Course Syllabus

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

2. **Course Code**   ICMA 212
   Course Title   General Mathematics II

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

4. **Prerequisites**   ICMA 211 or equivalent

5. **Type of Course**   Core science course.

6. **Session / Academic Year**   Trimester 2/ every academic year

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

8. **Course Description**

   Three-dimensional space; rectangular, spherical and cylindrical coordinates; functions of several variables; partial derivates; multiple integrals; vector calculus; line and surface ingrals of vector functions; Green's theorem; the divergence theorem; Stoke's theorem.

9. **Course Objectives**

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

   9.1 understand the three-dimensional space, rectangular, spherical and cylindrical coordinates.

   9.2 understand the functions of several variables; partial derivates; multiple integrals

   9.3 understand the vector calculus; line and surface ingrals of vector functions

   9.4 understand Green's theorem; the divergence theorem; Stoke's theorem

10. **Course Outline**

Week	Topics	Hours			Instructor
		Lecture	Lab	Self study	
1-2	Three-dimensional space; rectangular, spherical and cylindrical coordinates	8	-	16	TBA
3-4	Vector calculus; line and surface integrals of vector functions	8	-	16	
5-7	Functions of several variables, partial derivatives	8	-	16	
8-9	Multiple integrals	8	-	16	
10	Green theorem	4	-	8	
11	The divergence theorem; Stoke's theorem	4	-	8	
Final Examination					
Total		**44**	**-**	**88**	

11. Teaching Method
Lectures

12. Teaching Media
Texts and handouts

13. Measurement and Evaluation of Student Achievement
Student achievement is measured and evaluated by
13.1 The ability to explain the three-dimensional space, rectangular, spherical and cylindrical coordinates.
13.2 The ability to explain the functions of several variables; partial derivates; multiple integrals.
13.3 The ability to explain the vector calculus; line and surface ingrals of vector functions.
13.4 The ability to describe Green's theorem; the divergence theorem; Stoke's theorem
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 and quizzes   15%
Test 1   25%
Test 2   25%
Final exam   35%

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

15.1 Anton, Howard. Calculus. Wiley and sons, Inc.
15.1 Anton H. Calculus: Wiley and sons, Inc.
15.2 Stewart, James.Calculus. Brooks/Cole.
15.2 Stewart J. Calculus: Brooks/Cole.
15.3 Thomas, George B and Finney, Ross. Calculus and Analytic Geometry. Addison-Wesley.
15.3 Thomas GB, Finney R. Calculus and Analytic Geometry: Addison-Wesley.

16. Instructors
Assoc. Prof. Dr. Chinda Achariyakul

17. Course Coordinator
-