COURSE SYLLABUS

1. **Program of Study** Bachelor of Science (Chemistry)
   Faculty International College, Mahidol University

2. **Course Code** ICCH 211
   Course Title General Chemistry II

3. **Number of Credits** 4(4-0-8) (Lecture/Lab/Self-study)

4. **Prerequisite** ICCH 210 or ICCH 111 or ICNS 122

5. **Type of Course** Major required course

6. **Semester / Academic Year** Second trimester 2005-2006

7. **Course Conditions** Number of students between 20-30

8. **Course Description**
   Concepts of general chemistry: chemical and ionic equilibria; electrochemistry; periodic properties; periodic table; transition metals; nuclear chemistry.

9. **Course Objectives**
   After successful completion of this course, students should be able to
   9.1 understand the concepts and the relationship between solutions, kinetics, equilibrium, acid-base chemistries, entropy and free energy in thermodynamics, and electrochemistry;
   9.2 understand and identify the chemistries of s-, p- and d-blocks in the periodic table;
   9.3 apply the concepts to more advanced chemistry courses.

10. Course Outline

Week	Topics /Seminar	Hours			Instructor
		Lecture	Lab	Self-study	
1	Physical properties of solutions	2	-	4	Dr. Radchada Buntem
2	Chemical kinetics; rates and mechanism of reactions	8	-	16	
3	Chemical equilibrium	4	-	8	
4	Acids, bases and acid-base equilibria	6	-	12	
5	Equilibria in aqueous solutions: soluble salts and complex ions	6	-	12	
6	Thermodynamics: entropy and free energy	4	-	8	
7	Electrochemistry	4	-	8	
8	s-block elements	4	-	8	
9	p-block elements	2	-	8	
10	d-Block elements and Coordination chemistry	4	-	8	
	Total	44		88	

11. **Teaching Methods**
    11.1 Lecturing
    11.2 Self-study
    11.3 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 the concepts and the relationship between solutions, kinetics, equilibrium, acid-base chemistries, entropy and free energy in thermodynamics, and electrochemistry;
    13.2 the ability in understanding and identifying the chemistries of s-, p- and d-blocks in the periodic table;
    13.3 the ability to apply the concepts to more advanced chemistry courses.

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 90% and above will have Grade A.
A suggestive minimum of;

Midterm examination	40%
Final examination	50%
Quizzes	10%

14. **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.

15. **References**

Hill, J.W. and Petrucci, R.H. **General Chemistry an integrated approach** 3rd Edition, USA: Prentice Hall; 2002.

Chang, R. **Chemistry** 6th Edition, USA: McGraw-Hill; 1998.

Atkin, P.W. **Atkin's Molecules** 2nd edition, UK: Cambridge University Press; 2003.

16. Instructors

Dr. Radchada Buntem

17. Course Coordinator

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