# REINFORCED CONCRETE BRIDGE DESIGN

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| 1 | Course Title: | REINFORCED CONCRETE BRIDGE DESIGN |
| 2 | Course Code: | INS5038 |
| 3 | Type of Course: | Optional |
| 4 | Level of Course: | Third Cycle |
| 5 | Year of Study: | 1 |
| 6 | Semester: | 2 |
| 7 | ECTS Credits Allocated: | 6.00 |
| 8 | Theoretical (hour/week): | 3.00 |
| 9 | Practice (hour/week): | 0.00 |
| 10 | Laboratory (hour/week): | 0 |
| 11 | Prerequisites: | None |
| 12 | Language: | Turkish |
| 13 | Mode of Delivery: | Face to face |
| 14 | Course Coordinator: | Prof. Dr. ADEM DOĞANGÜN |
| 15 | Course Lecturers: | Doç.Dr. Hakan Tacettin Türker |
| 16 | Contact information of the Course Coordinator: | Prof.Dr. Adem DOĞANGÜN |
| 17 | Website: | |
| 18 | Objective of the Course: | To provide the necessary skills for the calculation and design of bridges |
| 19 | Contribution of the Course to Professional Development: | To be able to calculate and design bridges |
| 20 | Learning Outcomes: | |
| | 1 | Learning the vertical load carrying mechanisms of different bridge structural systems |
| | 2 | Learning the lateral load carrying mechanisms of different bridge structural systems |
| | 3 | Being able to identify structural failures |
| | 4 | |
| | 5 | |
| | 6 | |
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| | 8 | |
| | 9 | |
| | 10 | |
| 21 | Course Content: | |

**Course Content:**

| Week | Theoretical | Practice |
|---|---|---|
| 1 | General knowledge and definitions. Classification of bridges: | |
| 2 | Slab bridges, slab-beam (simple, break-front, Gerber, Truss, grate) bridges | |
| 3 | frame bridges | |
| 4 | arc (with three and two joints, bowstring and fixed) bridges | |

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| **5** | arc (with three and two joints, bowstring and fixed) bridges | |
| **6** | Loads according to T.C. Highway specification. | |
| **7** | Reinforced concrete specifications and basic principle | |
| **8** | bridge supports. | |
| **9** | Joints. | |
| **10** | Middle and end foots. | |
| **11** | bridge projects. | |
| **12** | bridge projects. | |
| **13** | bridge projects. | |
| **14** | bridge projects. | |

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| **22** | Textbooks, References and/or Other Materials: | Guide Specifications for Seismic Design of Highway Bridges,AASHTO,2001.<br>Celasun H.,Betonarme Köprüler,Çağlayan Yay.,1980.<br>Ekiz İ., Köprü Problemleri, Çağlayan Yay.,1976.<br>Rowe R.E.,Concrete Bridge Design,Elsevier Publ.Comp.,Amsterdam,1982. |
| **23** | Assesment | |

| **TERM LEARNING ACTIVITIES** | **NUMBER** | **WEIGHT** |
|---|---|---|
| Midterm Exam | 1 | 40.00 |
| Total | 2 | 100.00 |

| Activites | Number | Duration (hour) | Total Work Load (hour) |
|---|---|---|---|
| Theoretical | 14 | 3.00 | 42.00 |
| Practicals/Labs | 0 | 0.00 | 0.00 |
| Self study and preperation | 14 | 9.00 | 126.00 |
| Homeworks | 0 | 0.00 | 0.00 |
| Projects | 0 | 0.00 | 0.00 |
| Field Studies | 0 | 0.00 | 0.00 |
| Midterm exams | 1 | 3.00 | 3.00 |
| Others | 0 | 0.00 | 0.00 |
| Final Exams | 1 | 3.00 | 3.00 |
| Total Work Load | | | 174.00 |
| Total work load/ 30 hr | | | 5.80 |
| ECTS Credit of the Course | | | 6.00 |

| **25** | **CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS** | | | | | | | | | | | | | | | |
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| | **PQ1** | **PQ2** | **PQ3** | **PQ4** | **PQ5** | **PQ6** | **PQ7** | **PQ8** | **PQ9** | **PQ10** | **PQ11** | **PQ12** | **PQ13** | **PQ14** | **PQ15** | **PQ16** |
| **ÖK1** | 3 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK2** | 0 | 0 | 5 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ÖK3** | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 |

**LO: Learning Objectives PQ: Program Qualifications**

| Contribution Level: | 1 very low | 2 low | 3 Medium | 4 High | 5 Very High |
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