Universitas Islam Indonesia

Faculty of Economics

INTERNATIONAL PROGRAM

Syllabus
Modeling Economics

Subject : Modeling Economics
Credits : 3 Credits

Description

This course is the continuation of Business and Economics Mathematics. What was not discussed in the previous course will be discussed in this course, such as matrix and linear programming. Besides, modeling economics will also learn calculus and algebra as the base. It aims to give comprehension of how economic phenomenon can be seen in mathematics.

Learning Outcomes

- Mastering the theory of macroeconomics, microeconomics and applied economics.
- Mastering the concept, methods, and tool of economic analysis.
- Being able to study and build economic model by using scientific methods and tools of economic analysis.

Topics

1. Algebra and calculus
2. Derivation of demand function
3. Derivation of supply function
4. Model of Cournot's Duopoly Competition
5. Model of national revenue
6. Model of IS-LM macroeconomics
7. Model of 4 sectors macroeconomics
8. Matrix
9. Cramer's rule
10. Inverse Matrix
11. Matrix Application: Input-Output
12. Linear programming: Graphic Method
13. Linear programming: Simplex Method
14. Dual Theorems and linear programming application: Data Envelopment Analysis.

References

Chiang & Wainwright. (2005). *Fundamental Methods of Mathematical Economics*. 4th Edition, McGraw-Hill

Dumairy. (2016). *Matematika terapan untuk bisnis dan ekonom* (2nd ed). Yogyakarta: BPFE, UGM.

Rosser, M., (2003), *Basic mathematics for economics* (2nd ed). Routledge.