

# Education Plan for Doctor in Mining Engineering

(Discipline Code:0819,Award Doctor Degree of Engineering)

## I Objectives

1. Master the basic theory of Marxism, establish a scientific worldview, adhere to the Party's basic line, love the motherland; be law-abiding and good conduct; be honest and trustworthy, rigorous style of study, unity, and with good research ethics and professionalism.

2. Master broad and solid theoretical foundation in the field of profession, grasp systematic and deeper expertise, be competent to professional high-level jobs of teaching, scientific researching, engineering technology and scientific management, be able to make innovative achievements on professional technology.

3. Master two foreign languages, be able to read professional foreign materials skillfully, be able to write academic papers with a foreign language masterly, have a good ability of speaking-listening in foreign languages as well as international academic exchanging.

4. Obtain healthy physique and fine psychologic quality.

## II Disciplinary Research Areas

### **Mining Engineering:**

1. Mining theory and technology
2. Rock & soil mechanics and engineering
3. Mine security technologies and blasting engineering
4. Mining information technology and economic management

### **Mineral Processing Engineering:**

1. Beneficiation technology of complex polymetallic ores
2. Nonmetallic ore deep-processing and mineral materials
3. Recycling of mineral resources and mine environment
4. New mineral processing technology
5. Mining economics and management

## III Educational System and Years of Study

For the PhD candidates with a master degree, the Program Duration is 3 years and the length of schooling is generally 3-4 years, a maximum of 6 years. For the PhD candidates who directly begin their doctoral studies with a bachelor degree, the Program Duration is 5 years and the length of schooling is generally 5-6 years, a maximum of 7 years.

## IV Curriculum System and Credit Requirements

The school curriculums are divided into two categories: degree courses and non-degree courses. The degree courses include public degree courses and professional degree courses, while the non-degree courses include compulsory courses and elective courses.

For the PhD candidates already had a master degree to be eligible for graduation, the total credits required is no less than 16, among which the total course credits are no less than 12, degree course credits are no less than 10, and the compulsory courses credits are no less than 4. For the PhD candidates already had a bachelor degree to be eligible for graduation, the total credits required is no less than 38, among which the total course credits are no less than 34, degree course credits are no less than 26, and the compulsory courses credits are no less than 4.

**Table 1 The Curriculum Endorsed**

<b>Course Category</b>	<b>Course No.</b>	<b>Course Name</b>	<b>Hour</b>	<b>Credit</b>	<b>Semester</b>	<b>School</b>	<b>Remark</b>
Public Degree Courses	003281001	First Foreign Language(Chinese)	108	6	12	School of International Education	Compulsory and already had a master degree
	003281001	First Foreign Language(Chinese)	108	6	12	School of International Education	Compulsory and already had a bachelor degree
	003281002	Introduction to China	54	3	1	School of International Education	Compulsory
Public Optional Courses	01813001-005	Second Foreign Language	72	4	2	Sch. of Foreign Language	Compulsory if not choose during graduate level)
	02112101	Classic Marxism books	18	1	1	Marxism Institute	
Professional Degree Courses	00811101	Advanced Mining Science	36	2	1	Sch. of Res.andEnv . Eng.	Mining Engineering (compulsory at least 2 courses)
	00811102	Blasting Dynamics	36	2	1	Sch. of Res.andEnv . Eng.	
	00811103	New Theory of Rock Mechanics	36	2	1	Sch. of Res.andEnv . Eng.	
	00521302	Quantum Chemistry	36	2	2	Sch. of Science	Mineral Processing Engineering (compulsory at least 2 courses)
	00811003	Specialized Topics on Mineral Processing Engineering	36	2	1	Sch. of Res.andEnv . Eng.	
	00811004	Science of Mineral Materials	36	2	1	Sch. of Res.andEnv . Eng.	
	00811005	Type Special	36	2	1	Sch. of Res.andEnv	

Course Category	Course No.	Course Name	Hour	Credit	Semester	School	Remark
		Discourse of Modern Mineral Equipment				. Eng.	
	00811007	Advanced theory of flotation	36	2	1	Sch. of Res.andEnv . Eng.	
Special Optional Courses	00812101	Mineral Economics and Evaluation	36	2	2	Sch. of Res.andEnv . Eng.	Mining Engineering
	00812102	New Development of Rock Blasting Theory and Technology	36	2	2	Sch. of Res.andEnv . Eng.	
	00812103	Soft Rock Engineering Mechanics	36	2	2	Sch. of Res.andEnv . Eng.	
	0812104	Intelligence Rock Mechanics	36	2	2	Sch. of Res.andEnv . Eng.	
	0812105	Numerical Simulation of Explosion Mechanics	36	2	2	Sch. of Res.andEnv . Eng.	
	0812106	Digital Mine	36	2	2	Sch. of Res.andEnv . Eng.	
	00812007	Specialized Topics on Secondary Resources and Environmental Engineering	36	2	2	Sch. of Res.andEnv . Eng.	Mineral Processing Engineering
	00812008	Surfaces and Interfaces of Mineral Materials	36	2	2	Sch. of Res.andEnv . Eng.	
	00812009	Microbial Technology	36	2	2	Sch. of Res.andEnv . Eng.	
	00812011	Management Economics of Modern Mining Industry	36	2	2	Sch. of Res.andEnv . Eng.	
	00812012	Techniques and Examples of Metal Mineral Processing	36	2	2	Sch. of Res.andEnv . Eng.	

Course Category	Course No.	Course Name	Hour	Credit	Semester	School	Remark
Compulsory Activities	00814001	PhD Practice	36	2	16	Sch. of Res.andEnv . Eng.	
	00814002	PhD Topic selection Report	18	1	3	Sch. of Res.andEnv . Eng.	
	00814003	PhD Academic Activities	18	1	3	Sch. of Res.andEnv . Eng.	(at least 10 times)

Unless doctoral students have taken the second foreign language at the postgraduate level, doctoral students can't have to choose a second foreign language in the stage of Dr. Otherwise, the second foreign language should be taken as a required course.

### V Compulsory Courses

(1) Field Practice. Require students to complete a simulate longitudinal project application of a province (city) level and above (social) Natural Science Foundation and a not less than 30 minutes PPT report. After the instructor (group) checks and reviews, each qualified student earn two credits.

On-the-job postgraduate student can avoid field practice, but students can't earn the two credits. The lack credits must be filled by elective course.

(2) Academic Activities. In order to promote the students to take the initiative to care for and understand the development dynamic of the frontiers of the discipline at home and abroad, broaden their horizons, inspire creativity, it's required that each doctoral students should be open to do academic report at least five times and participate in academic report at least 10 times, and that each time to participate in academic activities must write more than 500 words of experience. Each qualified student earn two credits in the required part.

(3) Topic-selecting reports and Mid-term examination. Doctoral student after enrollment, should clear the direction of scientific research under the guidance of the instructor, access to domestic and foreign related literature, conduct extensive investigation and study, propose the report of the academic degree's dissertation topic. After examining and verifying, doctoral student need identify research topics.

Doctoral students must attend the school mid-term examination. Doctoral student selection topic report and the specific requirements of the mid-term examination accord to the Handbook of postgraduates "graduate management approach of mid-term assessment and selection topic".

Report and interim assessment of the specific requirements accord to the Handbook of postgraduates "graduate management approach of mid-term assessment and selection topic".

### VI Scientific Research and Dissertation

In this discipline, the training of doctoral students' research capabilities runs through the whole process of doctoral study. After the titles of papers were determined, doctoral students should summarize their papers in stages and write work reports at each stage.

Before applying for papers defense, doctoral students' academic papers related to degree thesis should be met following requirements: be published (including accepted) in the retrieving source journals of inside-outside SCI or EI (core); or be published in the domestic-international academic journals or importantly international conference with subordinate subjects and then included by SCI or EI (CD-Edition). The number of qualified papers is at least 2, and one of which is written in English at least.

Doctoral students' academic papers must be checked in the testing system of misconduct in academic papers and run up to the required standards proposed by the School Degree Evaluation Committee before thesis defense.

## **VII Cultivation Mode and Method**

Doctoral students are trained in forms of a master-responsible system or a tutor-based group. Training methods should be flexible and diverse, and teaching modes are more often heuristic and research-oriented. Meanwhile it should give full play to teacher's initiative.

## **VIII Others**

1. To examine the effects of instruction, ensure the quality, the items listed in the program must have an assessment. Assessment methods and performance assessment methods need to be clearly stated in the course syllabus.

2. Ph.D.. candidates who were enrolled ahead of schedule shall be trained as students starting from graduates under the program.

3. Before thesis proposal, Ph.D.. candidates are required to pass all the degree courses and get the credits before thesis proposal. Students are allowed to take some of the other elective courses according to the dissertation after thesis proposal. All the courses shall be completed before the application of dissertation defense.

4. Each discipline shall make specific regulations and requirements in the amount of literature to be read for the students during the study period. Science and Engineering candidates should review more than 80 pieces of literature at home and abroad (100 for candidates of other disciplines), in which foreign literature shall be no less than one third.

5. Ph.D.. candidates shall report their own learning and research work to the supervisor at least once a month at the course learning stage, and at least twice a month during the paper sessions, which shall be institutionalized and clearly clarified in the programs.

6. This program will enact from 2016.