

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**



|  |  |  |  |
| --- | --- | --- | --- |
| **DEPARTMENT** |  **COMPUTER ENGINEERING (PhD)** | **SEMESTER** |   |

|  |
| --- |
| **COURSE** |
| **CODE** |        | **TITLE** |  Advanced algorithms  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **LEVEL** | **HOUR/WEEK** | **Credit** | **ECTS** | **TYPE** | **LANGUAGE** |
| **Theory** | **Practice** | **Laboratory** |
|  **PhD** | 3  |    |    | 3  | 7,5 | COMPULSORY( x ) | ELECTIVE(   ) | Turkish  |
| **CREDIT DISTRIBUTION** |
| **Basic Science** | **Basic Engineering** | **Knowledge in the discipline****[if it contains considerable design content, mark with (√)]** |
|   | x |      |
| **ASSESSMENT CRITERIA** |
| **SEMESTER ACTIVITIES** | **Evaluation Type** | **Number** | **Contribution** **( % )** |
| Midterm |   |    |
| Quiz |   |    |
| Homework |   |    |
| Project |   |    |
| Report |   | 50 |
| Seminar |   |    |
| Other (………) |   |    |
| **Final Examination** | 50 |
| **PREREQUISITE(S)** |  Calculus Algorithms and complexities |
| **SHORT COURSE CONTENT** |  interpolation, curve approximation,lineer programlama,prime algorithms and approximation algorithms |
| **COURSE OBJECTIVES** |  writing and designing algorithms in various fields  |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** |  gaining ability to wtite program  |
| **LEARNING OUTCOMES OF THE COURSE** |  leraning tecniques to write algorithms in some fields  |
| **TEXTBOOK** |  Advanced Algorithms Lecture Notes Periklis A. Papakonstantinou  |
| **OTHER REFERENCES** |  1Curves and Surfaces for Computer Graphics, David Soloman2 Introduction to algorithms, Thomas H. Cormen  |

|  |
| --- |
| **COURSE SCHEDULE (Weekly)** |
| **WEEK** | **TOPICS** |
| 1 |  interpolation:lineer and spline interpolation |
| 2 |  bezier approximation |
| 3 |  bezier approximation |
| 4 |  B-spline approximation |
| 5 |  B-spline approximation |
| 6 | Midterm Examination 1 |
| 7 |  probabilistic algorithms |
| 8 |  lineer programlama |
| 9 |  lineer programlama |
| 10 |  prime algorithms |
| 11 | Midterm Examination 2 |
| 12 |  Prime algorithms |
| 13 |  Approximation algorithms  |
| 14 |  Approximation Algorithms  |
| 15,16 | Final Examination |

|  |  |
| --- | --- |
| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE** **COMPUTER ENGINEERING PhD PROGRAM LEARNING OUTCOMES** | **CONTRIBUTION LEVEL** |
| **NO** | **LEARNING OUTCOMES (PhD)**  | **3**High | **2**Mid | **1**Low |
| **LO 1** | Ability to apply knowledge of mathematics, basic sciences and engineering in expertise level in Computer Engineering and other related areas. | **[x]**  | **[ ]**  | **[ ]**  |
| **LO 2** | Having extensive knowledge about contemporary techniques and methods applied in engineering, and ability to learn and apply new methods. | **[x]**  | **[ ]**  | **[ ]**  |
| **LO 3** | Developing new and original ideas and methods; ability to develop innovative/alternative solutions in systems, component or process design. | **[x]**  | **[ ]**  | **[ ]**  |
| **LO 4** | Ability to work effectively in interdisciplinary and multidisciplinary teams, making leadership of these kind of teams. Ability to work independently an taking responsibility. | **[ ]**  | **[x]**  | **[ ]**  |
| **LO 5** | Use a foreign language at an advanced level, and ability to communicate in oral and written forms. | **[ ]**  | **[ ]**  | **[x]**  |
| **LO 6** | Awareness of social, environmental, health, safety, and legal issues of engineering applications and, ability to make critical analysis and evaluation of new ideas and developments. | **[ ]**  | **[ ]**  | **[x]**  |
| **LO 7** | Advanced level of Professional and ethical responsibility. | **[ ]**  | **[ ]**  | **[x]**  |
| **LO 8** |       | **[ ]**  | **[ ]**  | **[ ]**  |
| **LO 9** |       | **[ ]**  | **[ ]**  | **[ ]**  |
| **LO 10** |       | **[ ]**  | **[ ]**  | **[ ]**  |
| **LO 11** |       | **[ ]**  | **[ ]**  | **[ ]**  |
| **LO 12** |       | **[ ]**  | **[ ]**  | **[ ]**  |

**Prepared by:** idiris Dağ **Date:** 6.4.2017

**Signature**: