



## GEOLOGY FOR ENGINEERS

MÃ: GEOL3016

1. **Credit:** 03
2. **Time:** 45 hours;
3. **Program:**
  - *Compulsory for: Civil Engineering track*
  - *Elevtive for: Water Resources and others*
4. **Evaluation:**

Criteria	Interval	Description	Percentage
Attendance	Everyday	Based on the attendance and the attitude of student. Talking, texting, and sleeping are not permitted during lecture	5%
Assignments and quizzes	Regularly	Students are required to fulfill and submit all assignment as required by lecturer and follow the due dates. The quizzes are random.	15%
Exams	3 one –hour midterm exams (section exam) and a final exam	The exams consist both multiple choice questions and essay questions. Unexcused absences during an exam result in a 0 for that test. All students are required to take the final exam.	80% (Each exam 20%)
Total			100%

### 5. PREREQUISITES

*Mechanics and Fluid Mechanics*

### 6. COURSE SUMMARY

To explore and gain an appreciation for physical geology through the study of the material and infrastructure of the earth, the relationship of its landforms, natural resources, living environments, and humans. Special emphasis will be placed on the principles of physical geology, earth's internal structure, and geologic time.

### 7. Lecturers:

<b>T T</b>	<b>Name</b>	<b>Title</b>	<b>Telephone</b>	<b>Email</b>	<b>Position</b>
1	Nguyễn Quang Tuấn	PhD	0936202238	nqtuan@tlu.edu.vn	Lecturer
2	Phạm Quang Tú	PhD	0913578702	<u>Tupq@tlu.edu.vn</u>	Lecturer
3	Nguyễn Trung Kiên	PhD	0912735468	nguyentrungkien@tlu.edu.vn	Lecturer

### 8. Textbook and References:

**Textbook:** West, Terry R., 1995, Geology Applied to Engineering, Prentice Hall.

#### References:

Geoscience Laboratory 5<sup>th</sup> Edition, Tom Freeman;

Physical Geology, 13<sup>th</sup> Edition, Charles C. Plummer

Foundaton of Engineering Geology, 2<sup>nd</sup> edition, Tony Waltham

### 9. Schedule:

<b>No</b>	<b>Class hours</b>	<b>Topic</b>	<b>Chapter</b>
1	1	Introduction to geology	1
	2	Minerals	2
2	3	Igneous Rocks and Processes	3
3	3	Sedimentary Rocks and Processes	4
4	3	Metamorphic Rocks and Processes	5
5	2	Rock Cycle, Geologic Time	1,9
	1	Introduction to maps, aerial photographs and Remote sensing	Appendix A
6	2	Weathering and erosion	8
	<b>1</b>	<b>EXAM #1</b>	
7	1	Engineering Properties of Rock	6
8	3	Soil and Soil Mechanics	7,8

9	3	Structural Geology, Folding, plastic deformation	10
10	2	Structural Geology Faulting, jointing, and brittle deformation	10
	1	<b>EXAM #2</b>	
11	3	Earthquakes and Geophysics	18
12	3	Mass Wasting, Slope Stability and Subsidence	14
13	3	Hydrogeology, Subsurface Contamination and Remediation	15, 19
14	2	Surface water, Running water and river systems, Coastal Processes, Surface-/Ground-Water Interaction, Karst	11, 16
	1	Engineering Applications in Extreme Climates	11,12,13,17,20
15	2	Subsurface Investigation and Site selection Summary; major concepts; final review questions and answers	19
	1	<b>EXAM #3</b>	
		<b>FINAL EXAM</b>	

## 10. Contact

A. Phòng 416- Nhà A1 -Trường Đại học Thủy Lợi

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**TRƯỞNG KHOA**  
*(Phụ trách ngành đào tạo)*

**TRƯỞNG KHOA**  
*(Phụ trách học phần)*

**TRƯỞNG BỘ MÔN**