Missouri University of Science & Technology
Department of Mining and Nuclear Engineering
Mi Eng 352 Mineral Processing I (Flotation and Hydrometallurgy)
Summer 2014 – Online

Course Instructor:
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Skype: bayram.aksoy7

Lecture (2 hr) Notes will be posted in .ppt format

Course Outline:

<table>
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<tr>
<th>Week #</th>
<th>TOPICS</th>
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<tr>
<td>1</td>
<td>Reviewing the basics of Froth Flotation (principles, flotation machines, circuits, reagents: collectors, frothers, depressants, and activators)</td>
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<td>2&amp;3</td>
<td>Interfacial Phenomena—Reviews the chemical and physical reactions that occur at the solid-liquid interface. The text discusses the role of surface tension in separation processes, wetting phenomena, adsorption chemistry, electrical double-layer theories and their application in mineral separation, froth flotation, and colloidal stability.</td>
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<td>4</td>
<td>Principle of Sulfide, Oxide and Industrial Mineral Flotation</td>
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<td>Exam 1 - open book (Term Paper: Topic TBA)</td>
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<td>5&amp;6</td>
<td>Hydrometallurgy—Examines the intricate bridges that exist between hydrometallurgical processes and interfacial phenomena, solution thermodynamics, metallurgical kinetics, and reactor design.</td>
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<td>7&amp;8</td>
<td>It includes discussions on solution chemistry, electrochemistry, leaching principles, and metal separation from leach liquor.</td>
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<td>Exam 2 - open book</td>
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Note: It is advised that the syllabus can changed anytime in this summer semester.

Texts and references:

1) Fundamentals of Aqueous Metallurgy Author: Kenneth N. Han
Published by Society for Mining, Metallurgy, and Exploration - 2002
212 pages

2) Froth Flotation: A Century of Innovation, Editors: Maurice C. Fuerstenau, Graeme Jameson, Roe-Hoan Yoon, Published by Society for Mining, Metallurgy, and Exploration - 2007
904 pages, CD
Chapter: 14.5 Fundamental Principles of Froth Flotation

Course Objectives:
The objective if this course is to expose students to froth flotation and hydrometallurgy techniques in mining industries and how these techniques can be applied in today’s industries.

Prerequisites:
There are no prerequisites for this course.

Grading:
2 exams: Total 50% (There will be final test)
Assignments: Total 25%
Term Paper: 25% (Topic TBA)

Final Grades based on University policy:
A: 90-100%
B: 80-89%
C: 70-79%
D: 60-69%
F: <60%

All faculty are encouraged to provide with a course syllabus to emphasize the expectations that students must meet in order to be successful in the courses they are taking. In addition to the important information that is typically included in a course syllabus, all faculty are encouraged to include information about the following:

Academic Alert System: http://academicalert.mst.edu

All faculty are encouraged to utilize the online Academic Alert System. The purpose of the Academic System is to improve the overall academic success by improving communication among students, instructors and advisors; reducing the time required for students to be informed of their academic status; and informing students of actions necessary by them in order to meet the academic requirements in their courses.

Disability Support Services: http://dss.mst.edu

Any student inquiring about academic accommodations because of a disability should be referred to Disability Support Services so that appropriate and reasonable accommodative services can be determined and recommended. Disability Support Services is located in 204 Norwood Hall. Their phone number is 341-4211 and their email is dss@mst.edu. Instructors may consider increasing the following statement on their courses syllabus as a means of informing students about the services offered: “If you have a documented disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with me early in the semester. You will need to request that the Disability Services staff send a letter to me verifying your disability and specifying the accommodation you will need before I can arrange your accommodation.”

Academic Dishonesty: http://registrar.mst.edu/academicregs/index.html
Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the System’s Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage. Additional guidance for faculty, including a description of the process for dealing with issues related to academic dishonesty, is available on-line at http://ugs.mst.edu.