

# STATICALLY INDETERMINATE STRUCTURES

1	Course Title:	STATICALLY INDETERMINATE STRUCTURES	
2	Course Code:	BSM5035	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	1	
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 face	
14	Course Coordinator:	Prof. Dr. Erkan Yaslıoğlu	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	e-posta : yasli@uludag.edu.tr Telefon: 0 224 2941624 Adres: Uludağ Üniversitesi, Ziraat Fakültesi, Biyosistem Mühendisliği Bölümü, Görükle Kampusu, 16059, Nilüfer/BURSA	
17	Website:		
18	Objective of the Course:	It is aimed that students who understood isostatic systems to be gained knowledge on; effects of material geometry, strain and deformation, compliance with the geometric and strain and deformation equation	
19	Contribution of the Course to Professional Development:	It contributes to the safe design of statically indeterminate structures.	
20	Learning Outcomes:		
		1	Classifying loads on a structural system
		2	Explaining behaviour of load-carrying mechanisms
		3	Calculating normal force, shearing force and moment in load-bearing systems
		4	Classifying load-bearing systems in terms of static conditions
		5	Using contemporary techniques and calculation tools required for engineering applications
		6	Calculating loads on a hyperstatic-system
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21	Course Content:		
		<b>Course Content:</b>	
Week	Theoretical	Practice	
1	Introduction, steps for structural analysis, assumptions for structural analysis, definition of hyperstatic-system		

2	Relationship among linear load, shearing force and bending moment	
3	Relationship among linear load, shearing force and bending moment	
4	Truss systems	
5	Hyperstatic-systems, loads on a hyperstatic-system	
6	Analysis of hyperstatic-systems,	
7	Relocation and deformation calculations in beams and portal frames	
8	Relocation and deformation calculations in beams and portal frames	
9	Relocation and deformation in truss systems	
10	Calculation methods for hyperstatic systems, Cross method	
11	Calculation methods for hyperstatic systems, Cross method	
12	Calculation methods for hiperstatic systems, Cross method	
13	Calculation methods for hyperstatic systems, Biro method	
14	Calculation methods for hyperstatic systems, Biro method	

22	Textbooks, References and/or Other	Çakıroğlu, A. ve E. Çetmeli 1990. Yapı Statiği Cilt 2. Beta		
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	14	3.00	42.00
Practicals/Labs	0	0	0.00	0.00
Self study and preperation	11	11	6.00	66.00
Assessment	0	0	0.00	0.00
Homeworks	5	5	7.00	35.00
Projects	0	0	0.00	0.00
Field Studies	0	0	0.00	0.00
Midterm exams	0	0	0.00	0.00
Others	0	0	0.00	0.00
Final Exams	1	1	16.00	16.00
Total Work Load				177.00
Contribution of 30h (Year) Learning Activities to		0.00		5.90
ECTS Credit of the Course				6.00
Contribution of Final Exam to Success Grade		100.00		
Total		100.00		
Measurement and Evaluation Techniques Used in the Course		Homework, final exam.		

## 24 ECTS / WORK LOAD TABLE

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

ÖK3	4	3	5	1	5	3	1	2	3	4	3	1	0	0	0	0
ÖK4	5	4	5	3	4	4	1	2	4	5	5	1	0	0	0	0
ÖK5	3	4	5	2	5	3	1	2	3	4	4	1	0	0	0	0
ÖK6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives    PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			