



T.C.

ESKİŞEHİR OSMANGAZİ ÜNİVERSİTESİ

FACULTY OF SCIENCES

MATHEMATICS AND COMPUTER SCIENCES DEPARTMENT



## COURSE INFORMATION FORM

| Course Name | Course Code |
|-------------|-------------|
| Maple I     |             |

| Semester | Number of Course Hours per Week |          | Credit | ECTS |
|----------|---------------------------------|----------|--------|------|
|          | Theory                          | Practice |        |      |
| 7        | 2                               | 2        | -      | 6    |

| Course Category (Credit) |                      |        |                   |        |
|--------------------------|----------------------|--------|-------------------|--------|
| Basic Sciences           | Engineering Sciences | Design | General Education | Social |
| X                        |                      |        |                   |        |

| Course Language | Course Level  | Course Type |
|-----------------|---------------|-------------|
| Turkish         | Undergraduate | Elective    |

|                                 |                                                                                                                          |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Prerequisite(s) if any</b>   |                                                                                                                          |
| <b>Objectives of the Course</b> | The aim of this course is to introduce the Mathematical Program, MAPLE-V, and solving Some Basic Math Problems in MAPLE. |
| <b>Short Course Content</b>     | An Introduction To Maple<br>Maple and Mathematics,<br>Concepts of Elementary Mathematics in Maple (Calculus, Geometry).  |

| Learning Outcomes of the Course                                                                                                                 | Contributed PO(s) | Teaching Methods * | Measuring Methods ** |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------|----------------------|
| 1 Solving Math Problems with Maple.                                                                                                             | 1,2,6             | 1,2,6              | A                    |
| 2 To ensure the development of computer software using information about Maple.                                                                 | 1,2,6             | 1,2,6              | A                    |
| 3 Develops ability to analyze and solve problems encountered                                                                                    | 3,4,5             | 2,10               | A                    |
| 4 Analytical thinking skills develop and the ability to make individual and independent decisions develops.                                     | 3,4,5             | 10,11              | A                    |
| 5 The ability to analyze and interpret data, apply interpretation to other data, and apply this information in a computer environment develops. | 13                | 10,11              | A                    |
| 6                                                                                                                                               |                   |                    |                      |
| 7                                                                                                                                               |                   |                    |                      |
| 8                                                                                                                                               |                   |                    |                      |

\*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

\*\*Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

|                                  |                                                                                                                |
|----------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Main Textbook</b>             | Gains the ability of research in Mathematics and Learns “How to use the MAPLE ?”.                              |
| <b>Supporting References</b>     | 1-) Maple V : B. W. Char; K. O. Geddes; G. L. Gonnet – Springer Verlag<br>2-) Maple ve Matematik : Basri Çelik |
| <b>Necessary Course Material</b> | Computer and Maple software                                                                                    |

| <b>Course Schedule</b> |                        |
|------------------------|------------------------|
| <b>1</b>               | What is the MAPLE?     |
| <b>2</b>               | Introduction to MAPLE. |
| <b>3</b>               | MAPLE and Mathematics  |
| <b>4</b>               | MAPLE and Mathematics  |
| <b>5</b>               | MAPLE and Mathematics  |
| <b>6</b>               | MAPLE and Mathematics  |
| <b>7</b>               | MAPLE and Mathematics  |
| <b>8</b>               | Mid-Term Exam          |
| <b>9</b>               | MAPLE and Mathematics  |
| <b>10</b>              | MAPLE and Mathematics  |
| <b>11</b>              | MAPLE and Mathematics  |
| <b>12</b>              | MAPLE and Mathematics  |
| <b>13</b>              | MAPLE and Mathematics  |
| <b>14</b>              | MAPLE and Mathematics  |
| <b>15</b>              | MAPLE and Mathematics  |
| <b>16,17</b>           | Final Exam             |

| <b>Calculation of Course Workload</b>                       |                            |                    |                              |
|-------------------------------------------------------------|----------------------------|--------------------|------------------------------|
| <b>Activities</b>                                           | <b>Number</b>              | <b>Time (Hour)</b> | <b>Total Workload (Hour)</b> |
| Course Time (number of course hours per week)               | 14                         | 4                  | 56                           |
| Classroom Studying Time (review, reinforcing, prestudy,...) | 14                         | 4                  | 56                           |
| Homework                                                    | 5                          | 3                  | 15                           |
| Quiz Exam                                                   |                            |                    |                              |
| Studying for Quiz Exam                                      |                            |                    |                              |
| Oral exam                                                   |                            |                    |                              |
| Studying for Oral Exam                                      |                            |                    |                              |
| Report (Preparation and presentation time included)         |                            |                    |                              |
| Project (Preparation and presentation time included)        |                            |                    |                              |
| Presentation (Preparation time included)                    |                            |                    |                              |
|                                                             |                            |                    |                              |
|                                                             |                            |                    |                              |
| Mid-Term Exam                                               | 1                          | 2                  | 2                            |
| Studying for Mid-Term Exam                                  | 1                          | 20                 | 20                           |
| Final Exam                                                  | 1                          | 2                  | 2                            |
| Studying for Final Exam                                     | 1                          | 30                 | 30                           |
|                                                             | <b>Total workload</b>      |                    |                              |
|                                                             | <b>Total workload / 30</b> |                    |                              |
|                                                             | <b>Course ECTS Credit</b>  |                    | <b>6</b>                     |

| Evaluation           |            |
|----------------------|------------|
| <b>Activity Type</b> | <b>%</b>   |
| Mid-term             | 30         |
| Quiz                 | 20         |
| Homework             |            |
| Bir öge seçin.       |            |
| Bir öge seçin.       |            |
| <b>Final Exam</b>    | <b>50</b>  |
| <b>Total</b>         | <b>100</b> |

| RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low) |                                                                                                                                                                                 |              |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| NO                                                                                                                                      | PROGRAM OUTCOME                                                                                                                                                                 | Contribution |
| 1                                                                                                                                       | The ability to apply knowledges of Mathematics and Computer Sciences,                                                                                                           | 5            |
| 2                                                                                                                                       | To have sufficient theoretical and practical knowledge of Mathematics at international level,                                                                                   | 5            |
| 3                                                                                                                                       | The ability of describing, modelling and solving of mathematical problems at Mathematics and related subjects,                                                                  | 5            |
| 4                                                                                                                                       | The skill to solve and design a problem process in accordance with a defined target,                                                                                            | 5            |
| 5                                                                                                                                       | Skills to analyze data, interpret and apply to other datum and using these data on computer,                                                                                    | 4            |
| 6                                                                                                                                       | The skill to use the modern techniques and computational tools needed for mathematical applications,                                                                            | 5            |
| 7                                                                                                                                       | The skill to make team work within the discipline and interdisciplinary,                                                                                                        | 2            |
| 8                                                                                                                                       | The ability to improve oneself by following the developments on other modern, scientific and technological subjects as well as Mathematics and Computer Sciences,               | 2            |
| 9                                                                                                                                       | The skill to communicate orally and in written way, in a clear and concise manner by having individual work skills and ability to independently decide and analytical thinking, | 4            |
| 10                                                                                                                                      | The skill to have professional and ethical responsibility,                                                                                                                      | 2            |
| 11                                                                                                                                      | The skill to have consciousness for quality issues and scientific research,                                                                                                     | 3            |
| 12                                                                                                                                      | The skill to be sensitive to environmental issues related with problems and development of living area and consistent in the social relations,                                  | 1            |
| 13                                                                                                                                      | Ability to solve problems in the working life faced to find an appropriate algoritms via mathematical modeling and to write computer programs,                                  | 5            |
| 14                                                                                                                                      | The skill to developed design of software systems at different complex levels,                                                                                                  | 3            |
| 15                                                                                                                                      | The credence of necessity of life-long learning and ability to apply the formation long-life learning.                                                                          | 1            |

| LECTUTER(S)         |                                       |  |  |  |
|---------------------|---------------------------------------|--|--|--|
| <b>Prepared by</b>  | Assoc. Prof. Dr.<br>Ahmet Faruk ASLAN |  |  |  |
| <b>Signature(s)</b> |                                       |  |  |  |

**Date:**06.06.2024