

**COURSE IDENTIFICATION FORM**

**Course Code and Name:** IM5013 GEOLOGY  
APPLICATIONS IN CIVIL ENGINEERING

**Department of :** MASTER'S PROGRAM IN CIVIL  
ENGINEERING 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**

Assist. Prof. Özlem ERDEM

**Mail :** osenerdem@munzur.edu.tr  
**Web :**

**Course Assistant**

**Mail :**  
**Web :**

**Groups / Classes**

**Course Aim**

To ensure that geological information and data are digitized and used in engineering works, to teach how to find and interpret engineering properties of rocks and soils, to define mass movements and to determine ways to prevent them, to teach how to make dam site studies and tunnel rock classifications, to teach how to make material investigations, to teach how to make engineering geology maps.

**Course Goals**

**Course Learning Outcomes and Proficiencies**

- The student has sufficient knowledge in mathematics, science and related engineering discipline specific subjects; gains the ability to use theoretical and applied knowledge in these areas in complex engineering problems.
- The student gains the ability to identify, define, formulate and solve complex engineering problems; for this purpose, the student gains the ability to select and apply appropriate analysis and modeling methods.
- As a result of the theoretical and practical teaching of the properties specified in the aim of the course, the student gains the ability to take precautions by predetermining the problems that may be encountered in surface and underground ground / rock environments.
- The student will have knowledge on issues such as increasing safety in construction areas and reducing costs.
- The student gains the knowledge of determining the correct route selection.
- The student gains the ability to use engineering geology knowledge in civil engineering projects and the ability of drilling logs and evaluations.

<b>Course Basic and Auxiliary Contexts</b>	<ul style="list-style-type: none"> <li>• Ders Notları</li> <li>• Kaya Şev Stabilitesi”, E. HOEK</li> <li>• KELLER, E.A., PINTER, N., “Active Tectonics, Earthquakes, Uplift, and Landscape”, Pearson Education, 363s, 2002. PRESS, F.,</li> <li>• SİEVER, R., GROTZINGER, J., JORDAN, T.H., Understanding Earth (IV. Edition), W.H. Freeman and Company, New York, 567s, (2004).</li> <li>• ARIÖĞLU, E., YILMAZ, A. O., “Çözümlü Problemlerle Tünel/Galerilerin-Sismik Analizi”, TMMOB Maden Mühendisleri Odası İstanbul Şubesi Yayın No: 111, 312 s., 2006.</li> <li>• “Mühendisler için Jeoloji Bilgileri, Genişletilmiş 2. Baskı” (2013), Prof.Dr.Mustafa YILDIRIM, Prof.Dr.Erkan GÖKAŞAN</li> <li>• “İnşaat Jeolojisi”, Prof. Dr. Mahir VARDAR, İTÜ Yayını (1991)</li> <li>• “Mühendislik Jeolojisi”, Prof. Dr. Kemal ERGUVANLI, Seç Yayın (1982);</li> </ul>
<b>Methods of Give a Lecture</b>	Lecture, Discussion on case studies, Demonstration (telling and doing by showing the student do it)

<b>Assessment Criteria</b>		<b>If Available, to Sign (x)</b>	<b>General Average Percentage (%) Rate</b>
	<b>1. Quiz</b>	<b>X</b>	<b>50</b>
	<b>2. Quiz</b>		
	<b>3. Quiz</b>		
	<b>4. Quiz</b>		
	<b>5. Quiz</b>		
	<b>Oral Examination</b>		
	<b>Practice Examination (Laboratory, Project etc.)</b>		
	<b>Final Exam</b>	<b>X</b>	<b>50</b>
<b>Semester Course Plan</b>			
<b>Week</b>	<b>Subjects</b>		
<b>1</b>	Teaching the geological classification of rocks		
<b>2</b>	Teaching the properties of rocks		

3	Teaching mass movements
4	Teaching the factors affecting the properties of rocks
5	Teaching the factors affecting the properties of rocks
6	Teaching the classification of rocks for engineering purposes
7	Teaching geotechnical problems observed in rocks
8	MIDTERM EXAM
9	Teaching the stability of slopes
10	Teaching the stability of slopes
11	Teaching methods to increase the stability of slopes
12	Teaching methods to increase the stability of slopes
13	Teaching the bearing capacity of rocks
14	Teaching the bearing capacity of rocks