

Course Syllabus

1. **Program of Study** Bachelor of Science (Applied Mathematics)
College Mahidol University International College
2. **Course Code** ICMA 423
Course Title Set Theory
3. **Number of Credits** 4(4-0-8) (Lecture-Lab-Self study)
4. **Prerequisite** None
5. **Type of Course** Elective course
6. **Session / Academic year** 1st, 2nd or 3rd Trimester/every academic year
7. **Course Conditions** Maximum number of students is 30 per class.

8. Course Description

Historical introduction, classes and sets, functions, relations, partially orders classes, axiom of choice and related principle, natural numbers, finite and infinite sets, arithmetic of cardinal numbers, arithmetic of ordinal numbers.

9. Course Objectives

After successful completion of this course, students will be able to :

- 9.1 develop basic ideas and get better understanding about the set theory;
- 9.2 practically apply the set theory to proof and solve problems of more advances topics in the area.

10. Course Outline

Week	Topics	Hours			Instructor
		Lecture	Lab	Self study	
1	Historical introduction, Building sentences	4	-	8	
2	Classes and sets	4	-	8	
3	Relations	2	-	4	
3-4	Functions	4	-	8	
4-5	Partially ordered classes	4	-	12	
5	Midterm Exam	2	-	4	
6	Lattice and Well-ordered classes	4	-	8	
7	Axiom of choice and related principles	4	-	8	
8	The natural numbers	4	-	8	
9	Finite and infinite sets	4	-	8	
10	Arithmetic of cardinal numbers	4	-	8	
11	Arithmetic of ordinal numbers	4	-	8	
Final Examination					
Total		44	-	88	

11. Teaching Methods

Lecturing and problem solving.

12. Teaching Media

Text and handouts.

13. Measurement and Evaluation of Student Achievement

Student achievement is measured and evaluated by

- 13.1 The ability to explain the concept of the set theory;
- 13.2 The ability to develop basic ideas of the set theory
- 13.3 The ability to practically apply the set theory to proof and solve problems of more advanced topics in the area

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.

Ratio of mark

Homework	20%
Midterm examination	40%
Final examination	40%

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. Reference

- 15.1 Pinter CC. Set Theory: Addison-Wesley Publishing Company, Inc; 1971.

16. Instructors

Assistant Professor Pannee Putthapiban

17. Course Coordinator

Assoc. Prof. Dr. Chinda Achariyakul