

## COURSE SYLLABUS

**Name of Curriculum:** Bachelor of Science (Biological Science)  
International College, Mahidol University

**Course Code:** ICNS 111      **Course Title:** General Chemistry

**Number of Credits:** 4 Credits (**Lecture/lab**) (3-2)

**Prerequisites:** None

**Type of Course:** Core science course for Biological Sciences Majors

**Semester / Academic Year:**  
First trimester 2005-2006

### Course Description:

The course covers the atomic structure and chemical bonding; gases, solids, liquids and solutions stoichiometry; chemical thermodynamics and kinetics; chemical equilibria; acid and bases; acid-base equilibria and buffers; practical exercises include general techniques in chemistry, simple qualitative and quantitative analysis and acid-base titration.

### Course Objectives:

Essential and basic concepts of chemistry will be covered in this course and so enabling the students to be well acquainted with the important chemical concepts and the necessary laboratory techniques of general chemistry.

### Course Outline

Week		Topics		Instructor	
		Hour	Lab	Hour	
1	Atomic structure	2	Lab safety	2	
2	Chemical bonding, energy	4	Significant figures, measurements	2	
3	Chemical bonding, energy	4	Elements, compounds and mixtures	2	
4	Stoichiometry	4	Elements, compounds and mixtures	2	
5	Gases	4	Titration	2	
6	Solids	4	Acid, base titration	2	
7	Liquids and solutions	4	Acid, base titration	2	
8	Colligative properties	4	pH, hydrolysis, buffers	2	
9	Thermochemistry	4	pH, hydrolysis, buffers	2	

10	Acids and bases	4	pH, hydrolysis, buffers	2	
11	Acid, base equilibria	4			
12	Acid, base equilibria	2			
	Total	44		20	

**Teaching Methods:**

Lecturing, laboratory practices

**Teaching Media:**

Transparencies, handouts and lecturing from boards.

**Course Achievement:**

Assessment made from the set-forward criteria: student who gets 90% and above will have Grade A.

**Course Evaluation:**

A suggestive minimum of;

Midterm examination 30%

Final examination 40%

Quizzes 10%

Laboratory performance 20%

**References:**

Raymond Chang, General Chemistry the essential concepts 3<sup>rd</sup> Edition, McGraw Hill, New York 2003.

P.W. Atkin, Atkin's Molecules, 2<sup>nd</sup> edition, Cambridge University Press, 2003.

Course manual

Laboratory practical manual

**Instructors:**

TBA.

**Course Coordinator:**

TBA.