COURSE IDENTIFICATION FORM							
Course Code and Name: IM5049 ADVANCED CONCRETE TECHNOLOGY				**Department of : GRADUATE EDUCATION INSTITUTE / DEPARTMENT OF CIVIL ENGINEERING / MASTER'S PROGRAMME WITH THESIS**			
Semester	**Theoretic Hour**	**Practice Hour**	**Total Hour**	**Credits**	**ECTS**	**Education Language**	**Type: Compulsory Elective**
Fall	3	0	3	3	5	Turkish	Optional
Prerequisite (s)							
Instructor		Assoc. Prof. Berivan YILMAZER POLAT				**Mail :** **Web :**	
Course Assistant						**Mail :** **Web :**	
Groups / Classes							
Course Aim	It is aimed to transfer innovations in concrete technology, to examine the effect of alternative materials used in concrete on concrete properties, to explain new types of various concrete admixtures, to give the production methods and properties of some special production technique concretes, to transfer the quality control methods of concrete as a building material.						
Course Goals	**Transfer Innovations in Concrete Technology**: To educate students about the latest advancements and innovations in the field of concrete technology. **Examine Alternative Materials**: To investigate and analyze how different alternative materials used in concrete affect its properties and performance. **Explain New Types of Admixtures**: To provide an understanding of various new types of concrete admixtures, including their purposes and effects on concrete. **Production Methods of Special Concretes**: To teach students about the production techniques and unique properties of specialized types of concrete. **Quality Control Methods**: To impart knowledge on quality control processes and methods for ensuring the integrity and performance of concrete as a building material. These goals aim to equip students with a comprehensive understanding and practical knowledge in modern concrete technology and its applications.						
Course Learning Outs and Proficiencies	- To be able to define the properties of the constituent components of concrete - To be able to technically compare alternative materials used iconcrete according to their advantages and disadvantages - To be able to select mineral and chemical admixtures used in concrete production in accordance with the intended use. - To be able to outline the information about the concrete standard						

	- To be able to evaluate concrete with different quality control methods
Course Basic and Auxiliary Contexts	Şimşek, O., (2016) Beton ve Beton Teknolojisi, Seçkin Yayıncılık, Ankara • Erdoğan, T. Y., (2003): Beton, ODTÜ Geliştirme Vakfı Yayıncılık ve İletişim Yayınları, 741s., Ankara. • Baradan, B. (2003) Yapı Malzemesi - II Dokuz Eylül Üniversitesi Mühendislik Fakültesi Yayınları, No.226, İzmir. Neville A.M. (1997) Properties of Concrete Fourth Edition, Longman Limited, England.
Methods of Give a Lecture	Face to Face

Assessment Criteria		**If Available, to Sign (x)**	**General Average Percentage (%) Rate**
	1. Quiz	**X**	**50**
	2. Quiz		
	3. Quiz		
	4. Quiz		
	5. Quiz		
	Oral Examination		
	Practice Examination (Laboratory, Project etc.)		
	Final Exam	**X**	**50**

Semester Course Plan

Week	**Subjects**
1	Introduction, General Information About Concrete Technology
2	Portland cement, aggregates and concrete mix water
3	Chemical and Mineral Admixtures Used in Concrete
4	Expected Properties of Concrete: Workability, Durability, Permeability, Shrinkage
5	New Developments in Concrete Design
6	Factors Affecting Concrete Properties

7	Midterm exam
8	Concrete Production
9	Protection and Curing of Concrete
10	Concrete Design and Mixture Calculation
11	Cement and Aggregate Tests
12	Quality Control Methods in Fresh and Hardened Concrete
13	Nondestructive Quality Control in Concrete
14	Destructive Quality Control in Concrete