

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
115	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	
BIC0111	13 Respiratory and Circulatory Physiology	2.0	2.0	0.0	
BIC0123	14 Developmental Biology	3.0	3.0	0.0	
BIC0170	15 E Forest Ecology	3.0	3.0	0.0	
BIC0175	16 Biological Invasions	3.0	3.0	0.0	
BIU0185	17 Biotechnology Laboratory	1.0	0.0	3.0	
BIC0177	18 Biotechnology	3.0	3.0	0.0	
BIC9041	19 Environmental Physiology	3.0	3.0	0.0	
BIC9042	20 Transgenic	2.0	2.0	0.0	
BIC7001	21 Special Topics on Intellectual Property	2.0	2.0	0.0	
BIC7002	22 Industrial Practice	3.0	3.0	0.0	
BIC7004	23 Translational Medicine — Novel Compounds and Chinese Herbal Medicines	2.0	2.0	0.0	
BIC7005	24 E Drug Development and Translational Medicine	2.0	2.0	0.0	
BIC7007	25 Population Genetics and Evolution	3.0	3.0	0.0	
BIC7009	26 Immunochemistry	3.0	3.0	0.0	
BIC7010	27 Neuroethology	3.0	3.0	0.0	
BIC7012	28 Principles of Phylogenetics	3.0	3.0	0.0	
BIC7015	29 Comparative Animal Physiology	3.0	3.0	0.0	
BIC9006	30 Stem Cell Biology	3.0	3.0	0.0	
BIC9008	31 E Landscape Ecology	3.0	3.0	0.0	
BIC9009	32 E Plant Genetic Engineering	3.0	3.0	0.0	
BIC9011	33 Bioindustry	2.0	2.0	0.0	
BIC9013	34 Program Language in Bioinformatics	3.0	3.0	0.0	
BIC9014	35 Algorithms in Bioinformatics	3.0	3.0	0.0	
BIC9015	36 Biological Microtechnique (including Lab.)	3.0	2.0	2.0	
BIC9021	37 E Wildlife Biology	3.0	3.0	0.0	
BIC9022	38 Endocrinology	3.0	3.0	0.0	
BIC9024	39 Principles of Systematic Biology	3.0	3.0	0.0	
BIC9025	40 Island Biogeography	3.0	3.0	0.0	
BIC9027	41 Concept and Experimental Learning of Plant Factory	2.0	1.0	2.0	
BIC9032	42 Cancer Biology	2.0	2.0	0.0	
BIC9035	43 Data Analysis for Ecology and Evolution in R Programming Language	3.0	3.0	0.0	
BIC9062	44 E Plant Cell and Tissue Culture	3.0	3.0	0.0	
BIC9040	45 Signal Transduction	3.0	3.0	0.0	
PHU0254	46 Fundamental Physics Laboratory	1.0	0.0	3.0	
BIU0009	47 Organic Chemistry Laboratory	1.0	0.0	3.0	
BIU0017	48 Plant Morphology	3.0	3.0	0.0	
BIU0018	49 Plant Morphology Laboratory	1.0	0.0	3.0	
BIU0019	50 Invertebrate Zoology	3.0	3.0	0.0	
BIU0020	51 Invertebrate Zoology Laboratory	1.0	0.0	3.0	
BIU0021	52 Taxonomy of Seed-Plants	3.0	3.0	0.0	
BIU0022	53 Taxonomy of Seed Plants Laboratory	1.0	0.0	3.0	
BIU0023	54 Vertebrate Zoology	3.0	3.0	0.0	
BIU0024	55 Vertebrate Zoology Laboratory	1.0	0.0	3.0	
BIU0031	56 Microbiology	3.0	3.0	0.0	
BIU0037	57 Entomology	2.0	2.0	0.0	
BIU0038	58 Entomology Laboratory	1.0	0.0	3.0	
BIU0039	59 Human Physiology	3.0	3.0	0.0	
BIU0088	60 Introduction to Conservation Biology	3.0	3.0	0.0	
BIU0096	61 Comparative Anatomy	2.0	2.0	0.0	
BIC9050	62 Plant Anatomy with Experiment	3.0	2.0	2.0	
BIU0148	63 Immunology	3.0	3.0	0.0	
BIC9044	64 Virology	2.0	2.0	0.0	
BIU0155	65 Introduction to Bioinformatics	3.0	3.0	0.0	
BIC9068	66 Field ecology	3.0	3.0	0.0	
BIU0175	67 Introduction to Research on Ecology and Evolutionary Biology	2.0	2.0	0.0	
BIU0176	68 Introduction to Research on Physiology, Cellular and Molecular Biology	2.0	2.0	0.0	

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
BIU0179	69 Advance Research on Special Topics	3.0	3.0	0.0	
BIC9057	70 E Histology	2.0	2.0	0.0	
BIU0182	71 Ichthyology	3.0	3.0	0.0	
BIC9045	72 Inquiry and Practice in Biology	2.0	2.0	0.0	
BIU0184	73 Microbiology Laboratory	1.0	0.0	3.0	
BIC9046	74 Curriculum Design for Scientific Inquiry and Practices	2.0	2.0	0.0	
BIC9047	75 Cross-Domain Learning Chinese Medicine and Health	2.0	2.0	0.0	
BIC9049	76 Overview of Biomedical Development and Commercialization	2.0	2.0	0.0	
BIC9048	77 The Application of Biotechnological Advances on Complement for Clinical Practice	2.0	2.0	0.0	
BIC9051	78 Mammalogy	2.0	2.0	0.0	
BIC9053	79 Biomethology of Cancer Research	3.0	3.0	0.0	
BIC9052	80 The Latest Modern Issues in Biomedical Research and Technology	2.0	2.0	0.0	
BIU0187	81 Introduction to Research on Physiology	2.0	2.0	0.0	
BIU0186	82 Introduction to Research on Cellular and Molecular Biology	2.0	2.0	0.0	
BIC9054	83 Ecophysiology	3.0	3.0	0.0	
BIC9055	84 Evolution of Insects	3.0	3.0	0.0	
BIU0188	85 Introduction of Pharmacology	2.0	2.0	0.0	
BIC9058	86 Basic and Applied Bone Biology	2.0	2.0	0.0	
BIC9056	87 E Introduction in Virology	2.0	2.0	0.0	
BIU0092	88 Biometry	3.0	3.0	0.0	
BIC9059	89 Plant Pathology	3.0	3.0	0.0	
BIC9060	90 Pteridology	3.0	3.0	0.0	
BIC9063	91 E Plant Molecular Biology	2.0	2.0	0.0	
BIC9065	92 E Introduction to Biomaterials	3.0	3.0	0.0	
BIC9064	93 Introduction to Biomedical Engineering	3.0	3.0	0.0	
BIC9067	94 Internship in Ecological Industry	3.0	0.0	6.0	
BIC9066	95 Field Ecology Survey Techniques	3.0	3.0	0.0	
BIU0177	96 Research on Special Topics	2.0	2.0	0.0	
BIU0178	97 E Seminar	2.0	2.0	0.0	
BIU0190	98 Special Topics in Biology (II)	2.0	2.0	0.0	
BIC9071	99 Marine Ecosystem	2.0	2.0	0.0	
BIC9070	100 Forest Ecophysiology	3.0	3.0	0.0	
BIC9069	101 Natural Carbon Sink Analysis	3.0	3.0	0.0	
BIC9061	102 E Oncology Journal Reading and Discussion	2.0	2.0	0.0	
BIC9073	103 E Introduction to Biostatistics	3.0	3.0	0.0	
BIC9074	104 E Wildlife Management	3.0	3.0	0.0	
BIC9075	105 Laboratory for Biological Inquiry and Practices	1.0	0.0	2.0	
BIC9076	106 Laboratory in Curriculum Design for Scientific Inquiry and Practices	1.0	0.0	2.0	
BIC9072	107 E Remote Sensing in Vegetation Ecology	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.