

A List of Courses for Natural Science Experimental Class (Bioengineering) 2018

Course Code	Course Title	Credit	Total Academic Hours	Scheduling Hours	Time Allocation				Semester
					Theoretical Teaching	Practice Teaching			
						Lab.	Internship	Others	
Common Cognition Courses									
General Courses									
Compulsory Courses									
All courses are required to taken (4 times for Situation and Policy(2 credits))									
TH028	Modern Chinese History	3	48	48					1
TH000	Cultivation of Ethics and Fundamentals of Law	3	48	48	32			16	2
TH029	Introduction to Mao Zedong's Thoughts & Theoretical System of Socialism with Chinese Characteristics	3	48	48	48				3
TH007	Basic Theory of Marxism	3	48	48	32			16	4
PE001	Physical Education (1)	1	32	32				32	1
PE002	Physical Education (2)	1	32	32				32	2
PE003	Physical Education (3)	1	32	32				32	3
PE004	Physical Education (4)	1	32	32				32	4
TH004	Military Theory	1	16	16	16				2
	Total Credits	17							
Optional Courses									
6 credits are required for English electives during the whole period of study.									
EN061	English (1)	3	48	48	48				1
EN062	English (2)	3	48	48	48				1,2
EN063	English (3)	3	48	48	48				1,2,3
EN064	English (4)	3	48	48	48				1,2,3
EN065	English (5)	3	48	48	48				2
	Total Credits	15							
Common Cognition Core Courses									
Minimum 12 credits.									
BI902	Bioethics	2	32	32	32				4
	Humanities	2							
	Social Science	2							
	Natural Science	2							
	Engineering Science and Technology								
	Total Credits	12							
Cognition Practice									
Compulsory Courses									
All required to taken									
XP004	Social Cognition Practice in the New Era	2	32					32	2
	Total Credits	2							
Specialized Courses									
Basic Courses									
Compulsory Courses									
All required to taken									
BI143	Natural Science Foundation	2	32	32	32				1
CA150	Inorganic & analytical chemistry	4	64	64	64				1
MA077	Linear Algebra (B)	3	48	48	48				1
MA080	Advanced Mathematics (A) (1)	6	96	96	96				1
CA239	Organic Chemistry (1)	4	64	64	64				2
IN100	Information Retrieval and Utilization	1	16	16	16				2
MA081	Advanced Mathematics (A) (2)	4	64	64	64				2
MA119	Probability & Statistics	3	48	48	48				2
PH003	Physics (B) (1)	3	48	48	48				2
BI131	Introduction to Biology	3	48	48	48				3
CA240	Biochemistry (1)	4	64	64	64				3
CS154	Thinking and Approach of Programming (C++)	3	48	48	48				3
PH004	Physics (B) (2)	3	48	48	48				3
	Total Credits	43							
Specialized Courses									
Compulsory Courses									
All required to taken									
BI144	Biochemistry	3	48	48	48				3
BI211	Microbiology (D)	3	48	48	48				4
BI291	Unit Operations of Biochemical Engineering (1)	2	32	32	32				4
BI295	Molecular Biology (C)	2	32	32	32				4
BI292	Cell Biology	2	32	32	32				5
BI382	Gene Engineering	2	32	32	32				5
BI467	Unit Operations of Biochemical Engineering (2)	2	32	32	32				5

BI486	Bioreaction and Bioprocess Engineering	2	32	32	32				5
BI326	Cell Engineering	2	32	32	32				6
BI444	Separation Engineering of Biochemistry	2	32	32	32				6
BI461	Biostatistics and Mathematical Modeling	3	48	48	48				6
BI487	Protein and Enzyme Engineering	2	32	32	32				6
Total Credits		27							
Specialized Courses									
Optional Courses									
10 credits are required during the whole period of study									
BI310	Genetics (A)	2	32	32	32				4
BI410	Metabolic Engineering	2	32	32	32				5
BI437	Applied Bioinformatics	2	32	32	32				5
BI339	Environmental Biotechnology	2	32	32	32				6
BI483	Microbial Resources and Utilization	2	32	32	32				6
BI484	Bioenergy	2	32	32	32				6
BI485	Biological Pharmacy	2	32	32	32				6
Total Credits		14							
Specialized Practical Courses									
Courses in Lab.									
Compulsory Courses									
All required to taken									
CA156	Inorganic & Analytical Chemistry Experiment	2	64	64		64			1
CA155	Organic Experiment I	2	64	64		64			2
ME130	Eco-Tech Innovation Experiment	2	64	64		64			2
PH028	Physics Lab. I	1	24	24		24			2
BI299	Biochemistry Lab.	1.5	48	48		48			3
CA241	Physical Chemistry Experiment I	2	64	64		64			3
PH029	Physics Lab. II	1	24	24		24			3
BI313	Bioengineering Lab I	1	32	32		32			4
BI356	Microbiology Experiment	1.5	48	48		48			4
BI357	Cell Biology Lab.	1	32	32		32			5
BI479	Bioengineering Lab II	1	32	32		32			5
BI480	Genetic Engineering Experiments	1	32	32		32			5
BI402	Comprehensive Experiment of Bioengineering	2	64	64		64			7
Total Credits		19							
Internship & Practice									
Compulsory Courses									
All required to taken									
TH010	Military Training	3	48	48			48		2
BI293	Science & Technology Internship and Innovation—Biotechnology (1)	2	64			64			4
BI323	Science & Technology Internship and Innovation—Biotechnology (2)	1	32			32			5
BI364	Science & Technology Internship and Innovation—Biotechnology (3)	1	32			32			6
BI469	Professional Practice (Bioscience)	2	64	64		64			6
Total Credits		9							
Professional Comprehensive Practice									
All required to taken									
BS449	Undergraduate project (Thesis) (Bioengineering)	12	384	384			384		8
Total Credits		12							
Other Optional Courses									
6 credits are required during the whole period of study									
ME124	Engineering Practice (B)	2	64	64			64		2 (in summer semester)
BI278	Field Trip on Biology (B)	1	32	32		32			3