

## Content

| Course Code | Course Name          | Semester | Theory | Practice | Lab | Credit | ECTS |
|-------------|----------------------|----------|--------|----------|-----|--------|------|
| EC 508      | Differential Markets | 1        | 3      | 0        | 0   | 3      | 6    |

|                        |  |
|------------------------|--|
| Prerequisites          |  |
| Admission Requirements |  |

|                         |   |
|-------------------------|---|
| Language of Instruction | Turkish   |
| Course Type             | Elective  |
| Course Level            | Masters Degree  |
| Objective               | The course provides first with a matlab tutorial to enable then students to use computational methods in asset pricing.   |
| Content                 | The course necessitates the use of matlab, the first part of the course will be devoted to learning matlab. The second part of the course initiates option pricing preliminaries, asset price model with the appropriate computational techniques.  |
| References              | Desmond J. Higham, Nicholas J. Higham MATLAB Guide 2nd Edition SIAM: Society for Industrial and Applied Mathematics; 2 edition (March 2005)<br>Desmond J. Higham An Introduction to Financial Option Valuation: Mathematics, Stochastics and Computation Cambridge University Press; 1 edition (April 19, 2004) |

## Theory Topics

| Week | Weekly Contents                                       |
|------|---|
| 1    | Introduction to Matlab                                |
| 2    | Basic concepts-Variables-Matrices, vectors and series |
| 3    | Loops-Functions                                       |
| 4    | Input-Output  |
| 5    | Graphics  |
| 6    | Linear Algebra  |
| 7    | Solutions-Optimisation                                |
| 8    | Options   |
| 9    | Option valuation preliminaries                        |
| 10   | Random variables-Computer simulation                  |
| 11   | Asset price movement                                  |
| 12   | Asset price model I                                   |
| 13   | Asset price model II                                  |