

COURSE SYLLABUS

1. **Program of Study** Bachelor of Science (Chemistry)
Faculty International College, Mahidol University
2. **Course Code** ICCH 457 ‘
Course Title Industrial Chemical Processes
3. **Number of Credits** 4 (4-0-8) (Lecture/lab/self-study)
4. **Prerequisites** ICCH 451
5. **Type of Course** Elective major course
6. **Semester / Academic Year:**
Third trimester 2006-2007
7. **Course Conditions:** Number of students between 20-30
8. **Course Description:**
Various industrial chemical processes and their industries; pulp and paper, soap and detergent, fermentation, potassium and nitrogen industries; field trips and practical exercises included.
9. **Course Objectives:**
After successful completion of this course, students should be able to
 - 9.1 understand different industrial processes in industrial chemistry;
 - 9.2 integrate the understanding of chemistry – organic, inorganic and analytical – to industrial applications;
 - 9.3 appreciate applications and importance of chemistry theories in industry.

10. Course Outline

Week	Topics	Hours			Instructor
		Lecture	Lab	Self-study	
1	Introduction and overview of chemical processing and chemical engineer	2	-	4	TBA
2	Coal chemicals	4	-	8	TBA
3	Fuel gases	4	-	8	TBA
4	Industrial gases	4	-	8	TBA
5	Industrial carbon	4	-	8	TBA
6	Soda ash, caustic soda, chlorine	4	-	8	TBA
7	Electrolytic industries	4	-	8	TBA

8	Phosphorus industries	4	-	8	TBA
9	Potassium industries	4	-	8	TBA
10	Nitrogen industries	4	-	8	TBA
11	Sulphur and sulphuric acid	4	-	8	TBA
12	Pulp and paper industries	2	-	4	TBA
	Total	44		88	

11. Teaching Methods:

- 11.1 Lecturing
- 11.2 Self-study
- 11.3 field trips, group discussion and presentation

12. Teaching Media:

Transparencies, handouts and lecturing from boards.

13. Measurement and Evaluation of Student Achievement

Student achievement is measured and evaluated by

- 13.1 the ability in understanding different industrial processes in industrial chemistry;
- 13.2 the ability to integrate the understanding of chemistry – organic, inorganic and analytical –to industrial applications;
- 13.3 the ability to appreciate applications and importance of chemistry theories in industry.

Student's achievement will be graded according to the College and University standard using the symbols: A, B+, B, C+, C, D+, D and F. Students must attend at least 80% of the total class hours of this course.

Assessment made from the set-forward criteria: student who gets 85% and above will have Grade A.

A suggestive minimum of;

Midterm examination 40%

Final 50%

Class participation 10%

13. Course Evaluation:

- 14.1 Students' achievement as indicated in number 13 above.
- 14.2 Students' satisfaction towards teaching and learning of the course using questionnaires.

14. References:

Heaton, C.A. **An Introduction to Industrial Chemistry**, 2nd Edition, UK: Blackie Academic & Professional; 1991.

Austin, G.T. **Shreve's Chemical Process Industries**, 5th Edition, USA: McGraw-Hill; 1984.

Green, M.M. and Wittcoff, H.A. **Organic Chemistry Principles and Industrial Practice** USA: Wiley-VCH; 2003.

Weissermel, K. and Arpe, H.-J. **Industrial Organic Chemistry**, 4th Edition, USA: Wiley-VCH; 2003.

16. Instructors:

TBA

17. Course Coordinator:

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