Course Title-Course Code: CE 510 DEEP EXCAVATION and RETAINING STRUCTURES 1	Name of the Programme:CIVIL ENGINEERING

Semester	Teaching Methods							Credits	
	Lecture	Recite	Lab.	Field Study	H W	Other	Total	Credit	ECTS Credit
1-2	42	0	0	0	42	104	188	3	7.5

Language	Turkish
Compulsory / Elective	Optional
Prerequisites	-
Course Contents	Retaining Structures with anchorage, introduction, specifications types of anchorage, dimensional analysis of anchorage, test of anchorage, bearing capacity of anchorage, controlling of deformations in excavations with anchorage, mechanisms of potential collapse in anchorage walls, example of collapse and stability factor in anchorage walls, artificial freezing of soils, introduction, freezing methods, fields of usage, important factors that effect freezing of silts, period of freezing, compression strength of frozen soil, creep of frozen soil, relation between attitude time and soil strength in frozen soil, examples of applications of freezing methods.
Course Objectives	Calculation and design methods of retaining Structures with anchorage and freezing methods
Learning Outcomes and Competences	Usage of a special topic in geotecnical engineering
Textbook and /or References	Research papers in english and german language Standars : DIN 4014, DIN 4125, DIN 4128, TS 1537 Soil investigation and Foundation design, Prof. Dr. Sönmez YILDIRIM (in turkish)

Assessment Criteria		*If any,mark as (X)*	Percent (%)
	Midterm Exams	X	20
	Quizzes		-
	Homeworks	X	10
	Projects		-
	Term Paper		-
	Laboratory Work		-
	Other		-
	Final Exam	X	70

Instructors	Dr. dipl. ing. Ünsal SOYGÜR