I S e d January, 1984 by J. Korrey

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TEXT:

The Pulping of Wood - Pulp & Paper Manufacture Series, McGraw-Hill, Vol. 1, 1969.

I. THE CHEMICAL COMPOSITION OF WOOD

1. Introduction
2. Polysaccharides
  - a) cellulose
  - b) hemicelluloses
  - c) summary
3. Lignin
4. Extractives
5. Inorganics

II. INTRODUCTION TO PULPING (General Principles of Pulping)

1. Pulping Processes
  - a) mechanical
  - b) chemical

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    - sulfate - sodium
    - Magnesium
    - Ammonium
  - c) semi-chemical, et al.

III'. ALKALINE PULPING - KRAFT

1. Historical background
2. Description of the process
3. The chemistry of Kraft Pulping
  - a) the composition of pulping liquor
4. Variables in Alkaline Pulping
  - a) wood, species and conditions
  - b) alkali charge

- c) composition of cooking liquor
- d) temperature of digestion
- e) time of digestion
- f) balances - heat, material

5. Continuous Cooking

6. Control methods

#### ALKALINE RECOVERY AND BY-PRODUCTS

1. Introduction and Importance

2. Evaporation of black liquor

3. Recovery Furnace

4. Preparation of Cooking Liquor

5. Tall Oil Recovery

6. Balances

- a) material - cooking and washing
  - causticizing
  - lime kiln
- b) heat - recovery furnace
  - lime kiln
- c) water