EARTHQUAKE RESISTANT DESIGN OF RC STRUCTURES

1	Course Title:	EARTHQUAKE RESISTANT DESIGN OF RC STRUCTURES
2	Course Code:	INS3030
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	3
6	Semester:	6
7	ECTS Credits Allocated:	5.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	1.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. Ramazan LİVAOĞLU
15	Course Lecturers:	Dr. Ögr. Üyesi HAKAN TACETTİN TÜRKER
16	Contact information of the Course Coordinator:	rliva@uludag.edu.tr
17	Website:	http://insaat.uludag.edu.tr/
18	Objective of the Course:	Understanding the behaviour of reinforced concrete (rc) structures and rc members under earthquake loading, learning the earthquake resistant design principles
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	Understanding the behavior of structures under seismic actions and the principals of earthquake resistant design
	2	Being able to perform earthquake resistant design
	3	Learning the concept of ductilty
	4	Being able to detail the reinforcement of the RC members to provide ductilty
	5	Being able to identify the failures in RC structures due to seismic actions
	6	
	7	
	8	
	9	
	10	

21 Course Content:

Course Content:

Week	Theoretical	Practice
1	Introduction	Examples related to the subject
2	Basics of earthquake resistant design, structural irregularities	Examples related to the subject
3	Equivalent earthquake load method	Examples related to the subject

4	Spectral Acceleration Coefficient, spectrum coefficient, seismic load reduction factor, examples	Examples related to the subject
5	Introduction to earthquake resistant design requirements for reinforced concrete buildings	Examples related to the subject
6	Concept of ductilty and its importance	Examples related to the subject
7	Columns of high ductilty level	Examples related to the subject
8	Beams of high ductility level	Examples related to the subject
9	Midterm	Examples related to the subject
10	Shear walls of high ductility level	Examples related to the subject
11	Columns of nominal ductilty level	Examples related to the subject
12	Beams of nominal ductility level	Examples related to the subject
13	Shear walls of nominal ductility level	Examples related to the subject
14	Failures in RC buildings due to earthquake	Examples related to the subject

22	Textbooks, References and/or Other Materials:	Doğangün A. 2011, Betonarme yapıların hesap ve tasarımı, Birsen Yayınevi, 7. Baskı Ersoy U. ve Özcebe G., 2001, Betonarme, Evrim Yayınevi. TS 500,"Betonarme Yapıların Tasarım ve Yapım Kuralları", Türk Standartları Enstitüsü, Ankara, 2000. Deprem Bölgelerinde Yapılacak Binalar Hakkında Yönetmelik, Mart 2007
23	Assesment	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	1.00	14.00
Self study and preperation	14	5.00	70.00
Homeworks	1	28.00	28.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	2.00	2.00
Others	0	0.00	0.00
Final Exams	1	2.00	2.00
Total Work Load			144.00
Total work load/ 30 hr			4.80
ECTS Credit of the Course			5.00

Quiz 0 0.00
Final Exam 1 60.00
Contribution of Term (Year) Learning Activities to Success Grade 40.00
Contribution of Final Exam to Success Grade 60.00
Measurement and Evaluation Techniques Used in the Course
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	5	5	5	1	1	3	1	4	3	1	3	2	0	0	0	0
ÖK2	5	5	5	3	1	1	4	3	2	1	1	1	0	0	0	0
ÖK3	5	3	5	2	1	1	1	1	1	1	1	1	0	0	0	0
ÖK4	5	5	5	1	1	1	4	1	1	1	1	1	0	0	0	0

ÖK5	5	5	3	1	3	3	1	1	4	1	3	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**