

# Geological Resource and Engineering

**Program Code: 085217**

## 1. Program Objectives

To grasp foundation knowledge and systematic professional knowledge in Geological Engineering;

To develop scientific research capabilities or the technical expertise in practical work;

To show an international perspective and potentials of collaboration and innovativeness;

To become high-level talents of professional technologies and managerial skills in the petroleum industry worldwide.

## 2. Program Directions

(1) Petroleum geology and exploration

(2) Geophysical exploration

## 3. Cultivation ways and Program duration

Cultivation ways: Three stages of cultivating the engineering master program, i.e. course studying + professional practice + academic dissertation. The professional practice stage should no less than half a year. Students should find an enterprise or a company by themselves to finish this stage, providing materials for their academic dissertation.

Program duration: 3 years

## 4. Credit requirement

Minimum 30 credits in total, minimum 15 credits for compulsory courses.

## 5. Course Schedule

Course Type	Course Code	Course Name	Teaching hours	Credits	Semester	Notes
Compulsory courses	L6000002	Survey of China	36	2	1	Choose 2 courses
	L6000012	Primary Chinese Language	80	4	1	
	L6000025	Numerical Analysis	56	3	1	
	L5012001	Advanced Petroleum Geology	48	3	2	
	L6012003	Reservoir Geology and Oil Reservoir Description	48	3	2	
	L6013002	Integrated Geophysical	48	3	2	

		Methods and Applications				
	L5013032	Seismic Data Processing	48	3	1	
	L6012006	Logging Geology	48	3	1	
	L6014001	Geophysical Logging Methods	48	3	2	
Compulsory sections	L7010101	Attend 10+ seminars, make 1 academic presentation		1	1-3	
	L7010103	Literature review and research proposal		1	3	
Elective courses	L7011007	Oil and Gas Exploration Technology of Comprehensive Training	48	3	3	Choose 2 for each program direction
	L7012014	Reservoir Geological Basic Skills Training	48	3	3	
	L7011008	Integrated Geophysical Exploration Training	48	3	3	
	L7011009	Integrated Geophysical Logging Training	48	3	3	
	L6011014	Sequence Stratigraphy	32	2	2	For program direction 1
	L6011003	Oildom Lithofacies Paleogeography	32	2	1	
	L6011008	Oil Region Structure Analyzing	32	2	1	
	L6012007	Geological Statistics	32	2	2	
	L7011001	Applied Geochemistry	32	2	2	
	L6011004	Diagenesis and Reservoir Evaluation	32	2	1	For program direction 2
	L6013125	Seismic Wave Dynamics	32	2	2	
	L6013020	Oil and Gas Reservoir Geophysics	32	2	2	
	L6013007	Fundamental of Geophysical Inversion	32	2	1	
	L6013018	Geophysical Software Analysis and Application	32	2	2	
	L6013017	Petrophysical and Rock Physics Experiments	32	2	2	

	L6014010	Production and Engineering Logging	32	2	2	
	L6014007	Logging Information Processing and Application	32	2	1	
	L6014002	Logging Reservoir Evaluation Methods	32	2	1	
Supplementary courses	L6014007	Introduction to Geoscience	48	3	1	For program direction 1
	L6014002	Structural Geology	48	3	1	
	L5011005	Sedimentology	48	3	1	
	L5011002	Oil & Gas Geology and Exploration	48	3	1	
	L6011002	Elastic Wave Dynamics	48	3	1	For program direction 2
	L8013031	Principle of Seismic Exploration	32	2	1	
	L8013032	Methods & Theories of Well-Logging	32	2	1	

Notes: 1) The students must pass HSK level 3.

2) The cross-disciplinary students choose 2 supplementary courses under the advice of the supervisor. The supplementary courses are compulsory, but will not be counted in the total required credits.