Course Syllabus

1. **Program of Study**   Bachelor of Science (Applied Mathematics)
   College   International College, Mahidol University

2. **Course Code**   ICMA 425
   Course Title   Introduction to Topology

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

4. **Prerequisite**   None

5. **Type of Course**   Elective major course

6. **Session / Academic Year** 2nd or 3rd Trimester/every academic year.

7. **Course Conditions**   Maximum number of students is 30 per class.

8. **Course Description**
   Topological spaces, closed sets, open sets, homeomorphisms, continuous functions, metric topology, connected spaces, compact spaces, countability axioms, separation axioms, normal spaces, Urysohn lemma, Urysohn metrization theorem.

9. **Course Objectives**
   The course is designed to introduce students to another important foundation of advanced mathematics. After successful completion of this course, students will have a better picture of what mathematics is about. The subject will serve as a background for future study in analysis, geometry, and algebraic topology.

10. **Course Outline**

Week	Topics	Hours			Instructor
		Lecture	Lab	Self study	
1	Topological spaces, basis for a topology	4	-	8	
2	The order topology, the product topology on $X \times Y$, the subspace topology	2	-	4	
2-3	Closed sets and limit points, Hausdorff spaces	4	-	8	
3-4	Continuous functions, homeomorphisms	4	-	8	
4-5	Product topology, metric topology	4	-	8	
5-6	Review, **Midterm Exam**	4	-	8	
6-7	Connected spaces, connected subspaces of	4	-	8	

	the real line				
7-8	Compact spaces, compact subspaces of the real line	4	-	8	
8-9	Limit point compactness, local compactness	4	-	8	
9-10	Countability axioms, separation axioms	4	-	8	
10-11	Normal spaces, Urysohn lemma, Urysohn metrization theorem	4	-	8	
11	Review for final	2	-	4	
Final ExamINATION					
	Total	**44**		**88**	

11. Teaching Methods

Lecturing and problem solving.

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 to explain the important foundation of advanced Mathematics.
  13.2 The ability to use the knowledge obtained as a background for future study
      in analysis, geometry, and algebraic topology.
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
      Assignments and quizzes (if any)   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 Munkres J. Topology: Prentice Hall; 1999.

16. Instructor

Assistant Professor Pannee Putthapiban

17. Course Coordinator

Assoc. Prof. Dr. Chinda Achariyakul