# Course Syllabus

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

**2. Course Code** ICMA 213
**3. Course Title** Calculus II

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

**5. Prerequisites** ICNS 102 or equivalent

**6. Course Description**

Derivatives of logarithmic and exponential functions, techniques of integration, improper integrals and L'Hopital's rules, applications of derivatives and integration, partial derivatives, infinite series, polar coordinates, parametric equations.

**7. Course Objectives**

At the completion of this course, the students will be able to

7.1 integrate using a variety of techniques;
7.2 understand the concepts of improper integrals, infinite series, etc;
7.3 apply a combination of mathematical skills and techniques in problem solving.

**8. Course Outline**

| Week | Topics | Hours | | | Instructor |
|---|---|---|---|---|---|
| | | Lecture | Lab | Self study | |
| 1-2 | Logarithmic and exponential functions | 8 | - | 16 | |
| 3-5 | Techniques of integration and applications | 12 | - | 24 | |
| 6-7 | Improper Integrals and L'Hopital's Rule | 8 | - | 16 | |
| 8 | Partial Derivatives | 4 | - | 8 | |
| 9-10 | Infinite series | 8 | - | 16 | |
| 11 | Polar coordinates | 4 | - | 8 | |

| | | | | | |
|---|---|---|---|---|---|
| 12 | Parametric equations | 4 | - | 8 | |
| | Final Examination | | | | |
| **Total** | | **48** | | **96** | |

**9. Teaching Method**

Lectures

**10. Teaching Media**

Texts and handouts

**11. Text**

Anton, Howard. Calculus. Wiley and sons, Inc.

**12. Course evaluation**

Grading will be based on the following suggestive criteria:

| | |
|---|---|
| Homework and quizzes | 15% |
| Test 1 | 20% |
| Test 2 | 20% |
| Term paper | 10% |
| Final exam | 35% |

**13. References**

15.1 Stewart, James. Calculus. Brooks/Cole.

15.2 Thomas, George B and Finney, Ross. Calculus and Analytic Geometry. Addison-Wesley.

**14. Instructors**

Assoc. Professor Dr. Chinda Tangwongsan

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