Faculty of Engineering

School of Minerals and Energy Resources Engineering

Undergraduate Course Outline

MINE2810

Minerals & Processing

Part B

A/Prof Seher Ata

CONTENTS

2. AIMS, LEARNING OUTCOMES AND GRADUATE ATTRIBUTES

2.1. Course Aims

This course aims to equip the student with knowledge of mineral processing unit operations normally associated with the production of metal ores and coal preparation. Knowledge of hydrometallurgy unit operations normally associated with the production of major metals (i.e. copper and gold) is also provided.

2.2. Learning Outcomes

At the conclusion of this course, students should be able to:

1. Describe the work that metallurgists and mineral process engineers do.
2. Describe the major issues in mineral and metallurgical processing.
3. Explain the implications of mineralogical characteristics for mineral processing requirements
4. Define common mineral processing and metallurgical terms.
5. Interpret technical reports.
6. Conduct basic mass balance calculations involved in several unit operations from mineral processing to hydrometallurgy.
7. Describe commonly used mineral and metallurgical processes used in Australia in the following industries:
    - Base metals processing (copper)
    - Precious metals processing (CIP process for gold recovery)
    - Coal Processing

2.3. Graduate Attributes

1. This course will contribute to the development of the following Graduate Attributes:
2. appropriate technical knowledge
3. having advanced problem solving, analysis and synthesis skills with the ability to tolerate ambiguity
4. ability for engineering design and creativity
5. awareness of opportunities to add value through engineering and the need for continuous improvement
6. being able to work and communicate effectively across discipline boundaries
7.

3. REFERENCE RESOURCES

3.1. Reference Materials

- Wills BA &Napier-Munn T J, 2006. Mineral Processing Technology, Butterworth-Heinemann, Oxford.
- Morrell S, Morrison R D & KojovieS(M)-5.9 einoralCwmMitiCwireis ir
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5. COURSE ASSESSMENT

5.1. Assessment Summary

The assessment will be based on the three components and final exam outlines in the below table.

All assessments are due 10.00am Sydney time on Monday of the week, unless otherwise indicated.

Assessment task	Due date	Release date	Weight	Assessment	Learning outcomes assessed
A1.0 & A2.0	15 Nov	29 Oct	25% each	Lab Report 1 : Grinding and Sieving Lab Report 2. Flotation A write-up of laboratory-based activities addressing key issues and data analysis Individual report	1,3,4,5,6

A3.0

Flotation kinetics

Title page

- Course title and course number
- Title of the experiment
- Student name & student number
- Email address
- Group number
- Date of submission
- Signed declaration of academic integrity

Abstract

- Summarise the aim of the work
- Summarise the procedure including key materials
- Summarise the results
- Summarise the key findings
- Co[illegible]

Recommendations

- Give suggestions for future experiments

Total: /5

References

- Cite all sources in the text wherever required
- Provide full bibliographic information
- Use the ACS style referencing (name, date)
  - http://www.lib.unimelb.edu.au/cite/acs/print.pdf

Total: /5

Writing and formatting

- Present original work (use your own words – do not copy from the lab manual or other sources)
- Insure the report is comprehensible
- Label all sections clearly and place them in the proper order
- Present all items in the appropriate section of the report (otherwise no point will be given)
- Use appropriate terminology
- Insure the report is free from spelling, grammatical or typographical mistakes
- Do not use the first or second person pronouns
- Number all equations, figures, and tables sequentially
- Describe/Refer to each figure and table in the text
- Use meaningful symbols (e.g. equation)
- Use superscript and subscript
- No scientific 'E' notation
- Submit your report as a pdf

Up to 5% may be deducted for not complying with the Writing and Formatting Requirements

During the laboratory session

- Follow instructions
- Submit experimental data as instructed
- Clean all spills
- Discard non-reusable personal protective equipment (PPE)
- Place unused PPE and their proper boxes

Up to 5% may be deducted for not complying with the Laboratory Session Requirements

may be required to re-submit an assignment or re-sit the final exam and may result in you failing the course. You would also have a NC (course not completed) mark on your transcript and would need to re-enroll in the course.

7.10 Students Needing Additional Support

The Student Equity and Disabilities Unit (SEADU) aims to provide all students with support and professional advice when circumstances may prevent students from achieving a successful university education. Take a look at their webpage: www.studentequity.unsw.edu.au/

7.11 Academic Honesty and Plagiarism

Your lecturer and the University will expect your submitted assignments are truly your own work. UNSW has very clear guidelines on what plagiarism is and how to avoid it. Plagiarism is using the words or ideas of others and presenting them as your own. Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. The University i0.5 (c)-o d-5

8. SCHOOL ASSESSMENT COVER SHEET

Course Convenor: