

Course Structure for Undergraduate Program

Department of Life Science

National Taiwan Normal University

Adaptive to Class of	Common Courses Credit(s)	Required Credit(s)	Elective Credit(s)	Free Elective Credit(s)	Minimum Total Credits for Graduation
114	32.0	23.0	52.0	21.0	128.0

I. General Course: 32.0 credits are required

Course Name	Credit(s)
1 Chinese 4.0 credits are required	
1-1 Chinese Reading and Thinking	2.0
1-2 Chinese Writing and Expression	2.0
2 English 6.0 credits are required, Students who major in Department of English must take the course which course code are ENU0168 and ENU0169 with a passing score for instead	
2-1 English(I)	2.0
2-2 English(II)	2.0
2-3 English(III)	2.0
3 General Education Courses 18.0 credits are required	
3-1 Liberal Arts Course 8.0 credits are required	
3-1-1 Humanities and Arts 2.0 credits are required	
3-1-2 Social Sciences 2.0 credits are required	
3-1-3 Natural Sciences 2.0 credits are required	
3-1-4 Logic and Computing 2.0 credits are required	
3-2 Cross-domain Exploration 4.0 credits are required	
3-2-1 College Common Course	
3-2-2 Cross-domain Professional Discovery Course	
3-2-3 Introduction to University Studies	
3-3 Self-Directed Learning maximum credits are 4.0	
3-3-1 Inquiry Study	
3-3-2 MOOCs	
4 Physical Education 4.0 credits are required, 4 courses are least required	

Note: The first alphabet "E" on the course name refers to the course in English as a medium of instruction

II. Required Courses: 23.0 credits are required

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
BIU0168	1 General Biology A (I)	3.0	3.0	0.0	
BIU0169	2 General Biology A (II)	3.0	3.0	0.0	
BIU0172	3 General Biology Laboratory A (I)	1.0	0.0	3.0	
BIU0173	4 General Biology Laboratory A (II)	1.0	0.0	3.0	
CMU0178	5 General Chemistry B	3.0	3.0	0.0	
CMU0131	6 E General Chemistry Laboratory(I)	1.0	0.0	3.0	
BIU0143	7 Biochemistry	4.0	4.0	0.0	
BIU0044	8 Genetics	3.0	3.0	0.0	
BIU0144	9 Biochemistry Laboratory	2.0	0.0	4.0	
BIU0189	10 Special Topics in Biology (I)	2.0	2.0	0.0	

III. Elective Courses: 52.0 credits are required

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
	1 Basic subjects 3.0 credits are required, Choosing one course to be a required course				
BIU0008	1-1 Organic Chemistry	3.0	3.0	0.0	
PHU0253	1-2 Fundamental Physics	3.0	3.0	0.0	
MAU0182	1-3 Basic Calculus	3.0	3.0	0.0	
	2 Advanced experiment 2.0 credits are required, Choosing one course to be a required course				
BIU0159	2-1 laboratory Course for Cellular and Molecular Biology	2.0	0.0	4.0	
BIU0016	2-2 Animal Physiology Laboratory	2.0	0.0	4.0	
BIU0014	2-3 Plant Physiology Laboratory	2.0	0.0	4.0	
	3 Ecology and Evolution 3.0 credits are required, Choosing one course to be a required course				
BIU0086	3-1 Evolution	3.0	3.0	0.0	
BIU0046	3-2 E Ecology	3.0	3.0	0.0	
	4 Cellular and Molecular 3.0 credits are required, Choosing one course to be a required course				
BIU0025	4-1 Cell Biology	3.0	3.0	0.0	
BIU0145	4-2 Molecular Biology	3.0	3.0	0.0	
	5 Physiology 3.0 credits are required, Choosing one course to be a required course				
BIU0013	5-1 Plant Physiology	3.0	3.0	0.0	

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
BIU0015	5-2 Animal Physiology	3.0	3.0	0.0	
BIC0001	6 Neurobiology	3.0	3.0	0.0	
BIC0006	7 Biological Geography	3.0	3.0	0.0	
BIC0084	8 Animal Behaviour	3.0	3.0	0.0	
BIC0085	9 Marine Biology	2.0	2.0	0.0	
BIC0086	10 Ornithology	3.0	3.0	0.0	
BIC0087	11 Herpetology	2.0	2.0	0.0	
BIC0088	12 Recreation Ecology	3.0	3.0	0.0	
BIC0108	13 Marine Ecology	2.0	2.0	0.0	
BIC0111	14 Respiratory and Circulatory Physiology	2.0	2.0	0.0	
BIC0123	15 Developmental Biology	3.0	3.0	0.0	
BIC0170	16 E Forest Ecology	3.0	3.0	0.0	
BIC0175	17 Biological Invasions	3.0	3.0	0.0	
BIU0185	18 Biotechnology Laboratory	1.0	0.0	3.0	
BIC0177	19 Biotechnology	3.0	3.0	0.0	
BIC9041	20 Environmental Physiology	3.0	3.0	0.0	
BIC9042	21 Transgenic	2.0	2.0	0.0	
BIC7001	22 Special Topics on Intellectual Property	2.0	2.0	0.0	
BIC7002	23 Industrial Practice	3.0	3.0	0.0	
BIC7004	24 Translational Medicine — Novel Compounds and Chinese Herbal Medicines	2.0	2.0	0.0	
BIC7005	25 E Drug Development and Translational Medicine	2.0	2.0	0.0	
BIC7007	26 Population Genetics and Evolution	3.0	3.0	0.0	
BIC7009	27 Immunochemistry	3.0	3.0	0.0	
BIC7010	28 Neuroethology	3.0	3.0	0.0	
BIC7012	29 Principles of Phylogenetics	3.0	3.0	0.0	
BIC7015	30 Comparative Animal Physiology	3.0	3.0	0.0	
BIC9006	31 Stem Cell Biology	3.0	3.0	0.0	
BIC9008	32 E Landscape Ecology	3.0	3.0	0.0	
BIC9009	33 Plant Genetic Engineering	3.0	3.0	0.0	
BIC9011	34 Bioindustry	2.0	2.0	0.0	
BIC9013	35 Program Language in Bioinformatics	3.0	3.0	0.0	
BIC9014	36 Algorithms in Bioinformatics	3.0	3.0	0.0	
BIC9015	37 Biological Microtechnique (including Lab.)	3.0	2.0	2.0	
BIC9021	38 E Wildlife Biology	3.0	3.0	0.0	
BIC9022	39 Endocrinology	3.0	3.0	0.0	
BIC9024	40 Principles of Systematic Biology	3.0	3.0	0.0	
BIC9025	41 Island Biogeography	3.0	3.0	0.0	
BIC9027	42 Concept and Experimental Learning of Plant Factory	2.0	1.0	2.0	
BIC9028	43 Translational Application of Stem Cell	1.0	1.0	0.0	
BIC9029	44 Translational Application of Stem Cell Experiment	1.0	0.0	3.0	
BIC9030	45 Biodiesel Biotechnology	1.0	1.0	0.0	
BIC9031	46 Biodiesel Biotechnology Experiment	1.0	0.0	3.0	
BIC9032	47 Cancer Biology	2.0	2.0	0.0	
BIC9033	48 Reactive Oxygen Species and Biological Medicine	1.0	1.0	0.0	
BIC9034	49 Methods for Reactive Oxygen Species Measurement	1.0	0.0	3.0	
BIC9035	50 Data Analysis for Ecology and Evolution in R Programming Language	3.0	3.0	0.0	
BIC9036	51 Ecological Plant Physiology	3.0	3.0	0.0	
BIC9062	52 E Plant Cell and Tissue Culture	3.0	3.0	0.0	
BIC9040	53 Signal Transduction	3.0	3.0	0.0	
PHU0254	54 Fundamental Physics Laboratory	1.0	0.0	3.0	
BIU0009	55 Organic Chemistry Laboratory	1.0	0.0	3.0	
BIU0017	56 Plant Morphology	3.0	3.0	0.0	
BIU0018	57 Plant Morphology Laboratory	1.0	0.0	3.0	
BIU0019	58 Invertebrate Zoology	3.0	3.0	0.0	
BIU0020	59 Invertebrate Zoology Laboratory	1.0	0.0	3.0	
BIU0021	60 Taxonomy of Seed-Plants	3.0	3.0	0.0	
BIU0022	61 Taxonomy of Seed Plants Laboratory	1.0	0.0	3.0	
BIU0023	62 Vertebrate Zoology	3.0	3.0	0.0	
BIU0024	63 Vertebrate Zoology Laboratory	1.0	0.0	3.0	
BIU0031	64 Microbiology	3.0	3.0	0.0	
BIU0037	65 Entomology	2.0	2.0	0.0	
BIU0038	66 Entomology Laboratory	1.0	0.0	3.0	
BIU0039	67 Human Physiology	3.0	3.0	0.0	
BIU0088	68 Introduction to Conservation Biology	3.0	3.0	0.0	
BIU0096	69 Comparative Anatomy	2.0	2.0	0.0	
BIU0097	70 Comparative Anatomy Laboratory	1.0	0.0	3.0	

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
BIC9050	71 Plant Anatomy with Experiment	3.0	2.0	2.0	
BIU0148	72 Immunology	3.0	3.0	0.0	
BIC9044	73 Virology	2.0	2.0	0.0	
BIU0155	74 Introduction to Bioinformatics	3.0	3.0	0.0	
BIC9068	75 Field ecology	3.0	3.0	0.0	
BIU0175	76 Introduction to Research on Ecology and Evolutionary Biology	2.0	2.0	0.0	
BIU0176	77 Introduction to Research on Physiology, Cellular and Molecular Biology	2.0	2.0	0.0	
BIU0179	78 Advance Research on Special Topics	3.0	3.0	0.0	
BIC9057	79 E Histology	2.0	2.0	0.0	
BIU0182	80 Ichthyology	3.0	3.0	0.0	
BIC9045	81 Inquiry and Practice in Biology	2.0	2.0	0.0	
BIU0184	82 Microbiology Laboratory	1.0	0.0	3.0	
BIC9046	83 Curriculum Design for Scientific Inquiry and Practices	2.0	2.0	0.0	
BIC9047	84 Cross-Domain Learning Chinese Medicine and Health	2.0	2.0	0.0	
BIC9049	85 Overview of Biomedical Development and Commercialization	2.0	2.0	0.0	
BIC9048	86 The Application of Biotechnological Advances on Complement for Clinical Practice	2.0	2.0	0.0	
BIC9051	87 Mammalogy	2.0	2.0	0.0	
BIC9053	88 Biomethology of Cancer Research	3.0	3.0	0.0	
BIC9052	89 The Latest Modern Issues in Biomedical Research and Technology	2.0	2.0	0.0	
BIU0187	90 Introduction to Research on Physiology	2.0	2.0	0.0	
BIU0186	91 Introduction to Research on Cellular and Molecular Biology	2.0	2.0	0.0	
BIC9054	92 Ecophysiology	3.0	3.0	0.0	
BIC9055	93 Evolution of Insects	3.0	3.0	0.0	
BIU0188	94 Introduction of Pharmacology	2.0	2.0	0.0	
BIC9058	95 Basic and Applied Bone Biology	2.0	2.0	0.0	
BIC9056	96 E Introduction in Virology	2.0	2.0	0.0	
BIU0092	97 Biometry	3.0	3.0	0.0	
BIC9061	98 Oncology Journal Reading and Discussion	2.0	2.0	0.0	
BIC9059	99 Plant Pathology	3.0	3.0	0.0	
BIC9060	100 Pteridology	3.0	3.0	0.0	
BIC9063	101 E Plant Molecular Biology	2.0	2.0	0.0	
BIC9065	102 E Introduction to Biomaterials	3.0	3.0	0.0	
BIC9064	103 Introduction to Biomedical Engineering	3.0	3.0	0.0	
BIC9067	104 Internship in Ecological Industry	3.0	0.0	6.0	
BIC9066	105 Field Ecology Survey Techniques	3.0	3.0	0.0	
BIU0177	106 Research on Special Topics	2.0	2.0	0.0	
BIU0178	107 E Seminar	2.0	2.0	0.0	
BIU0190	108 Special Topics in Biology (II)	2.0	2.0	0.0	

IV. Free Elective Credits: 21.0 credits are required

It can be counted over 44 credits elective course, over 18 credits general education course, another school and department course, and abandoned teacher education programs course.