

Serial Number	Course Type	Course Type	Curriculum Code	Course Title	Credit	Total Hour	Contact Hour	Self-Study Hour	Theory Class Hour	Practic e Class Hour	Evaluation mode	Credit Hour Per Week	Semester	Notes	College
1	Required Courses	General Education	9123311011	Ideological Ethics and Rule of Law Courses	3	90	48	42	40	8	test	3	1		School of Marxism
2	Required Courses	General Education	9124311041	Outline of Modern Chinese History	3	90	48	42	40	8	test	3	2		School of Marxism
3	Required Courses	General Education	9121311011	Basic Principle of Marxism	3	90	48	42	40	8	test	3	3		School of Marxism
4	Required Courses	General Education	9122311021	Introduction to MAO Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	5	150	80	70	72	8	test	5	4		School of Marxism
5	Required Courses	General Education	9125111050	Situation & Policy	2	60	32	28	32		examination	2	1-4	8-15 weeks	School of Marxism
6	Required Courses	General Education	9054311011	College English (1)	3	90	48	42	48		test	4	1		School of Humanities / Department of College English Teaching
7	Required Courses	General Education	9054311021	College English (2)	3	90	48	42	48		test	4	2		School of Humanities / Department of College English Teaching
8	Required Courses	General Education	9054311031	College English Extension Series (1)	1.5	45	24	21	24		test	2	2	exemption	School of Humanities / Department of College English Teaching

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9	Required Courses	General Education	9054311041	College English Extension Series (2)	1.5	45	24	21	24		test	2	3	exemption	School of Humanities / Department of College English Teaching
10	Required Courses	General Education	9051111050	Practical Writing	1	30	16	14	16		examination	2	2		School of Humanities / Department of College English Teaching
11	Required Courses	General Education	9131311010	College Psychological Health Education	1.5	45	32	13	12	20	examination	2	2		Student Affairs Department of Hunan City University
12	Required Courses	General Education	9151311010	Career Development and Employment Guidance for College Students (1)	1	30	20	10	8	12	examination	2	4	lecture	Admission and Employment Office
13	Required Courses	General Education	9151311020	Career Development and Employment Guidance for College Students (2)	1	30	18	12	4	14	examination	2	6	lecture	Admission and Employment Office
14	Required Courses	General Education	9163311010	Basic Course of Innovation and Entrepreneurship	1.5	45	32	13	8	24	examination	2	2		College of Materials and Chemical Engineering
15	Required Courses	General Education	9132311020	Military Theory Course for College Students	2	60	36	24	12	24	examination	4	1		Student Affairs Department of Hunan City University

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16	Required Courses	General Education	9063311011	Basic Computer Course for College Students	1.5	45	32	13	16	16	test	4	1		College of Information and Electronic Engineering
17	Required Courses	General Education	9063311021	Computer Programming Language Curriculum	3	90	56	34	40	16	test	4	2		College of Information and Electronic Engineering
18	Required Courses	General Education	9103811010	University Physical Education and Health Courses (1)	1.5	45	32	13	20	12	examination	2	1	practice course	College of Physical Education
19	Required Courses	General Education	9103811020	University Physical Education and Health Courses (2)	1.5	45	32	13	20	12	examination	2	2	practice course	College of Physical Education
20	Required Courses	General Education	9103811030	University Physical Education and Health Courses (3)	1	30	16	14	6	10	examination	2	3		College of Physical Education
21	Required Courses	General Education	9103811040	University Physical Education and Health Courses (4)	1	30	16	14	6	10	examination	2	4		College of Physical Education
			sub-total		42.5	1275	738	537	536	202					
22	Required Courses	Basic Courses	9092112011	Advanced Mathematics A (1)	4.5	135	72	63	72		test	6	1		College of Science
23	Required Courses	Basic Courses	9092112021	Advanced Mathematics A (2)	5	150	80	70	80		test	6	2		College of Science
24	Required Courses	Basic Courses	9092112051	Linear Algebra	2	60	32	28	32		test	4	3		College of Science

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25	Required Courses	Basic Courses	9092112061	Probability and Statistics	2.5	75	40	35	40		test	5	4		College of Science
26	Required Courses	Basic Courses	9065112041	College Physics B(1)	3	90	48	42	48		test	4	3		College of Information and Electronic Engineering
27	Required Courses	Basic Courses	9065212030	College Physics Experiment	1	30	16	14		16	examination	4	3		College of Information and Electronic Engineering
28	Required Courses	Basic Courses	9081112251	Inorganic Chemistry A (1)	2	60	32	28	32		test	4	1		College of Materials and Chemical Engineering
29	Required Courses	Basic Courses	9081112261	Inorganic Chemistry A (2)	2	60	32	28	32		test	4	2		College of Materials and Chemical Engineering
30	Required Courses	Basic Courses	9081212140	Inorganic Chemistry Experiments A	2	60	32	28		32	examination	4	1		College of Materials and Chemical Engineering
31	Required Courses	Basic Courses	9081112151	Organic Chemistry A (1)	2.5	75	40	35	40		test	4	3		College of Materials and Chemical Engineering
32	Required Courses	Basic Courses	9081112161	Organic Chemistry A (2)	2.5	75	40	35	40		test	4	4		College of Materials and Chemical Engineering
33	Required Courses	Basic Courses	9081212070	Organic Chemistry Experiment B (1)	1.5	45	32	13		32	examination	4	3		College of Materials and Chemical Engineering
34	Required Courses	Basic Courses	9081212080	Organic Chemistry Experiment B (2)	1	30	16	14		16	examination	4	4		College of Materials and Chemical Engineering

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35	Required Courses	Basic Courses	9081112191	Analytical Chemistry	2.5	75	40	35	40		test	4	2		College of Materials and Chemical Engineering
36	Required Courses	Basic Courses	9081212110	Analytical Chemistry Experiment	1.5	45	32	13		32	examination	4	2		College of Materials and Chemical Engineering
37	Required Courses	Basic Courses	9081112121	Physical Chemistry A (1)	3	90	48	42	48		test	4	3		College of Materials and Chemical Engineering
38	Required Courses	Basic Courses	9081112131	Physical Chemistry A (2)	2	60	32	28	32		test	4	4		College of Materials and Chemical Engineering
39	Required Courses	Basic Courses	9081212140	Physical Chemistry Experiment B (1)	1.5	45	32	13		32	examination	4	3		College of Materials and Chemical Engineering
40	Required Courses	Basic Courses	9081212150	Physical Chemistry Experiment B (2)	1	30	16	14		16	examination	4	4		College of Materials and Chemical Engineering
41	Required Courses	Basic Courses	9081212141	Biological Chemistry	2	60	32	28	32		test	4	4		College of Materials and Chemical Engineering
42	Required Courses	Basic Courses	9081212170	Biological Chemistry Experiment	1	30	16	14		16	examination	4	4		College of Materials and Chemical Engineering
			Sub-total		46	1380	760	620	568	192					
43	Required Courses	Professional Core	9081113070	Introduction to Chemical Engineering	1	30	16	14	16		examination	2	1		College of Materials and Chemical Engineering
44	Required Courses	Professional Core	9081313011	Chemical Engineering Drawing	2.5	75	48	27	32	16	test	2	4		College of Materials and Chemical Engineering

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45	Required Courses	Professional Core	9081113011	Principles of Chemical Industry A (1)	3.5	105	56	49	56		test	4	4		College of Materials and Chemical Engineering
46	Required Courses	Professional Core	9081113021	Principles of Chemical Industry A (2)	3.5	105	56	49	56		test	4	5		College of Materials and Chemical Engineering
47	Required Courses	Professional Core	9081213010	Principles of Chemical Industry Experiment A	1.5	45	32	13		32	examination	4	5		College of Materials and Chemical Engineering
48	Required Courses	Professional Core	9081213020	Chemical Principle Simulation Experiment	1	30	16	14		16	examination	4	5		College of Materials and Chemical Engineering
49	Required Courses	Professional Core	9081113031	Chemical Reaction Engineering	3	90	48	42	48		test	4	5		College of Materials and Chemical Engineering
50	Required Courses	Professional Core	9081213050	Chemical Engineering Experiment	3	90	64	26		64	examination	4	5		College of Materials and Chemical Engineering
51	Required Courses	Professional Core	9081133041	Chemical Engineering Thermos Dynamics	3.5	105	56	49	56		test	4	5		College of Materials and Chemical Engineering
52	Required Courses	Professional Core	9081113051	Chemical Separation Engineering	3	90	48	42	48		test	4	6		College of Materials and Chemical Engineering
53	Required Courses	Professional Core	9081133061	Chemical Technology	3	90	48	42	48		test	4	5		College of Materials and Chemical Engineering
54	Required Courses	Professional Core	908111 071	Chemical Security & Environmental Protection	2	60	32	28	32		test	4	6		College of Materials and Chemical Engineering
55	Required Courses	Professional Core	9081113090	Professional English and Literature Retrieval B	2	60	32	28	32		examination	2	5		College of Materials and Chemical Engineering

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56	Required Courses	Professional Core	9081113101	Chemical Machinery and Equipment Foundation	3	90	48	42	48		test	4	5		College of Materials and Chemical Engineering
57	Required Courses	Professional Core	9081113081	Chemical Process Analysis and Synthesis	3	90	48	42	48		test	4	6		College of Materials and Chemical Engineering
58	Required Courses	Professional Core	9081413010	Chemical Engineering Design A	3	90	48	42	48		examination	4	6		College of Materials and Chemical Engineering
59	Required Courses	Professional Core	9081113111	Chemical Industry Instrument and Automation	3	90	48	42	48		test	4	6		College of Materials and Chemical Engineering
			Sub-total		44.5	1335	744	591	616	128					
60	Optional Course	Self-directed Development	9081124190	Fine Chemical Formulation Design	1	30	16	14	16		examination	4	7	No less than 6.5 credits in fine chemical industry direction	College of Materials and Chemical Engineering
61	Optional Course	Self-directed Development	9081124030	Chemical Experiment Design and data Processing	2	60	32	28	32		examination	4	7		College of Materials and Chemical Engineering
62	Optional Course	Self-directed Development	9081124180	Chemical Enterprise Human Resource Management	1	30	16	14	16		examination	4	7		university-industry cooperation
63	Optional Course	Self-directed Development	9081124061	Instrumental Analysis	2	60	32	28	32		test	4	4		College of Materials and Chemical Engineering
64	Optional Course	Self-directed Development	9081124210	Instrumental Analysis Experiment	1	30	16	14		16	examination	4	4		College of Materials and Chemical Engineering
65	Optional Course	Self-directed Development	9081124151	Technical Economics of Chemical Engineering	2	60	32	28	32		test	4	7		College of Materials and Chemical Engineering

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66	Optional Course	Self-directed Development	9065122011	Electrical and Electronic Technology	2	60	32	28	32		test	4	4		College of Information and Electronic Engineering
67	Optional Course	Self-directed Development	9081124200	Chemical Process Simulation Training (Aspen Plus)	2	60	32	28	32		examination	4	7		College of Materials and Chemical Engineering
68	Optional Course	Self-directed Development	9081124151	Technical Economics of Chemical Engineering	2	60	32	28	32		test	4	7	No less than 6.5 credits in bio-chemical industry direction	College of Materials and Chemical Engineering
69	Optional Course	Self-directed Development	9081124160	Chemical Professional Frontier Lecture	1.5	45	24	21	24		examination	4	7		College of Materials and Chemical Engineering
70	Optional Course	Self-directed Development	9081124030	Chemical Experiment Design and data Processing	2	60	32	28	32		examination	4	7		College of Materials and Chemical Engineering
71	Optional Course	Self-directed Development	9081124270	Molecular Biology	1	30	16	14	16		examination	4	7		College of Materials and Chemical Engineering
72	Optional Course	Self-directed Development	9081124061	Instrumental Analysis	2	60	32	28	32		test	4	4		College of Materials and Chemical Engineering
73	Optional Course	Self-directed Development	9081124210	Instrumental Analysis Experiment	1	30	16	14		16	examination	4	4		College of Materials and Chemical Engineering
74	Optional Course	Self-directed Development	9065122011	Electrical and Electronic Technology	2	60	32	28	32		test	4	3		College of Information and Electronic Engineering
75	Optional Course	Self-directed Development	9081124160	Chemical Process Simulation Training (Aspen Plus)	2	60	32	28	32		examination	4	7		College of Materials and Chemical Engineering

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			Sub-total	No less than 9 credits in each direction	9	270	144	126	128	16					
76	Optional Course	Self-directed Development	9081124010	Fine Organic Synthesis Unit Reaction	1.5	45	24	21	24		examination	4	7	No less than 3 credits in fine chemical industry direction Professional experiment required	College of Materials and Chemical Engineering
77	Optional Course	Self-directed Development	9081124020	Fine Chemical Industry Technology	1.5	45	24	21	24		examination	4	7		College of Materials and Chemical Engineering
78	Optional Course	Self-directed Development	9081224010	Fine Chemical Specialty Experiment	1	30	16	14		16	examination	4	7		College of Materials and Chemical Engineering
79	Optional Course	Self-directed Development	9081124050	Industrial Catalysis	2	60	32	28	32		examination	4	7		College of Materials and Chemical Engineering
80	Optional Course	Self-directed Development	9081124220	Circular Economy and Resource Reuse	1	30	16	14	16		examination	4	7		University-industry Cooperation
81	Optional Course	Self-directed Development	9081124230	Bioreaction Engineering	2	60	32	28	32		examination	4	7	No less than 3 credits in bio-chemical industry direction Professional experiment required	College of Materials and Chemical Engineering
82	Optional Course	Self-directed Development	9081124130	Fermentation Engineering	2	60	32	28	32		examination	4	7		College of Materials and Chemical Engineering
83	Optional Course	Self-directed Development	9081224030	Biological Chemical Engineering Specialty Experiment	1	30	16	14		16	examination	4	7		College of Materials and Chemical Engineering
84	Optional Course	Self-directed Development	9081124240	Food Biotechnology	2	60	32	28	32		examination	4	7		College of Materials and Chemical Engineering

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85	Optional Course	Self-directed Development	9081124250	Biochemical Separation Technique	1	30	16	14	16		examination	4	7		College of Materials and Chemical Engineering
86	Optional Course	Self-directed Development	9081124281	Biochemical Technology	2	60	32	28	32		test	4	7		College of Materials and Chemical Engineering
			Sub-total	No less than 5 credits	5	150	80	70	64	16					
87	Optional Course	Self-directed Development	9163311020	Innovation and Entrepreneurship	3	90	64	26		64	examination			Natural science majors choose	College of Innovation and Entrepreneurship
88	Optional Course	Self-directed Development	9171824020	Humanities and Social Sciences	2	60	32	28	32		examination			humanities and Social Sciences,	Office of Academic Affairs
89	Optional Course	Self-directed Development	9171824030	Art and Sports	2	60	32	28	32		examination			arts and sports, and innovation and entrepreneurship for 2 credits each	Office of Academic Affairs
			Sub-total	No less than 7 credits	7	210	128	82	64	64				No less than 6 points in public elective courses (including 2 credits of innovation and entrepreneurship)	

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90	Required Courses	Concentrated Practice	9132311030	Entrance Education and Military Training	4	120	96	24		96	examination		1	Counts towards the General Studies curriculum	Student Affairs Department of Hunan City University
91	Required Courses	Concentrated Practice	9133315010	Voluntary Labour	2	60	32	28		32	examination		1		Student Affairs Department of Hunan City University
92	Required Courses	Concentrated Practice	9141315010	Social Practice and Volunteer Service	2	60	32	28		32	examination		vacation	vacation	Chinese Communist Youth League committee
93	Required Courses	Concentrated Practice	9162715010	Metalworking Training A	2	60	32	28		32	examination		3		College of Innovation and Entrepreneurship
94	Required Courses	Concentrated Practice	9161715010	Electrical and Electronic Training A	2	60	32	28		32	examination		3		College of Innovation and Entrepreneurship
95	Required Courses	Concentrated Practice	9081615010	Chemical Understanding Internship	2	60	32	28		32	examination		6		College of Materials and Chemical Engineering
96	Required Courses	Concentrated Practice	9081615020	Chemical Production Practice	15	450	320	130		320	examination		7、8		College of Materials and Chemical Engineering
97	Required Courses	Concentrated Practice	9081415010	Course Design for Chemical Engineering	4	120	64	56		64	examination		5		College of Materials and Chemical Engineering
98	Required Courses	Concentrated Practice	9081415020	Chemical Engineering Design B	10	300	192	108		192	examination		6		College of Materials and Chemical Engineering
99	Required Courses	Concentrated Practice	9081515010	Chemical Graduation Comprehensive Training	20	600	480	120		480	examination		8		College of Materials and Chemical Engineering

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100	Required Courses	Concentrated Practice	9081515020	Graduation education	2	60	32	28		32	examination		7		College of Materials and Chemical Engineering
			Sub-total		65	1950	1344	606	0	1344					
			Total		219	6570	3938	2632	1976	1962					