**MARMARA UNIVERSITY SCHOOL OF ARCHITECTURE**
**2021-2022 / SPRING Semester**

| Course Title | Code | Semester | Hour (T+P) | Credit | ECTS |
|---|---|---|---|---|---|
| Structure II | Arch 210 | Spring | 2 | 2 | 2 |
| **Prerequisities** | Arch 209 | | | | |
| **Language of Instruction** | English | | | | |
| **Course Type (Required / elective)** | Required | | | | |
| **Course Coordinator** | | | | | |
| **Instructors /e-mail** | M. Halis Günel | | | | |

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| **Goals** | It is aimed to give information about structural systems to architectural students during the design phase. Within the scope of the course, it is planned to show the load effects and Turkish Building Earthquake Code on the structural design. | |
| **Learning Outcomes** | * Integrate the structural theory into the architectural project; handle the structural design together with the architectural design.<br>* Estimate the approximate dimensions of structural elements in architectural design.<br>* Refer Turkish Building Building Earthquake Code during the design phase. | |
| **Course Content** | * General review of structures, concepts of equilibrium, stability, serviceability and safety.<br>* Behavior of beams, trusses, frames, shear-walls, reinforced concrete slabs, arches.<br>* General principles of reinforced concrete.<br>* Earthquake safe architectural design concept: Building Code requirements. | |
| **Assessment Criteria** | **Assessment Components** | **No component may have more than 50% weight.** |
| | **Attendance and contribution** | **%10** |
| | **Mid -term exam** | **% 40** |
| | **Final Exam** | **% 50** |
| | **TOTAL** | **% 100** |

| **WEEKLY TOPICS AND PREPARATIONS** | | | |
|---|---|---|---|
| **WEEKS** | **DATE** | **TOPICS** | **PREPARATIONS** |
| 1. Week | | Introduction to the course | |
| 2. Week | | Review of structures: concepts of equilibrium, stability, serviceability and safety. | |
| 3. Week | | Review of structures: Beams, trusses, frames, shear-walls, arches | |
| 4. Week | | Behavior of structures: Beams, trusses, frames, shear-walls, arches | |
| 5. Week | | General Principles of reinforced concrete | |
| 6. Week | | General Principles of reinforced concrete (continued) | |
| 7. Week | | Reinforced Concrete Slabs | |
| **MIDTERM WEEK** | | | |
| 8. Week | | Reinforced Concrete Slabs (continued) | |
| 9. Week | | Loads on structures | |
| 10. Week | | Loads on structures (continued) | |
| 11. Week | | Structural Elements and Building code requirements | |
| 12. Week | | Structural Elements and Building code requirements (continued) | |
| 13. Week | | Structural Elements and Building code requirements (continued) | |

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| 14. Week | | Discussion | |
| **FINAL WEEK** | | | |

| **REFERENCES** |
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| * "Building Structures Illustrated: Patterns, Systems, and Design", F.D.K. Ching, 2014, Wiley, New Jersey.<br>* "Reinforced Concrete", U. Ersoy et al., Metu Press, 2010, Ankara. |

| **ECTS / WORKING HOUR TABLE** | | | |
|---|---|---|---|
| **Activities** | **Number of Weeks** | **Duration (Hour)** | **Working Hours** |
| **Duration of the Course (Including Exams: 14 x Total Weekly Course Hour)** | | | |
| **Extracurricular Working Hour (Preparatory Work, Review)** | | | |
| **Assignments, Presentations, Internet Studies, etc.** | | | |
| **Mid-term Exam** | | | |
| **Final Exam** | | | |
| **Working Hours in Total** | | | |
| **Working Hours in Total / 30** | | | |
| **ECTS Credit of the Course** | | | |