# Course Syllabus

1. **Name of Curriculum** Bachelor of Science Program in Environment
   **Faculty/Institute/College** Mahidol University International College, Faculty of Science, Faculty of Environment and Resource Studies, Mahidol University
2. **Course Code** ICEN 401 **Course Title** Applied Mathematics for Environmental Studies
3. **Number of Credits** 4 **(Lecture/Lab)** (4-0)
4. **Prerequisite** None
5. **Type of Course** Elective
6. **Trimester / Academic Year**
   First / 2005
7. **Course Description**
   The use of quantitative methods for decision in environmental problems. Mathematical reasoning and the analytical tools are used in resource management and environmental planning. Operation research, simulation and environmental monitoring techniques are covered.
8. **Course Objectives**
   To understand and apply quantitative methods for making decision in environmental problems.
9. **Course Outline**

| Week | Topic | | Instructor |
|---|---|---|---|
| | **Lecture** | **Hour** | |
| 1 | Course Introduction | 4 | Asst.Prof. Kobkaew |
| 2 | Operation Research | 4 | Asst.Prof.Saranya |
| 3 | Transportation Problem | 4 | Asst.Prof.Saranya |
| 4 | Assignment Problem | 4 | Asst.Prof.Saranya |
| 5 | Forecasting Model | 4 | Dr.Vimut |
| 6 | Forecasting Model | 4 | Dr.Vimut |
| 7 | Decision Making Concept | 4 | Dr.Vimut |
| 8 | Linear Programming | 4 | Asst.Prof.Wimon |
| 9 | Linear Programming | 4 | Asst.Prof.Wimon |
| 10 | Simulation Model | 4 | Dr.Vimut |
| 11 | Simulation Model | 4 | Dr.Vimut |
| | **Total** | **44** | |

10. **Teaching Method**
    1. Lecture
    2. Practical Exercise
    3. Self-Study
11. **Teaching Media**
    1. Texts and Teaching Materials
    2. Transparencies
    3. Power Point Presentation
12. **Course Achievement**
    Assessment made from the set-forward criteria. Student who gets 85% up, will have Grade A.

**13. Course Evaluation**

1. Report 20%
2. Final Examination 80%

**14. References**

1. Anderson T.W. 1971. The Statistical Analysis of Time Series. New York, Wiley.
2. Draper N.R. and H. Smith. 1981. Applied Regression Analysis (2 nd ed.) New York, Wiley.
3. Farnum N.R. and L.W. Stanton. 1989. Quantitative Forecasting Methods. Boston, PWS-Kent.
4. Heinrich W. Guggenheimer. Mathematics for Engineering and Science (Applied Math Series).
5. John Meyer (Editor).Techniques of Transport Planning Systems Analysis and Simulation Models

**15. Instructors**

Asst.Prof.Saranya Sucharitakul
Asst.Prof.Dr.Wimon Sonchaem
Dr.Vimut Prasertpunt

**16. Course Coordinator**

Asst.Prof. Dr. Kobkaew Manomaipiboon