	INSTITUT TEKNOLOGI SEPULUH NOPEMBER FACULTY OF CIVIL PLANNING AND GEO ENGINEERING GEOPHYSICAL ENGINEERING DEPARTMENT UNDERGRADUATE PROGRAM (S1)	
Course	**Course Name**	**Petrology**
	Course Code	**CF234205**
	Credit (SKS)	**3 (Three)**
	Semester	**2 (Two)**

COURSE DESCRIPTION

This course explains the classification and description of igneous, sedimentary and metamorphic rocks based on texture, structure and mineralogical and chemical composition aspects. In addition, it also discusses the origins and processes of rock occurrence in the dimensions of space and time, in relation to the theory of plate tectonics and rock associations in various geological conditions. This course applies the case learning method.

PROGRAM LEARNING OUTCOMES (PLO)	
PLO-4	Able to explain the principles of mathematics, natural sciences, geology, geospatial, instrumentation, information technology, engineering principles and designs into geophysical engineering procedures, processes, systems or methodologies.
COURSE LEARNING OUTCOMES (CLO)	
CLO-1	Able to explain the concept of formation and classification of igneous rocks
CLO-2	Able to explain the concept of formation and classification of sedimentary rocks
CLO-3	Able to explain the concept of formation and classification of metamorphic rocks
SUB COURSE LEARNING OUTCOMES (SUB CLO)	
Sub CLO-1	[C2,A3] Able to explain the concept of igneous rock formation
Sub CLO-2	[C2,A3] Able to explain the concept of igneous rock classification
Sub CLO-3	[C2,A3] Able to explain the concept of sedimentary rock formation
Sub CLO-4	[C2,A3] Able to explain the concept of sedimentary rock classification
Sub CLO-5	[C2,A3] Able to explain the concept of metamorphic rock formation
Sub CLO-6	[C2,A3] Able to explain the concept of metamorphic rock classification

STUDY MATERIALS

- Rock cycle
- Rock forming minerals
- Magma formation
- Igneous rock genesis
- Classification of igneous rocks
- Volcanism processes and their products
- Sedimentary rock genesis
- Classification of sedimentary rocks
- Texture and structure of sedimentary rocks
- Metamorphic rock genesis
- Classification of metamorphic rocks
- Metamorphism facies
- Petrography of rock forming minerals

PRECONDITION

Physical Geology

REFERENCES

1. Boggs, S., Jr., 2009, Petrology of Sedimentary Rocks, 2nd Edition, Cambridge University Press,Cambridge, 600h.
2. Frost, B.R., Frost, C.D., 2014, Essentials of Igneous and Metamorphic Petrology, CambridgeUniversity Press, Cambridge, 303h.
3. Tucker, M.E., 2001, Sedimentary Petrology: An Introduction to the Origin of Sedimentary Rocks,3rd Edition, Blackwell Scientific Publications, Oxford, 262h.
4. Winter, J.D., 2014, Principles of Igneous and Metamorphic Petrology, 2nd Edition, Pearson, Edinburgh, 737h.
5. Publications on petrology