I. Objective
The main objective of this course is innovative uses of personal computer in economic analysis and model building techniques. Students will acquaint themselves with the nature and properties of economic models by trial and error through individualized, computer generated exercises. The course contents may be divided into three parts: Part I. Microcomputers and Lotus 1-2-3; Part II. Economic Statistics; Part III. Input-Output Analysis, Linear Programming and Other Applications. The exact contents and emphasis of the course may differ from year to year depending on the availability of software packages. This course will be offered in spring semesters.

II. Prerequisites
There are two prerequisites for this course. One is Econ. 4808/5808: Introduction to Mathematical Economics, which roughly covers the topics in the first 12 chapters of Chiang, A. Fundamental Methods in Mathematical Economics, McGraw-Hill, 3rd ed., or Math 1300: Calculus. Another is Econ. 3070: Intermediate Microeconomics. Since the number of computers is limited, these two prerequisites will be strictly observed.

Previous knowledge of microcomputers or software is not required. However, you should have enough time to practice to familiarize yourself with the computer and the software package within relatively short period of time. This also takes constant efforts and great determination, which not every one has.

Students who are taking for graduate credits (Econ 5838) are required to write a term paper at the end of the semester. The topic should be related to the course, in particular, the spreadsheet macro programming method should be used. Some of the topics in Input-output Analysis are attached to this course outline. Graduate students should also answer an extra question in the final examination (This extra question will be extra credit for the undergraduate students).

III. Facilities
The computer we use is IBM-PS/2 with 640K of memory and the software program is Lotus 1-2-3, version 2.01, by Lotus Development Cooperation.

The class will be held in the Engineering Center Class Room (ECCR) 2-3. There are 19 IBM PS/2 Model 55SX’s in the room, each with a monochrome Monitor and a graphic board. Available software is installed on the 20mb hard drive.

Lotus 1-2-3 is installed in the microcomputers located in CEI-4, CR2-1, CR2-32 in the Engineering Center. They are also available in Business Room 104 and 107, Norlin Library room 310 and room 350. There are about 30 computing sites throughout the campus. When they are not in use by classes, the facilities are available for individuals.

Reference books and periodicals on Lotus 1-2-3 and other spreadsheet programs are available at the Math/Physics Library and the Business Library.

IV. Textbooks
There are two required textbooks. The Lecture Notes will be available later at Kinko’s.


PLEASE COME IN AND TALK WITH YOUR INSTRUCTOR ABOUT ANY PROBLEM RELATED TO THE COURSE. ESPECIALLY IF YOU HAVE WORKED HARD, LET THE INSTRUCTOR KNOW.

Office: Econ. 103  
Office Hours: TR 2:00-3:15 (or immediately after the class)  
Office Telephone: 492-7908

COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Week of</th>
<th>Text</th>
<th>Chapter</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/18</td>
<td>Duffy</td>
<td>1</td>
<td>Introduction to DOS</td>
</tr>
<tr>
<td>1/23</td>
<td>Duffy</td>
<td>2</td>
<td>Fundamentals of Spreadsheets and Lotus 1-2-3</td>
</tr>
<tr>
<td>1/30</td>
<td>Duffy</td>
<td>3</td>
<td>More on Ranges, Copying, Formatting, Printing, and Functions</td>
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<tr>
<td>2/6</td>
<td>Duffy</td>
<td>4</td>
<td>Worksheet Enhancement</td>
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**Part I: Spreadsheets**

**Part II: Economic Statistics**

<table>
<thead>
<tr>
<th>Week of</th>
<th>Text</th>
<th>Chapter</th>
<th>Topic</th>
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<tbody>
<tr>
<td>2/13</td>
<td>Duffy</td>
<td>5</td>
<td>Table and Sensitivity Analysis</td>
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<tr>
<td>2/20</td>
<td>Duffy</td>
<td>6</td>
<td>Graphing the Data</td>
</tr>
<tr>
<td>2/22</td>
<td>Duffy</td>
<td>7</td>
<td>Statistical Function for Data Base</td>
</tr>
<tr>
<td>3/6</td>
<td>Duffy</td>
<td>8</td>
<td>Introduction to Macro Programming</td>
</tr>
<tr>
<td>3/13</td>
<td>LN</td>
<td>1</td>
<td>Regression Analysis</td>
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**Part III: Input-Output Analysis**

<table>
<thead>
<tr>
<th>Week of</th>
<th>Text</th>
<th>Chapter</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>3/20</td>
<td>LN</td>
<td>2</td>
<td>Matrix Algebra on Spreadsheet</td>
</tr>
<tr>
<td>3/27</td>
<td>Spring Break</td>
<td></td>
<td></td>
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<tr>
<td>4/3</td>
<td>LN</td>
<td>3</td>
<td>Input-Output Analysis</td>
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<tr>
<td>4/10</td>
<td>LN</td>
<td>4</td>
<td>Multiplier Analysis</td>
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<tr>
<td>4/17</td>
<td>LN</td>
<td>5</td>
<td>Linear Programming</td>
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<tr>
<td>4/24</td>
<td>LN</td>
<td>6</td>
<td>The Simplex Method</td>
</tr>
<tr>
<td>5/1</td>
<td>LN</td>
<td></td>
<td>FINAL EXAM WEEK (40%, COMPREHENSIVE EXAM)</td>
</tr>
</tbody>
</table>

NOTES:

1. Test dates are firm. Please prepare long before the test.
2. If you are going to miss, or have missed the test, hand in a written statement to the instructor. Otherwise, a ZERO grade will be given to the test at the end of the semester.
3. Homework - handed in on time: 10 points  
late before grading: 7 points  
late after grading: 5 points
4. 10% of total homework grades will be added to the total grades.
SOME REFERENCES:

PART I. MICROCOMPUTERS AND LOTUS 1-2-3


PART II. INPUT-OUTPUT ANALYSIS


Bulmer-Thomas, V., Input-Output Analysis in Developing Countries: Sources, Methods and Applications, Wiley, 1982.


PART III. CALCULUS


