| DESIGN OF DUCTILE STEEL STRUCTURES | | | | | | | | | |
|------------------------------------|---|---|---|--|--|--|--|--|--|
| 1 | Course Title: | DESIGN | OF DUCTILE STEEL STRUCTURES | | | | | | |
| 2 | Course Code: | INS6039 | | | | | | | |
| 3 | Type of Course: | Optional | | | | | | | |
| 4 | Level of Course: | Third Cy | cle | | | | | | |
| 5 | Year of Study: | 2 | | | | | | | |
| 6 | Semester: | 3 | | | | | | | |
| 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: | | | | | | | | |
| 12 | Language: | Turkish | | | | | | | |
| 13 | Mode of Delivery: | Face to f | ace | | | | | | |
| 14 | Course Coordinator: | Prof. Dr. | HAKAN TACETTİN TÜRKER | | | | | | |
| 15 | Course Lecturers: | Hakan T Türker | | | | | | | |
| 16 | Contact information of the Course Coordinator: | hakantturker@uludag.edu.tr | | | | | | | |
| 17 | Website: | | | | | | | | |
| 18 | Objective of the Course: | The aim of the course is to teach the fundamental concepts related to the ductile design of steel structures. | | | | | | | |
| 19 | Contribution of the Course to Professional Development: | This course provides to define the concept of ductile design, plastic analysis methods, ductile design of steel structural systems, capacity design method. | | | | | | | |
| 20 | Learning Outcomes: | | | | | | | | |
| | | 1 | To be able to define the concept of ductile design | | | | | | |
| | | 2 | To learn plastic analysis methods. | | | | | | |
| | | 3 | To learn the ductile design of steel structural systems | | | | | | |
| | | 4 | To lear capacity design method | | | | | | |
| | | 5 | | | | | | | |
| | | 6 | | | | | | | |
| | | 7 | | | | | | | |
| | | 8 | | | | | | | |
| | | 9 | | | | | | | |
| | | 10 | | | | | | | |
| 21 | Course Content: | | | | | | | | |
| | Course Content: | | | | | | | | |
| Week | Theoretical | | Practice | | | | | | |
| 1 | Structural steel | | | | | | | | |
| 2 | Plastic behavior at the cross-section | | | | | | | | |
| 3 | comprehend the ductile design conce | | | | | | | | |
| 4 | upper bound lower bound and unique theorems in plastic analysis | eness | | | | | | | |
| 5 | Plastic analysis methods | | | | | | | | |
| 6 | Plastic analysis methods | | | | | | | | |

| 7 | Plast | tic ar | nalysis | s meth | nods | | | | | | | | | | | | | |
|----------------------------|---|---|---------|--------|------|--------|----------------------------------|-------------------------|--|--------|----------|-------|---------|----------|-------|-------|------|--|
| 8 | statio | static pushover analysis | | | | | | | | | | | | | | | | |
| 9 | Desi | Design of ductile moment-resisting frames | | | | | | | | | | | | | | | | |
| 10 | Desi | sign of ductile moment-resisting frames | | | | | | | | | | | | | | | | |
| 11 | Desi | sign of ductile braced frames | | | | | | | | | | | | | | | | |
| 12 | Desi | esign of ductile braced frames | | | | | | | | | | | | | | | | |
| 13 | capa | capacity design concept | | | | | | Τ | | | | | | | | | | |
| 14 | Beam-column connections | | | | | | | | | | | | | | | | | |
| 22 | Textbooks, References and/or Other Materials: | | | | | | | St T H A st | Bruneau, M., Uang, C-M.,Whittaker,A. ,"Ductile design of steel structures" McGraw-Hill T.C. Çevre ve Şehircilik Bakanlığı, Çelik Yapıların Tasarım Hesap ve Yapım Esalaslarına Dair Yönetmelik, 2018. American Institute of Steel Construction, Specification for structural steel buildings AISC 360-16, Chicago, 2016 | | | | | | | | | |
| | | | | | | | | Le | William T. Segui, Steel Design, 6th Ed., Cengage Learning, 2017 Jack C. McCormac, Stephen F. Csernak, Structural Steel Design Fifth Edition, Prentice Hall, 2012. | | | | | | | | | |
| 23 | Asse | esme | ent | | | | | | _ | | | | | | | | | |
| TERM L | LEAR | NING | ACTI | VITIES | 5 | | | NUMBE | W | WEIGHT | | | | | | | | |
| Midterr | R Midterm Exam 1 | | | | | | 4 | 40.00 | | | | | | | | | | |
| | | | | | | | Number Duration (hour) Total Wor | | | | | Vorle | | | | | | |
| Activites | | | | | | | Load (ho | | | | | | | | | | | |
| Tbtadretical 2 | | | | | | 1(| 100400 | | | 3.00 | 3.00 | | | 42.00 | | | | |
| Practicals/Labs | | | | | | | 0 | | | 0.00 | 0.00 | | | 0.00 | | | | |
| Self study and preperation | | | | | | | | 14 | | | 4.00 | 4.00 | | | 56.00 | | | |
| Homeworks | | | | | | | | 0 | | | 0.00 | 0.00 | | | | | | |
| 萨哈 哈 | billets | | | | | | | 1 | 100.00 | | | 0.00 | 0.00 | | | | | |
| | ïeld Studies | | | | | | | | 0 | | | 0.00 | | | | 0.00 | | |
| Midterr | | | | | | | | | 1 | | | 30.00 | 30.00 | | | 30.00 | | |
| Others | | | | | | | | | 0 | | | 0.00 | | | | 0.00 | | |
| Final E | Exams | | | | | | | | 1 | | | 52.00 | 52.00 | | | 52.00 | | |
| Total V | I Work Load | | | | | | | | | | | | 180.00 | | | | | |
| Total w | | | | | | | | | | | | | | 6.00 | | | | |
| ECTS | Credit | t of tl | ne Co | urse | | | | | | | | | | | | 6.00 | | |
| 25 | 25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS | | | | | | | | | | | | | | | | | |
| | F | PQ1 | PQ2 | PQ3 | PQ4 | PQ5 | PQ6 | PQ7 | PQ | 8 PQ9 | PQ1 0 | PQ11 | PQ12 | PQ1 3 | PQ14 | PQ15 | PQ16 | |
| ÖK1 | | 1 | 4 | 4 | 4 | 5 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ÖK2 | | 1 | 5 | 4 | 5 | 4 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ÖK3 | 5 | | 4 | 4 | 4 | 5 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ÖK4 | 5 | 5 | 4 | 4 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | l | 0: L | earr | ning C | bje | ctives | ; | PQ: P | rogra | m Qu | alifica | tions | ; | | • | |

| Contrib ution | 1 very low | 2 low | 3 Medium | 4 High | 5 Very High |
|------------------|------------|-------|----------|--------|-------------|
| Level: | | | | | |