Undergraduate Curriculum Schedule for Geological Engineering Major

Course Nature		Course Number	Course Name	Credits	Class Hours					Semester	Recommended Elective Semester	Notes
					overall class hour	**lecture**	**deliberate**	**Experiments / practice**	**on-line**			
General Education Courses	Core Compulsory Courses for General Education	G2418101	Fundamentals of Marxism	2.5	40	40				Autumn	1	
		G2418201	Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	2.5	40	40				Autumn	3	
		G2418301	Outline of Modern and Contemporary Chinese History	2.5	40	40				spring	2	
		G2418401	Ideology	2.5	40	40				spring	4	
		G2418501	Introduction to Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era	3	48	48				spring	4	
		G2418601	Situation and Policy (1)	0.5	16	6	10			spring	2	
		G2418602	Situation and Policy (2)	0.5	16	6	10			spring	4	
		G2418603	Situation and Policy (3)	0.5	16	6	10			spring	6	
		G2418604	Situation and Policy (4)	0.5	16	6	10			Autumn	7	

Course Nature		Course Number	Course Name	Credits	Class Hours					Semester	Recommended Elective Semester	Notes
					overall class hour	**lecture**	**deliberate**	**Experiments / practice**	**on-line**			
	Core Compulsory Courses for General Education	G2408101	Computational Thinking and Artificial Intelligence Fundamentals	2	32	32				Autumn	1	
		G2412901	Basic Academic English	2	32	32				Autumn	3	
		G2412905	Advanced Academic English	2	32	32				spring	4	
		G2413101	Physical Education (1)	0.5	24	24				Autumn	1	
		G2413102	Physical Education (2)	0.5	24	24				spring	2	
		G2413103	Physical Education (3)	0.5	24	24				Autumn	3	
		G2413104	Physical Education (4)	0.5	24	24				spring	4	
		G2413105	Physical Education (5)	0.5	24	24				Autumn	5	
		G2413106	Physical Education (6)	0.5	24	24				spring	6	
		G2430001	Mental Health Education for College	2	32	24			8	Autumn	1	

Course Nature		Course Number	Course Name	Credits	Class Hours					Semester	Recommended Elective Semester	Notes
					overall class hour	**lecture**	**deliberate**	**Experiments / practice**	**on-line**			
			Students									
		G2430002	Military Theory and National Security	3	52	28		4	20	Autumn	1	
		Total 29 Credits for General Education Required Courses										
General Education Courses	General Education Elective Courses	Module 1: "Four Histories" Courses		1	16					All	Online summer vacation for freshman year	Take at least one elective course
		Module 2: Energy Resources and Human Civilization								All	All	
		Module 3: Artistic Experience and Aesthetic Appreciation		2.0	32					All	All	At least 2 credits must be completed, including the required course "The Beauty of Art" (1 credit).
		Module 4: Innovation Education and Career Development		2.5	40					All	All	At least 2.5 credits, including Career Planning and Career Development (compulsory, 0.5 credits)
		Module 5: Chinese Culture and World Civilization								All	All	

Course Nature		Course Number	Course Name	Credits	Class Hours					Semester	Recommended Elective Semester	Notes
					overall class hour	**lecture**	**deliberate**	**Experiments / practice**	**on-line**			
		Module 6: Scientific Spirit and Life Care								All	All	
		Module 7: Social Cognition and Philosophical Examination								All	All	
		Module 8: Innovative Thinking and Management Communication								All	All	Management courses are required
		General education electives must be completed for a minimum of 14 credits.										
	General Education Practical Course	P2418501	Grand Ideological and Political Course Practice	2	2 weeks			2 weeks		spring	4	
		P2412901	Basic English Practice (1)	1	32	32				Autumn	1	
		P2412902	Understanding Contemporary China (Speech)	0	16	4			12	Autumn	1	
		P2412903	Basic English Practice (2)	1	32	32				spring	2	
		P2412904	Understanding Contemporary China (Translation)	0	16	4			12	spring	2	
		P2408101	Computational Thinking and AI Fundamentals Lab Practice	1	32			32		Autumn	1	
		P2430005	Military Training	2	2 weeks			2 weeks		Autumn	1	

Course Nature		Course Number	Course Name	Credits	Class Hours					Semester	Recommended Elective Semester	Notes
					overall class hour	**lecture**	**deliberate**	**Experiments / practice**	**on-line**			
		P2430103	Labor Education and Practice	1	32			26	6	All	1-7	
		General Education Practical Courses: Minimum 8 credits required										
General education courses must be completed for a minimum of 51 credits.												
Fundamental Courses for Major Disciplines	Core Courses for Major Categories	F2410801	Advanced Mathematics (1)	2.5	40	40				Autumn	1	
		F2410802	Advanced Mathematics (2)	2.5	40	38		2		Autumn	1	
		F2410803	Advanced Mathematics (3)	3	48	48				spring	2	
		F2410804	Advanced Mathematics (4)	3	48	46		2		spring	2	
		F2414101	University Physics (1)	3.5	56	42	6		8	spring	2	
		F2414102	University Physics (2)	3.5	56	42	6		8	Autumn	3	
		F2406501	University chemistry	2	32	32				Autumn	1	
		F2410805	linear algebra	2.5	40	32			8	spring	2	
		F2410806	Probability Theory and Mathematical Statistics	2.5	40	40				Autumn	3	
		F2402105	engineering mechanics C	4.5	72	64		8		Autumn	3	

Course Nature		Course Number	Course Name	Credits	Class Hours					Semester	Recommended Elective Semester	Notes
					overall class hour	**lecture**	**deliberate**	**Experiments / practice**	**on-line**			
		F2403103	engineering graphics C	2.5	40	32	16			spring	2	
		F2408104	Python programming	2.5	40	40				spring	2	
		F2404504	Electrical Engineering and Electronic Technology D	3	48	40		8		spring	4	
		F2405201	Introduction to Geotechnical Engineering (International)	0.5	8					Autumn	3	
		F2405502	general geology	3	48	40	8			spring	2	
		F2405506	architectonic geology B	2	32	32				Autumn	3	
		F2407153	metrology B	2	32	24	8			spring	4	
	The core required courses for the major program total 45 credits.											
Fundamental Courses for Major Discipline	Basic Practical Courses for Major Categories	P2414101	Physics Experiment (1)	1	32			32		spring	2	
		P2414102	Physics Experiment (2)	1	32			32		Autumn	3	
		P2408104	On the Practice of Python Programming	1	32			32		spring	2	
		P2405501	geological knowledge practice	2	2 weeks			2 weeks		Autumn	3	
		P2405510	Comprehensive Basic Geology Practice B	4	4 weeks			4 weeks		spring	6	

Course Nature		Course Number	Course Name	Credits	Class Hours					Semester	Recommended Elective Semester	Notes
					overall class hour	**lecture**	**deliberate**	**Experiments / practice**	**on-line**			
s		The foundational practical courses in the major category total 9 credits.										
The foundational courses for the major program total 54 credits.												
specialized courses	Core professional courses	M2405201	engineering geomorphology	2	32	24		8		Autumn	3	
		M2405202	Fundamentals of Engineering Geology and Hydrogeology (Teaching Demonstration)	3	48	38	4		6	spring	4	creational education Demonstration Course
		M2405203	Rock Mechanics (International)	2	32	28		4		spring	4	
		M2405204	Soil Science and Soil Mechanics (Teaching Demonstration)	3	48	38		10		spring	4	Ideological and Political Education in Courses Demonstration Course
		M2405205	Geotechnical Engineering Survey (Industry-Education Integration)	3	48	42		6		Autumn	5	
		M2405206	geotechnical drilling and excavation engineering	2	32	28		4		Autumn	5	
		subtotal		15	240	198	4	32	6			
		Course Group on Engineering Geology and Geotechnical Engineering										
		M2405207	principles of engineering geology design	3	48	44		4		Autumn	5	
		M2405208	Foundation and Substructure Construction	2.5	40	40				Autumn	5	
		M2405209	Geotechnical Engineering Testing and Monitoring (Industry-Education Integration)	2	32	32				spring	6	
		subtotal		7.5	120	116		4				

Course Nature		Course Number	Course Name	Credits	Class Hours					Semester	Recommended Elective Semester	Notes
					overall class hour	**lecture**	**deliberate**	**Experiments / practice**	**on-line**			
		Intelligent Drilling Engineering Course Group										
		M2405210	Geological Engineering Equipment and Intelligence (Industry-Education Integration)	3	48	40		8		Autumn	5	
		M2405211	Drilling Technology and Construction	2.5	40	32		8		Autumn	5	
		M2405212	geological engineering	2	32	32				spring	6	
		subtotal		7.5	120	104		16				
		Students must complete at least one group of core major courses.										
		The core curriculum consists of 22.5 credits.										
	Professional Elective Courses	M2405213	Geotechnical Engineering Construction (International)	2	32	32				spring	6	
		M2405214	Geological Disaster Prevention and Control Technology (Industry-Education Integration)	2	32	28		4		Autumn	7	
		M2405215	Introduction to Economic Management of Geology	2	32	28	4			spring	6	
		M2405216	numerical simulation of geotechnical engineering	2	32	16		16		spring	6	
		M2405217	environmental geotechnics	2	32	32				Autumn	7	
		M2405218	geothermal engineering	2	32	32				Autumn	7	
		M2405504	Paleontology and Stratigraphy B	2	32	32				spring	4	

Course Nature		Course Number	Course Name	Credits	Class Hours					Semester	Recommended Elective Semester	Notes
					overall class hour	**lecture**	**deliberate**	**Experiments / practice**	**on-line**			
		M2405220	non excavation works	2	32	32				Autumn	7	
		M2405221	Mine Geological Environment Protection and Treatment	2	32	32				spring	6	
		Professional electives must be completed for a minimum of 4 credits.										
specialized courses	Professional Practice Course	P2405201	Innovation Practice of Geotechnical Engineering Specialty	2	2 weeks			2 weeks		Autumn	7	
		P2405202	rock and soil testing technology test	1	32			32		spring	6	
		P2405203	Course Design of Geotechnical Engineering Investigation	1	1 week			1 week		spring	6	
		P2405204	geological engineering simulation training	2	2 weeks			2 weeks		spring	8	
		P2405205	Training in Geotechnical Engineering Drawing	0.5	16			16		spring	8	
		P2405206	Professional Internship and Training	6	6 weeks			6 weeks		Autumn	7	
		P2405207	Graduation Project (Thesis)	6	12 weeks			12 weeks		spring	8	
		P2405208	graduation field work	3	3 weeks			3 weeks		All	7 or 8	
		Course Group on Engineering Geology and Geotechnical Engineering										
		P2405209	Design of geotechnical engineering course	2	2 weeks			2 weeks		spring	6	
		P2405210	Course Design for Construction Organization	1	1 week			1 week		Autumn	7	
		Intelligent Drilling Engineering Course Group										

Course Nature		Course Number	Course Name	Credits	Class Hours					Semester	Recommended Elective Semester	Notes
					overall class hour	**lecture**	**deliberate**	**Experiments / practice**	**on-line**			
		P2405211	Course Design of Drilling Equipment and Technology	2	2 weeks			2 weeks		spring	6	
		P2405212	Construction Organization Course Design B	1	1 week			1 week		Autumn	7	
		Professional practice requires completing at least one course group.										
		Professional practice courses total 24.5 credits										
The professional knowledge course consists of 51 credits.												
Extended Course	This is a specialist. line of business make rubbings from inscriptions open up class group	E2405201	Coal Mine Engineering Geology and Hydrogeology	2	32	28		4		spring	6	
		E2405202	Geological Energy Storage Technology and Engineering	2	32	28	4			spring	6	AI Deep Integration Course
		Students must complete at least 2 credits of this major's extended courses.										
	Cross-disciplinar	I2405501	Fundamentals of Mineral Petrology	2	32	28		4		Autumn	3	
		I2405303	underground water dynamics B	2	32	28		4		Autumn	5	

Course Nature		Course Number	Course Name	Credits	Class Hours					Semester	Recommended Elective Semester	Notes
					overall class hour	**lecture**	**deliberate**	**Experiments / practice**	**on-line**			
	y Extension Course Group	I2405405	Fundamentals of Geophysics	2	32	32				spring	4	
		I2405610	GeoAI:An Introduction to Artificial Intelligence in Geoscience	2	32	32				Autumn	3	
		I2401203	Intelligent Perception and Decision-making in Mining	2	32	28	4			spring	6	
		I2405606	Principles and Applications of Geographic Information System	2	32	24		8		spring	4	
		I2405611	Numerical Simulation Method and Application of Multi-Physical Chemical Field Coupling	2	32	32				Autumn	5	
		Students must complete at least 4 credits of cross-disciplinary expansion courses.										
Professional development courses must be completed for a minimum of 6 credits.												
auxiliary word for ordinal numbers 2 class hall		S2430101	Read Classics	0						All	7	
		S2430102	social practice	2	2 weeks					All	7	
		S2430103	Volunteer Public Service	1	32					All	7	
		S2430104	Campus cultural activities (including aesthetic education practices)	1	1 week					All	7	
The second classroom course is worth 4 credits.												

Teaching Schedule of Resource Exploration Engineering

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiment/Practice	on-line			
General Education Courses	liberal education Core Compulsory Courses	G2418101	Basic Principles of Marxism	2.5	40	40				Autumn	1	
		G2418201	An Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	2.5	40	40				Autumn	3	
		G2418301	Essentials of Chinese Modern History	2.5	40	40				spring	2	
		G2418401	Ideological and Moral Education and the Rule of Law	2.5	40	40				spring	4	
		G2418501	An Introduction to Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era	3	48	48				spring	4	
		G2418601	Situation and Policy (1)	0.5	16	6	10			spring	2	
		G2418602	Situation and Policy (2)	0.5	16	6	10			spring	4	
		G2418603	Situation and Policy (3)	0.5	16	6	10			spring	6	
		G2418604	Situation and Policy (4)	0.5	16	6	10			Autumn	7	
	General Educa	G2408101	Computational Thinking and Artificial Intelligence Intelligent Foundation	2	32	32				Autumn	1	

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiment/Practice	on-line			
	tion Compulsory Courses	G2412901	Basic Academic English	2	32	32				Autumn	3	
		G2412905	Advanced Academic English	2	32	32				spring	4	
		G2413101	Sports (1)	0.5	24	24				Autumn	1	
		G2413102	Sports (2)	0.5	24	24				spring	2	
		G2413103	Sports (3)	0.5	24	24				Autumn	3	
		G2413104	Sports (4)	0.5	24	24				spring	4	
		G2413105	Sports (5)	0.5	24	24				Autumn	5	
		G2413106	Sports (6)	0.5	24	24				spring	6	
		G2430001	Mental Health Education for College Students	2	32	24			8	Autumn	1	
		G2430002	Military Theory and National Security	3	52	28		4	20	Autumn	1	
	The general education core curriculum consists of 29 credits.											
General Education Cour	General Education Electi	Module 1: "Four Histories" Course		1	16					All	Summer break of freshman year, online	Take at least one course

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiment/Practice	on-line			
ses	ve Courses	Module 2: Energy Resources and Human Civilization								All	All	
		Module 3: Artistic Experience and Aesthetic Appreciation		2	32					All	All	At least 2 credits must be completed, including the required course "The Beauty of Art" (1 credit).
		Module 4: Innovative Education and Career Development		2.5	40					All	All	At least 2.5 credits, including Career Planning and Career Development (compulsory, 0.5 credits)
		Module 5: Chinese Culture and World Civilization								All	All	
		Module 6: Scientific Spirit and Life Care								All	All	
		Module 7: Social Cognition and Philosophical Review								All	All	
		Module 8: Innovative Thinking and Management Communication								All	All	To be taken Management courses
		General education electives must be completed for a minimum of 14 credits.										
	General Education	P2418501	The Practice of "Big Ideological and Political Course"	2	2 weeks			2 weeks		spring	4	
		P2412901	Basic English Practice (1)	1	32	32				Autumn	1	

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiment/Practice	on-line			
	Practical Course	P2412902	Understanding Contemporary China (Speech)	0	16	4			12	Autumn	1	
		P2412903	Basic English Practice (2)	1	32	32				spring	2	
		P2412904	Understanding Contemporary China (Translation)	0	16	4			12	spring	2	
		P2408101	Computer Practice Based on Computational Thinking and Artificial Intelligence	1	32			32		Autumn	1	
		P2430005	military training	2	2 weeks			2 weeks		Autumn	1	
		P2430103	Labor Education and Practice	1	32			26	6	All	1-7	
		General education practical courses must be completed for a minimum of 8 credits.										
General education courses must be completed for a minimum of 51 credits.												
Fundamental Courses for Major Disc	Core Courses for Major Categories	F2410801	Advanced Mathematics (1)	2.5	40	40				Autumn	1	
		F2410802	Advanced Mathematics (2)	2.5	40	38		2		Autumn	1	
		F2410803	Advanced Mathematics (3)	3	48	48				spring	2	
		F2410804	Advanced Mathematics (4)	3	48	46		2		spring	2	

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiment/Practice	on-line			
iplines		F2414101	University Physics (1)	3.5	56	42	6		8	spring	2	
		F2414102	University Physics (2)	3.5	56	42	6		8	Autumn	3	
		F2406501	University chemistry	2	32	32				Autumn	1	
		F2410805	linear algebra	2.5	40	32			8	spring	2	
		F2410806	Probability Theory and Mathematical Statistics	2.5	40	40				Autumn	3	
		F2402105	engineering mechanics C	4.5	72	64		8		Autumn	3	
		F2403103	engineering graphics C	2.5	40	32	16			spring	2	
		F2408104	Python programming	2.5	40	40				spring	2	
		F2405501	Introduction to the Specialty of Resource Exploration Engineering	0.5	8					Autumn	3	
		F2407153	metrology B	2	32	24	8			spring	4	
		F2405502	general geology	3	48	40		8		spring	2	
	The core required courses for the major program total 40 credits.											

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiment/Practice	on-line			
	Basic Practical Courses for Major Categories	P2414101	Physics Experiment (1)	1	32			32		spring	2	
		P2414102	Physics Experiment (2)	1	32			32		Autumn	3	
		P2408104	On the Practice of Python Programming	1	32			32		spring	2	
		P2405501	geological knowledge practice	2	2 weeks			2 weeks		Autumn	3	
		The foundational practical course for the major category is worth 5 credits.										
The foundational courses for the major program total 45 credits.												
specialized courses	Core professional courses	M2405501	architectonic geology A	3	48	48				Autumn	3	
		M2405503	Paleontology and Stratigraphy A	3	48	40		8		spring	4	
		M2405505	Mineralogy and Crystal Optics (demonstration lesson)	2.5	40	40				Autumn	3	creational education Demonstration Course
		M2405506	sedimentary petrology	2	32	32				spring	4	
		M2405507	MAGMATIC ROCKS AND METAMORPHIC ROCKS	2	32	32				spring	4	
		M2405508	geochemistry	2	32	32				Autumn	5	
		M2405509	energy geology	3	48	48				Autumn	5	
		M2405510	Sedimentology and Petrofacies	2	32	28	4			spring	6	

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiment/Practice	on-line			
			Paleogeography									
		M2405511	Exploration and Evaluation of Mineral Resources	2	32	32				spring	6	
		M2405512	Fundamentals of Geophysics	2	32	24		8		Autumn	5	
		subtotal		23.5	376	356	4	16				
		Class Group 1: Mineral Resources and Geoscience Big Data										
		M2405513	Regional geology and tectonics	1.5	24	24				Autumn	5	
		M2405514	Mineralogy (Teaching Demonstration)	2	32	24		8		Autumn	5	creational education Demonstration Course
		M2405613	geoscience big data	1	16	16				Autumn	5	
		M2405515	mineralogy of mine	2	32	24	8			spring	6	
		M2405516	organic petrology (international)	1	16	14			2	spring	6	
		M2405517	Geological Environment Investigation and Evaluation (Industry-Education Integration)	1	16	12	4			Autumn	7	
		subtotal		8.5	136	114	12	8	2			
		Class Group 2: New Energy Exploration										
		M2405518	mechanics of oil and gas seepage	1	16	16				Autumn	5	
		M2405519	Introduction to New Energy	1.5	24	24				Autumn	5	

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiment/Practice	on-line			
		M2405516	organic petrology (international)	1	16	14			2	spring	6	
		M2405520	coalbed methane geology	2	32	32				spring	6	
		M2405521	Fundamentals of Geothermal Science (Teaching Demonstration)	1	16	14	2			Autumn	5	creational education Demonstration Course
		M2405522	Unconventional Energy Extraction Engineering (Industry-Education Integration)	2	32	28	4			Autumn	7	
		subtotal		8.5	136	128	6	0	2			
specialized courses	Core professional courses	Class Group 3: Environmental Geology										
		M2405523	Geomorphology and Quaternary Geology	2	32	32				Autumn	5	
		M2405524	Environmental Geology (Teaching Demonstration)	2	32	32				Autumn	5	creational education Demonstration Course
		M2405525	disaster geology (international)	1	16	10			6	spring	6	
		M2405526	Modern Geoscience Analysis and Testing Technology	1	16	16				Autumn	5	
		M2405527	Introduction to Remote Sensing of Environment and Resources	1.5	24	20	4			spring	6	
		M2405528	Mine Geological Environment and Management (Industry-Education Integration)	1	16	12	4			Autumn	7	

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiment/Practice	on-line			
		subtotal		8.5	136	122	8		6			
		The core curriculum consists of 32 credits.										
	Professional Elective Courses	M2405529	Frontier Lecture of Resource Exploration Engineering Specialty	0.5	8	8				spring	6	
		M2405530	Writing Scientific Papers	0.5	8	8				spring	6	
		M2405531	Introduction to Engineering Ethics	0.5	8	8				Autumn	7	
		M2405532	geological interpretation of well logging	1	16	16				Autumn	7	
		M2405533	mine gas control	1	16	16				spring	6	
		M2405534	mineral resources economics	1	16	16				Autumn	7	
		M2405535	reservoir description	1	16	16				Autumn	5	
		M2405536	reservoir geology	1	16	16				spring	6	
		M2405537	tourism geology	1	16	16				Autumn	7	
		M2405611	computer geological mapping	1	16	16				spring	6	

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiment/Practice	on-line			
		M2405612	Geological Data Mining and Machine Learning	1	16	16				Autumn	5	
		M2405538	Carbon Neutrality Science and Engineering	1	16	12	4			Autumn	5	
		Professional electives must be completed for a minimum of 2 credits.										
specialized courses	Professional Practice Course	P2405502	Mineralogy and Crystal Optics Course Experiment	2	64			64		Autumn	3	
		P2405503	Experimental Course of Magmatic Petrology and Metamorphic Petrology	1	32			32		spring	4	
		P2405504	Design of the course of structural geology	1	1 week			1 week		Autumn	3	
		P2405505	Experimental Course of Paleontology and Stratigraphy	0.5	16			16		spring	4	
		P2405506	Design of Mineral Resources Exploration and Evaluation Course	1	1 week			1 week		spring	6	
		P2405507	Experimental course of sedimentary petrology	0.5	16			16		spring	4	
		P2405508	Experimental Course of Sedimentology and Petrofacies Paleogeography	0.5	16			16		spring	6	
		P2405509	Comprehensive Basic Geology Practice A	4.5	4.5 weeks			4.5 weeks		spring	6	
		P2405511	Comprehensive Experiment of Energy Geology	1	32			32		Autumn	5	
		P2405512	Innovation Practice of Resource Exploration Engineering Specialty	2	2 weeks			2 weeks		Autumn	7	
		P2405513	fieldwork	2	2 weeks			2 weeks		Autumn	7	

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiment/Practice	on-line			
		P2405514	graduation field work	2	2 weeks			2 weeks		All	7 or 8	
		P2405515	Graduation Project (Thesis)	8	8 weeks			8 weeks		spring	8	
		Professional practice courses total 26 credits										
The professional knowledge course is worth 60 credits.												
Extended Course	Professional Extension Courses	E2405501	China geology	1	16	16				Autumn	7	
		E2405502	Modern Geoscience Analysis and Testing Technology	1	16	16				Autumn	7	AI Deep Integration Course
		E2405503	high basin analysis	1	16	16				spring	8	
		E2405504	structural analysis	1	16	16				spring	8	
		E2405505	digital geology	1	16	16				Autumn	7	
		Students must complete at least 2 credits of this major's extended courses.										
	Cross-disciplinary Extension Course	I2405301	Fundamentals of Hydrogeology B	2	32	28		4		Autumn	5	
		I2405204	drilling and deep earth engineering	2	32	28		4		spring	6	
		I2405201	engineering geology	2	32	28	4			Autumn	5	
		I2405605	Application of Big Data in Geoscience	2	32	32				spring	4	
		I2405610	GeoAI:An Introduction to Artificial Intelligence in Geoscience	2	32	32				Autumn	3	
		I2401104	deep underground engineering	1	16	16				spring	4	
		I2423102	Tracing the Power Electronics	1	16	12	4			spring	4	
		I2415303	Introduction to Urban Space Aesthetics	1	16	12	2	2		Autumn	5	
		Students must complete at least 4 credits of cross-disciplinary expansion courses.										

curriculum property	Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
				overall class hour	lecture	deliberate	Experiment/Practice	on-line			
Professional development courses must be completed for a minimum of 6 credits.											
auxiliary word for ordinal numbers 2 class hall	S2430101	Read Classics	0						All	7	
	S2430102	social practice	2	2 weeks					All	7	
	S2430103	Volunteer Public Service	1	32					All	7	
	S2430104	Campus cultural activities (including aesthetic education practices)	1	1 week					All	7	
The second classroom course is worth 4 credits.											

Teaching Schedule of Geophysics Major

Course Nature		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
General Education Courses	Core Compulsory Courses for General Education	G2418101	Basic Principles of Marxism	2.5	40	40				Autumn	1	
		G2418201	An Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	2.5	40	40				Autumn	3	
		G2418301	Essentials of Chinese Modern History	2.5	40	40				spring	2	
		G2418401	Ideological and Moral Education and the Rule of Law	2.5	40	40				spring	4	
		G2418501	An Introduction to Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era	3	48	48				spring	4	
		G2418601	Situation and Policy (1)	0.5	16	6	10			spring	2	
		G2418602	Situation and Policy (2)	0.5	16	6	10			spring	4	
		G2418603	Situation and Policy (3)	0.5	16	6	10			spring	6	
		G2418604	Situation and Policy (4)	0.5	16	6	10			Autumn	7	
	General Education	G2408101	Fundamentals of Computational Thinking and Artificial Intelligence	2	32	32				Autumn	1	
		G2412901	Basic Academic English	2	32	32				Autumn	3	

Course Nature		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
	Compulsory Courses	G2412905	Advanced Academic English	2	32	32				spring	4	
		G2413101	Sports (1)	0.5	24	24				Autumn	1	
		G2413102	Sports (2)	0.5	24	24				spring	2	
		G2413103	Sports (3)	0.5	24	24				Autumn	3	
		G2413104	Sports (4)	0.5	24	24				spring	4	
		G2413105	Sports (5)	0.5	24	24				Autumn	5	
		G2413106	Sports (6)	0.5	24	24				spring	6	
		G2430001	Mental Health Education for College Students	2	32	24			8	Autumn	1	
		G2430002	Military Theory and National Security	3	52	28		4	20	Autumn	1	
		The general education core curriculum consists of 29 credits.										
General Education Courses	General Education Electi	Module 1: "Four Histories" Courses		1	16				All	All	Online summer vacation for freshman year	Take at least one elective course

Course Nature		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
	ve Courses	Module 2: Energy Resources and Human Civilization								All	All	
		Module 3: Artistic Experience and Aesthetic Appreciation		2	32					All	All	At least 2 credits must be completed, including the required course "The Beauty of Art" (1 credit).
		Module 4: Innovative Education and Career Development		2.5	40					All	All	At least 2.5 credits, including Career Planning and Career Development (compulsory, 0.5 credits)
		Module 5: Chinese Culture and World Civilization								All	All	
		Module 6: Scientific Spirit and Life Care								All	All	
		Module 7: Social Cognition and Philosophical Review								All	All	
		Module 8: Innovative Thinking and Management Communication								All	All	Management courses are required
		General education electives must be completed for a minimum of 14 credits.										
	General Education	P2418501	The Practice of "Big Ideological and Political Course"	2	2 weeks			2 weeks		spring	4	
		P2412901	Basic English Practice (1)	1	32	32				Autumn	1	

Course Nature		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
	Practical Course	P2412902	Understanding Contemporary China (Speech)	0	16	4			12	Autumn	1	
		P2412903	Basic English Practice (2)	1	32	32				spring	2	
		P2412904	Understanding Contemporary China (Translation)	0	16	4			12	spring	2	
		P2408101	Computer Practice Based on Computational Thinking and Artificial Intelligence	1	32			32		Autumn	1	
		P2430005	military training	2	2 weeks			2 weeks		Autumn	1	
		P2430103	Labor Education and Practice	1	32			26	6	All	1-7	
		General education practical courses must be completed for a minimum of 8 credits.										
General education courses must be completed for a minimum of 51 credits.												
Fundamental Courses for Major Disciplines	Core Courses for Major Categories	F2410801	Advanced Mathematics (1)	2.5	40	40				Autumn	1	
		F2410802	Advanced Mathematics (2)	2.5	40	38		2		Autumn	1	
		F2410803	Advanced Mathematics (3)	3	48	48				spring	2	
		F2410804	Advanced Mathematics (4)	3	48	46		2		spring	2	
		F2414101	University Physics (1)	3.5	56	42	6		8	spring	2	
		F2414102	University Physics (2)	3.5	56	42	6		8	Autumn	3	

Course Nature		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
		F2410805	linear algebra	2.5	40	32			8	spring	2	
		F2410806	Probability Theory and Mathematical Statistics	2.5	40	40				Autumn	3	
		F2403103	engineering graphics C	2.5	40	32	16			spring	2	
		F2408104	Python programming	2.5	40	40				spring	2	
		F2404501	Electrical Engineering and Electronic Technology A (1)	2.5	40	40				Autumn	3	
		F2404502	Electrical Engineering and Electronic Technology A (2)	3	48	48				spring	4	
		F2407153	metrology B	2	32	24		8		spring	4	
		F2410811	engineering mathematics	2.5	40	40				Autumn	3	
		F2405502	general geology	3	48	40		8		spring	2	
		F2405506	architectonic geology B	2	32	32				Autumn	3	
		F2405440	Introduction to Geophysics	2	32	32				spring	2	
		F2405427	theory of exploration electromagnetic field	2	32	32				spring	4	
		F2405402	seismic wave dynamics	2	32	32				spring	4	
	The core required courses for the major program total 49 credits.											
	Basic Practical Cours	P2414101	Physics Experiment (1)	1	32			32		spring	2	
		P2414102	Physics Experiment (2)	1	32			32		Autumn	3	
		P2408104	On the Practice of Python Programming	1	32			32		spring	2	

Course Nature		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
	es for Major Categories	P2404501	Electrical Engineering and Electronic Technology Experiment A (1)	0.5	16			16		Autumn	3	
		P2404502	Electrical Engineering and Electronic Technology Experiment A (2)	0.5	24			24		spring	4	
		P2405501	geological knowledge practice	2	2 weeks			2 weeks		Autumn	3	
		P2405510	Comprehensive Basic Geology Practice B	4	4 weeks			4 weeks		spring	6	
		The foundational practical course for the major category is worth 10 credits.										
The foundational courses for the major program total 59 credits.												
specialized courses	Core professional courses	M2405428	petrophysics	2	32	32				Autumn	3	
		M2405432	Principle and Application of Heavy Magnetic Exploration	2	32	32				spring	4	
		M2405425	Digital Signal Analysis and Data Processing	2	32	32				Autumn	5	
		M2405441	Principle of Electrical Exploration (Teaching Demonstration)	3.5	56	56				Autumn	5	Model Course on Ideological and Political Education
		M2405430	Principle of Seismic Exploration (Teaching Demonstration)	3.5	56	56				Autumn	5	Innovative Education Demonstration Course
		M2405406	geophysical log	2	32	32				spring	6	
		M2405435	Data Processing and Interpretation of Electrical Prospecting	2	32	32				spring	6	

Course Nature		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
		M2405433	SEISMIC PROSPECTING DATA PROCESSING AND INTERPRETATION (INTERNATIONAL)	2.5	40	40				spring	6	
		M2405408	mine geophysical prospecting	2	32	32				Autumn	7	
		subtotal		21.5	344	344						
		The core curriculum consists of 21.5 credits.										
	Professional Elective Courses	M2405434	Engineering and Environmental Geophysical Exploration (International)	2	32	32				Autumn	5	
		M2405460	computational method	2	32	32				Autumn	5	
		M2405414	Sensors and Instruments	2	32	32				Autumn	5	
		Professional electives must be completed for a minimum of 4 credits.										
	Professional Practice Course	P2405412	Basic Geophysical Experiments A	1	32			32		spring	4	
		P2405413	Basic Geophysical Experiments B	1.5	48			48		Autumn	5	
		P2405415	fieldwork	4	4 weeks			4 weeks		spring	6	
		P2405414	Geophysics Course Design	2	64			64		Autumn	7	
		P2405404	Innovation Practice of Geophysics Specialty	2	2 weeks			2 weeks		Autumn	7	

Course Nature		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
		P2405408	graduation field work	2	2 weeks			2 weeks		All	7 or 8	
		P2405411	Graduation Project (Thesis)	8	16 weeks			16 weeks		spring	8	
		Professional practice courses total 20.5 credits										
The professional knowledge course is worth 46 credits.												
Extended Course	Professional Extension Courses	E2405401	geophysical numerical simulation	2	32	28		4		spring	6	
		E2405438	Geophysical Artificial Intelligence and Machine Learning	2	32	32				spring	6	AI Deep Integration Course
		E2405419	digital image processing	2	32	32				spring	6	
		Students must complete at least 2 credits of this major's extended courses.										
	Cross-disciplinary Extension Course	I2405207	Optical Fiber Sensing and Monitoring Technology	2	32	32				spring	4	
		I2405301	Fundamentals of Hydrogeology B	2	32	32				spring	4	
		I2405204	drilling and deep earth engineering	2	32	28		4		spring	4	
		I2408301	mine big data	2	32	32				Autumn	5	
		I2408201	Network Technology and Application	2	32	32				Autumn	5	
		I2405607	Remote Sensing Development Technology and Application	2	32	32				Autumn	5	
		I2410103	MATLAB Programming and Practice	2	32	26		6		spring	6	

Course Nature		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
		I2405612	Application of Geoscience Database	2	32	32				spring	6	
		Students must complete at least 4 credits of cross-disciplinary expansion courses.										
Professional development courses must be completed for a minimum of 6 credits.												
auxiliary word for ordinal numbers 2 class hall		S2430101	Read Classics	0						All	7	
		S2430102	social practice	2	2 weeks					All	7	
		S2430103	Volunteer Public Service	1	32					All	7	
		S2430104	Campus cultural activities (including aesthetic education practices)	1	1 week					All	7	
The second classroom course is worth 4 credits.												

Teaching Schedule of Hydrology and Water Resources Engineering

curriculum property		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
General Education Courses	Core Compulsory Courses for General Education	G2418101	Basic Principles of Marxism	2.5	40	40				Autumn	1	
		G2418201	An Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	2.5	40	40				Autumn	3	
		G2418301	Essentials of Chinese Modern History	2.5	40	40				spring	2	
		G2418401	Ideological and Moral Education and the Rule of Law	2.5	40	40				spring	4	
		G2418501	An Introduction to Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era	3	48	48				spring	4	
		G2418601	Situation and Policy (1)	0.5	16	6	10			spring	2	
		G2418602	Situation and Policy (2)	0.5	16	6	10			spring	4	
		G2418603	Situation and Policy (3)	0.5	16	6	10			spring	6	
		G2418604	Situation and Policy (4)	0.5	16	6	10			Autumn	7	
	General	G2408101	Fundamentals of Computational Thinking and Artificial Intelligence	2	32	32				Autumn	1	

	Education Compulsory Courses	G2412901	Basic Academic English	2	32	32				Autumn	3	
		G2412905	Advanced Academic English	2	32	32				spring	4	
		G2413101	Sports (1)	0.5	24	24				Autumn	1	
		G2413102	Sports (2)	0.5	24	24				spring	2	
		G2413103	Sports (3)	0.5	24	24				Autumn	3	
		G2413104	Sports (4)	0.5	24	24				spring	4	
		G2413105	Sports (5)	0.5	24	24				Autumn	5	
		G2413106	Sports (6)	0.5	24	24				spring	6	
		G2430001	Mental Health Education for College Students	2	32	24			8	Autumn	1	
		G2430002	Military Theory and National Security	3	52	28		4	20	Autumn	1	
	The general education core curriculum consists of 29 credits.											
General Education Courses	General Education Elective Courses	Module 1: "Four Histories" Course		1	16						Online summer vacation for freshman year	Take at least one elective course
		Module 2: Energy Resources and Human Civilization								All	All	
		Module 3: Artistic Experience and Aesthetic Appreciation		2	32					All	All	At least 2 credits must be completed, including

												the required course "The Beauty of Art" (1 credit).
		Module 4: Innovative Education and Career Development		2.5	40					All	All	At least 2.5 credits, including Career Planning and Career Development (compulsory, 0.5 credits)
		Module 5: Chinese Culture and World Civilization								All	All	
		Module 6: Scientific Spirit and Life Care								All	All	
		Module 7: Social Cognition and Philosophical Review								All	All	
		Module 8: Innovative Thinking and Management Communication								All	All	Management courses are required curriculum
		General education electives must be completed for a minimum of 14 credits.										
	General Education Practical Course	P2418501	The Practice of "Big Ideological and Political Course"	2	2 weeks			2 weeks		spring	4	
		P2412901	Basic English Practice (1)	1	32	32				Autumn	1	
		P2412902	Understanding Contemporary China (Speech)	0	16	4			12	Autumn	1	
		P2412903	Basic English Practice (2)	1	32	32				spring	2	
		P2412904	Understanding Contemporary China (Translation)	0	16	4			12	spring	2	

		P2408101	Computer Practice Based on Computational Thinking and Artificial Intelligence	1	32			32		Autumn	1	
		P2430005	military training	2	2 weeks			2 weeks		Autumn	1	
		P2430103	Labor Education and Practice	1	32			26	6	All	1-7	
		General education practical courses must be completed for a minimum of 8 credits.										
General education courses must be completed for a minimum of 51 credits.												
Fundamental Courses for Major Disciplines	Core Courses for Major Categories	F2410801	Advanced Mathematics (1)	2.5	40	40				Autumn	1	
		F2410802	Advanced Mathematics (2)	2.5	40	38		2		Autumn	1	
		F2410803	Advanced Mathematics (3)	3	48	48				spring	2	
		F2410804	Advanced Mathematics (4)	3	48	46		2		spring	2	
		F2414101	University Physics (1)	3.5	56	42	6		8	spring	2	
		F2414102	University Physics (2)	3.5	56	42	6		8	Autumn	3	
		F2406501	University chemistry	2	32	32				Autumn	1	
		F2410805	linear algebra	2.5	40	32			8	spring	2	
		F2410806	Probability Theory and Mathematical Statistics	2.5	40	40				Autumn	3	
		F2402105	engineering mechanics C	4.5	72	64		8		Autumn	3	
		F2403103	engineering graphics C	2.5	40	32	16			spring	2	
		F2408104	Python programming	2.5	40	40				spring	2	
		F2404504	Electrical Engineering and Electronic Technology D	3	48	40		8		Autumn	3	

		F2405301	Introduction to Hydrology and Water Resources Engineering	0.5	8	8				spring	2	
		F2405502	general geology	3	48	40		8		spring	2	
		F2405506	architectonic geology B	2	32	32				Autumn	3	
		F2407153	metrology B	2	32	24		8		spring	4	
		F2405302	hydraulics	2	32	30		2		Autumn	3	
		F2405303	hydrometeorology	1	16	16				spring	4	
		F2405304	Introduction to Hydraulic Engineering and Engineering Ethics	1	16	16				spring	4	
	The core required courses for the major program total 49 credits.											
Fundamental Courses for Major Disciplines	Elective courses for foundational studies in major disciplines	F2405305	Fundamentals of Hydrogeology	2	32	30		2		spring	4	
		F2405306	hydrometry	1.5	24	22		2		spring	4	
		F2405307	water environmental chemistry	1.5	24	24				Autumn	5	
		Students must complete at least 4 credits of foundational electives in their major category.										
	Basic Practical Courses for Major Categories	P2414101	Physics Experiment (1)	1	32			32		spring	2	
		P2414102	Physics Experiment (2)	1	32			32		Autumn	3	
		P2408104	Python programming Computer practice	1	32			32		spring	2	
		P2405501	geological knowledge practice	2	2 weeks			2 weeks		Autumn	3	
		The foundational practical course for the major category is worth 5 credits.										
The foundational courses for the major program total 58 credits.												
spec	Core	M2405301	principles of hydrology	2	32	32				spring	4	

ialized courses	professional courses	M2405302	underground water dynamics A	3	48	44		4		Autumn	5	
		M2405303	Hydrological Forecast and Hydrological Analysis Calculation	3	48	48				Autumn	5	
		M2405304	Specialized Hydrogeology (Industry-Education Integration)	3	48	44		4		Autumn	5	
		M2405305	Water Resources Evaluation and Utilization in Mining Area	1.5	24	24				spring	6	
		M2405306	Mine Water Disaster Prevention and Control (Teaching Demonstration)	2	32	32				spring	6	Demonstration Course on Integration of Industry and Education
		M2405307	Water Environment Monitoring and Protection (Teaching Demonstration)	1.5	24	24				spring	6	Model Course on Ideological and Political Education
		M2405308	Professional Regulations and Engineering Economy	1	16	16				spring	6	
		subtotal		17	272	264		8				
		The core curriculum consists of 17 credits.										
	Professional Elective Courses	M2405310	International Journal of Groundwater Science Advances	0.5	8	8				Autumn	5	
		M2405311	water conservancy computation	1.5	24	24				spring	6	
		M2405312	Water Resources Planning and Management	1.5	24	24				spring	6	
		M2405313	Water pollution control	1.5	24	24				spring	6	
		M2405314	Frontier Lecture on Hydraulic Engineering (International)	0.5	8	8				Autumn	7	
		Professional electives must be completed for at least 1 credit										
	Professional Practice	P2405301	Hydrological Survey and Production Practice of Hydraulic Engineering	4	4 weeks			4 weeks		spring	4	
		P2405302	Production Practice of Hydrogeological Surveying and Mapping	6	6 weeks			6 weeks		spring	6	basic geology Integrated Practice

	Course	P2405303	Modern Analysis Test and Hydrology Comprehensive Experiment	2	64			64		spring	6	
		P2405304	Design of Water Environment Monitoring and Protection Course	1	1 week			1 week		spring	6	
		P2405305	Course Design of Hydrological Forecast and Hydrological Analysis Calculation	1	1 week			1 week		Autumn	5	
		P2405306	Special Course Design of Hydrogeology	1	1 week			1 week		Autumn	5	
		P2405307	Course Design of Mine Water Disaster Prevention and Control	1	1 week			1 week		Autumn	7	
		P2405308	Innovation Practice of Hydrology and Water Resources Engineering	2	2 weeks			2 weeks		Autumn	7	
		P2405309	graduation field work	3	3 weeks			3 weeks		All	7 or 8	
		P2405310	Graduation Project (Thesis)	8	16 weeks			16 weeks		spring	8	
		The professional practice course is worth 29 credits.										
The professional knowledge course is worth 47 credits.												
Extended Course	Professional Extension Courses	E2405301	International Ecological Hydrology	1.5	24	24				Autumn	7	
		E2405302	Artificial Intelligence and Hydrological Simulation	1.5	24	24				Autumn	7	AI Deep Integration Course
		Students must complete at least 2 credits of this major's extended courses.										
	Cross-disciplinary Extension Course	I2405501	Fundamentals of Mineral Petrology	2	32	28		4		Autumn	3	
		I2405202	engineering geomorphology	2	32	24		8		spring	4	
		I2405606	Principles and Applications of Geographic Information System	2	32	24		8		Autumn	5	
		Students must complete at least 4 credits of cross-disciplinary expansion courses.										
Professional development courses must be completed for a minimum of 6 credits.												

auxiliary word for ordinal numbers 2 class hall	S2430101	Read Classics	0						All	7	
	S2430102	social practice	2	2 weeks					All	7	
	S2430103	Volunteer Public Service	1	32					All	7	
	S2430104	Campus cultural activities (including aesthetic education practices)	1	1 week					All	7	
The second classroom course is worth 4 credits.											

Teaching Schedule of Earth Information Science and Technology

Nature of the course		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
General Education Courses	Core Compulsory Courses for General Education	G2418101	Basic Principles of Marxism	2.5	40	40				Autumn	1	
		G2418201	An Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	2.5	40	40				Autumn	3	
		G2418301	Essentials of Chinese Modern History	2.5	40	40				spring	2	
		G2418401	Ideological and Moral Education and the Rule of Law	2.5	40	40				spring	4	
		G2418501	An Introduction to Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era	3	48	48				spring	4	
		G2418601	Situation and Policy (1)	0.5	16	6	10			spring	2	
		G2418602	Situation and Policy (2)	0.5	16	6	10			spring	4	
		G2418603	Situation and Policy (3)	0.5	16	6	10			spring	6	
		G2418604	Situation and Policy (4)	0.5	16	6	10			Autumn	7	
	General Education	G2408101	Fundamentals of Computational Thinking and Artificial Intelligence	2	32	32				Autumn	1	
		G2412901	Basic Academic English	2	32	32				Autumn	3	

Nature of the course		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
	Compulsory Courses	G2412905	Advanced Academic English	2	32	32				spring	4	
		G2413101	Sports (1)	0.5	24	24				Autumn	1	
		G2413102	Sports (2)	0.5	24	24				spring	2	
		G2413103	Sports (3)	0.5	24	24				Autumn	3	
		G2413104	Sports (4)	0.5	24	24				spring	4	
		G2413105	Sports (5)	0.5	24	24				Autumn	5	
		G2413106	Sports (6)	0.5	24	24				spring	6	
		G2430001	Mental Health Education for College Students	2	32	24			8	Autumn	1	
		G2430002	Military Theory and National Security	3	52	28		4	20	Autumn	1	
		The general education core curriculum consists of 29 credits.										
General Education	General Education Electi	Module 1: "Four Histories" Courses		1	16						Online summer vacation for freshman year	Take at least one elective course

Nature of the course		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
Courses	ve Courses	Module 2: Energy Resources and Human Civilization								All	All	
		Module 3: Artistic Experience and Aesthetic Appreciation		2	32					All	All	At least 2 credits must be completed, including the required course "The Beauty of Art" (1 credit).
		Module 4: Innovative Education and Career Development		2.5	40					All	All	At least 2.5 credits, including Career Planning and Career Development (compulsory, 0.5 credits)
		Module 5: Chinese Culture and World Civilization								All	All	
		Module 6: Scientific Spirit and Life Care								All	All	
		Module 7: Social Cognition and Philosophical Review								All	All	
		Module 8: Innovative Thinking and Management Communication								All	All	Management courses are required
		General education electives must be completed for a minimum of 14 credits.										
	General Education Practical Cour	P2418501	The Practice of "Big Ideological and Political Course"	2	2 weeks			2 weeks		spring	4	
		P2412901	Basic English Practice (1)	1	32	32				Autumn	1	
		P2412902	Understanding Contemporary China (Speech)	0	16	4			12	Autumn	1	

Nature of the course		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
	se	P2412903	Basic English Practice (2)	1	32	32				spring	2	
		P2412904	Understanding Contemporary China (Translation)	0	16	4			12	spring	2	
		P2408101	Computer Practice Based on Computational Thinking and Artificial Intelligence	1	32			32		Autumn	1	
		P2430005	military training	2	2 weeks			2 weeks		Autumn	1	
		P2430103	Labor Education and Practice	1	32			26	6	All	1-7	
		General education practical courses must be completed for a minimum of 8 credits.										
General education courses must be completed for a minimum of 51 credits.												
Fundamental Courses for Major Discipline	Core Courses for Major Categories	F2410801	Advanced Mathematics (1)	2.5	40	40				Autumn	1	
		F2410802	Advanced Mathematics (2)	2.5	40	38		2		Autumn	1	
		F2410803	Advanced Mathematics (3)	3	48	48				spring	2	
		F2410804	Advanced Mathematics (4)	3	48	46		2		spring	2	
		F2414101	University Physics (1)	3.5	56	42	6		8	spring	2	
		F2414102	University Physics (2)	3.5	56	42	6		8	Autumn	3	
		F2406501	University chemistry	2	32	32				Autumn	1	

Nature of the course		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
es		F2410805	linear algebra	2.5	40	32			8	spring	2	
		F2410806	Probability Theory and Mathematical Statistics	2.5	40	40				Autumn	3	
		F2402105	engineering mechanics C	4.5	72	64		8		Autumn	3	
		F2403103	engineering graphics C	2.5	40	32	16			spring	2	
		F2408104	Python programming	2.5	40	40				spring	2	
		F2404504	Electrical Engineering and Electronic Technology D	3	48	40		8		Autumn	3	
		F2405601	Introduction to Earth Information Science and Technology	0.5	8	8				Autumn	3	
		F2405502	general geology	3	48	40		8		spring	2	
		F2405506	architectonic geology B	2	32	32				Autumn	3	
		F2407153	metrology B	2	32	24		8		spring	4	
		F2405602	Introduction to Earth Information Science	2	32	32				Autumn	3	
		F2405603	geo-information system	2	32	18	2	4	8	Autumn	3	Online and offline blended teaching courses
	The core required courses for the major program total 49 credits.											
Fundamental Cou	Elective courses for foundational	F2405604	Fundamentals of Geoscience Big Data	2.5	40	32		8		Autumn	5	
		F2405605	Data Structure and Programming	2.5	40	32		8		spring	4	
		F2405606	Geological Data Acquisition and Processing	2.5	40	32		8		Autumn	5	

Nature of the course		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
rses for Major Disciplines	major categories	Students must complete at least 4 credits of foundational electives in their major category.										
	Basic Practical Courses for Major Categories	P2414101	Physics Experiment (1)	1	32			32		spring	2	
		P2414102	Physics Experiment (2)	1	32			32		Autumn	3	
		P2408104	On the Practice of Python Programming	1	32			32		spring	2	
		P2405501	geological knowledge practice	2	2 weeks			2 weeks		Autumn	3	
		P2405610	Basic Practice of Earth Information Technology	4	4 weeks			4 weeks		spring	4	
		The foundational practical courses in the major category total 9 credits.										
The foundational courses for the major program total 62 credits.												
specialized courses	Core professional courses	M2405601	Digital Geology A (Teaching Demonstration)	3	48	32		12	4	spring	6	Online and offline hybrid teaching demonstration course
		M2405602	Remote Sensing Principle and Geoscience Application	2	32	32				Autumn	3	
		M2405603	Spatial Analysis and Modeling (Teaching Demonstration)	3	48	32	4	12		Autumn	5	Ideological and Political Education in Curriculum: A Demonstration Course Ideological and Political Education in Curriculum: A Demonstration Course
		M2405604	geological data mining	2	32	32				spring	6	
		M2405605	GIS Design and Application (International)	2	32	16	8	8		spring	6	

Nature of the course		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
		M2405606	Digital Mapping and Mine Informatization (Teaching demonstration, industry-education integration)	3	48	32		16		Autumn	5	Industry-education integration demonstration course Industry-education integration demonstration course
		subtotal		15	240	176	12	48	4			
		The core curriculum consists of 15 credits.										
	Professional Elective Courses	M2405607	Geological Modeling and Numerical Simulation	2	32	24		8		spring	6	
		M2405608	geoscience database	2	32	24		8		spring	4	
		M2405609	Fundamentals of Environmental Geology	2	32	32				spring	4	
		M2405610	Remote Sensing Development Technology and Application	2	32	24		8		spring	6	
		Professional electives must be completed for a minimum of 3 credits.										
	Professional Practice Course	P2405601	experiment of geographic information system	1.5	48			48		spring	4	
		P2405602	Principle of Remote Sensing and Application Experiment of Geoscience	2	64			64		Autumn	3	
		P2405603	geological data mining experiment	2	64			64		spring	6	
		P2405604	Course Design of Geoscience Big Data	1	32			32		Autumn	5	
		P2405605	Comprehensive Experiment of Earth Information Science and Technology	1.5	1.5 weeks			1.5 weeks		Autumn	7	
		P2405606	fieldwork	4	4 weeks			4 weeks		spring	6	
		P2405607	graduation field work	3	3 weeks			3 weeks		All	7 or 8	

Nature of the course		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
		P2405608	Innovation Practice of Earth Information Science and Technology Specialty	2	2 weeks			2 weeks		Autumn	7	
		P2405609	Graduation Project (Thesis)	8	16 weeks			16 weeks		spring	8	
		The professional practice course is worth 25 credits.										
The specialized courses total 43 credits.												
Extended Course	Professional Extension Courses	E2405601	3D GIS Application (Industry-Education Integration)	1.5	24	8		16		Autumn	5	Demonstration Course on Integration of Industry and Education
		E2405602	Artificial Intelligence Principle and Geoscience Application	1.5	24	24				spring	4	AI Deep Integration Course
		E2405603	geographic information development technology	1.5	24	24				Autumn	7	
		Students must complete at least 2 credits of this major's extended courses.										
Extended Course	Cross-disciplinary Extension Course	I2405405	Fundamentals of Geophysics	2	32	32				spring	4	
		I2405501	Fundamentals of Mineral Petrology	2	32	28		4		spring	4	
		I2405301	Fundamentals of Hydrogeology B	2	32	28		4		spring	4	
		I2405201	engineering geology	2	32	28	4			spring	4	
		I2405205	Coal Mine Engineering Geology and Hydrogeology	2	32	28		4		spring	4	
		I2407101	Principle and Application of Satellite Navigation and Positioning	2	32	24		8		Autumn	5	
		I2411201	Introduction to Natural Resource	2	32	32				Autumn	5	

Nature of the course		Course ID	course title	credit	Class hours					Semester of the course	Recommended elective semester	remarks
					overall class hour	lecture	deliberate	Experiments / practice	on-line			
			Management									
		I2407202	Spacetime Big Data and Cloud Computing	2	32	32				Autumn	7	
		Students must complete at least 4 credits of cross-disciplinary expansion courses.										
Professional development courses must be completed for a minimum of 6 credits.												
auxiliary word for ordinal numbers 2 class hall		S2430101	Read Classics	0						Autumn	7	
		S2430102	social practice	2	2 weeks					Autumn	7	
		S2430103	Volunteer Public Service	1	32					Autumn	7	
		S2430104	Campus cultural activities (including aesthetic education practices)	1	1 week					Autumn	7	
The second classroom course is worth 4 credits.												