COURSE SYLLABUS

1. **Name of Curriculum** Bachelor of Science (Chemistry)
   Faculty International College, Mahidol University

2. **Course Code** ICCH 456
   Course Title Nuclear and Radiochemistry

3. **Number of Credits** 4 (3-2-7)Credits **(Lecture/Lab/Self-study)**

4. **Prerequisites** ICCH 221

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**:
   Concept of nuclear and radiochemistry; law of radioisotope decay; reaction between nuclear radiation and matter; detection of radiation and dose determination; hazard from radiation; the application of radioisotope in chemistry; field trips and practical exercises included.

9. **Course Objectives**:
   After successful completion of this course, students should be able to
   9.1 understand the concept of nuclear and radiochemistry;
   9.2 identify of the methods of detection, hazard and dose determination;
   9.3 identify of the application of radioisotope in chemistry.

10. Course Outline

Week	Topics	Hours			Instructor
		Lecture	Lab	Self-study	
1	Introduction to types	2	-	4	Dr. Roppon Picha
2	Radioisotope decay	4	-	8	
3	Radioisotope decay	2	2	5	
4	Reaction between nuclear radiation and matter	4	-	8	
5	Reaction between nuclear radiation and matter	2	2	5	
6	Detection of radiation	2	2	5	
7	Detection of radiation	4	-	8	
8	Dose determination	2	2	5	

9	Dose determination	4	-	8	
10	Hazard from radiation	2	2	5	
11	Application in chemistry	4	-	8	
12	Application in chemistry	2	-	4	
	Total	34	10	73	

11. **Teaching Methods**:
Lecturing

12. **Teaching Media**:
Transparencies, handouts and lecturing from boards.

13. **Course Achievement**:
Student achievement is measured and evaluated by
13.1 the ability in understanding the concept of nuclear and radiochemistry;
13.2 the ability to identify the methods of detection, hazard and dose determination;
13.3 the ability to identify the application of radioisotope in chemistry.
Student's achievement will be graded according to the College and Univeristy 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 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**:
Choppin, G.R., Rydberg, J. and Liljenzin, J.-O. **Radiochemistry and Nuclear Chemistry**, 3rd Edition, USA: Butterworth-Heineman, 2002.

16. Instructors:
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17. Course Coordinator:
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