

Course Structure for Ph. D Program
Physiology, Department of Life Science
National Taiwan Normal University

Adaptive to Class of	Required Credit(s)	Elective Credit(s)	Free Elective Credit(s)	Minimum Total Credits for Graduation
111	12.0	12.0	0.0	24.0

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

I. Required Courses: 0.0 credit is required

II. Elective Courses: 0.0 credit is required

III. Courses Offered to Students in Different Divisions

Required Course, 12.0 credits are required

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
BIC8018	1 Topics on Animal Physiology (I)	2.0	2.0	0.0	
BIC8021	2 Experimental Physiology	2.0	2.0	0.0	
BID0165	3 Seminar	2.0	2.0	0.0	This course must be retaken with a passing score for 4 times

Elective Course: 12.0 credits are required

Direct Admission to Doctoral Program from Master's Program must Practice 18 credits

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
1 Core Elective Curriculum 2 courses are least required					
BIC7015	1-1 Comparative Animal Physiology	3.0	3.0	0.0	
BIC0119	1-2 Learning and memory	3.0	3.0	0.0	
BID0074	1-3 Topics in Sensory Physiology	3.0	3.0	0.0	
BIC0052	1-4 Neuropharmacology	3.0	3.0	0.0	
BIC8006	1-5 Topics on Animal Physiology (II)	2.0	2.0	0.0	
BIC0017	1-6 Topics in Fish Physiology	3.0	3.0	0.0	
BID0075	1-7 Topics in Brain Physiology	3.0	3.0	0.0	
BIC0173	2 Evolutionary Biology	3.0	3.0	0.0	
BIC0174	3 E Advanced Ecology	3.0	3.0	0.0	
BIC8010	4 Research Methods in Ecology and Evolution	1.0	1.0	0.0	
BIC0011	5 Experimental Design and Data Analysis	3.0	3.0	0.0	
BIC7007	6 Population Genetics and Evolution	3.0	3.0	0.0	
BIC7012	7 Principles of Phylogenetics	3.0	3.0	0.0	
BIC0133	8 Topics in Molecular Biology	2.0	2.0	0.0	
BIC0139	9 Protein and Enzyme Chemistry	2.0	2.0	0.0	
BIC8016	10 Writing Scientific Papers in English	2.0	2.0	0.0	
BIC7009	11 Immunochemistry	3.0	3.0	0.0	
BID0069	12 Topics in principle of phylogenetics	3.0	3.0	0.0	
BID0072	13 Topics in Plant Growth and Development	2.0	2.0	0.0	
BIC0016	14 E Topics in Plant Molecular Biology	2.0	2.0	0.0	
BIC0021	15 Topics in Molecular Genetics	3.0	3.0	0.0	
BIC0023	16 Topics in Biochemistry	2.0	2.0	0.0	
BIC0029	17 Topics in Biosystematics	2.0	2.0	0.0	
BIC0038	18 Studies in Adaptation and Natural Selection	2.0	2.0	0.0	
BIC0059	19 Architecture of Brain	3.0	3.0	0.0	
BIC0061	20 Principles and Methods of Plant Taxonomy	2.0	2.0	0.0	
BIC0075	21 Biomathematics	3.0	3.0	0.0	
BIC0101	22 Paper Writing and Presentation in Biological Science	2.0	2.0	0.0	
BIC0138	23 Cellular and Molecular Biology	3.0	3.0	0.0	
BIC0153	24 Regression Analysis	3.0	3.0	0.0	
BIC0185	25 Adaptation and Natural Selection	3.0	3.0	0.0	
BIC0186	26 Protein Engineering	3.0	3.0	0.0	
BIC7001	27 Special Topics on Intellectual Property	2.0	2.0	0.0	
BIC8003	28 Ecology and Evolution of Amphibians and Reptiles	2.0	2.0	0.0	
BIC8012	29 Oxidative Stress Physiology	3.0	3.0	0.0	
BIC8015	30 Topics on Interaction between Marine Biology and Physical Oceanography	3.0	3.0	0.0	
BIC8020	31 Biotechnology for the Drug Development	2.0	2.0	0.0	
BIC7002	32 Industrial Practice	3.0	3.0	0.0	
BIC7003	33 Molecular Evolution	3.0	3.0	0.0	
BIC7004	34 Translational Medicine — Novel Compounds and Chinese Herbal Medicines	2.0	2.0	0.0	

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
BIC7005	35 E Drug Development and Translational Medicine	2.0	2.0	0.0	
BIC7010	36 Neuroethology	3.0	3.0	0.0	
BIC7011	37 Developmental Neurobiology	3.0	3.0	0.0	
BIC7013	38 Plant Ecology	3.0	3.0	0.0	
BIC7014	39 Conservation Genetics	3.0	3.0	0.0	
BIC8007	40 Research Methods of Experimental Biology	2.0	2.0	0.0	
BIC8022	41 E Behavioral Ecology	3.0	3.0	0.0	
BIC8009	42 Advanced Seminar (I)	0.0	0.0	0.0	
BIC8014	43 Advanced Seminar (II)	0.0	0.0	0.0	
BID0166	44 Issues and Rationale of Biological Education	3.0	3.0	0.0	
BIC8023	45 Application of Optoelectronic Technology in Biomedical	2.0	2.0	0.0	
BIC8027	46 E Topics in Virology	2.0	2.0	0.0	
BIC8025	47 E Introduction to Statistical Analysis	3.0	3.0	0.0	
BIC8026	48 E Linear and Logistic Regression Models	3.0	3.0	0.0	
BIC8029	49 E Laboratory Rotations in Cell and Molecular Biology	3.0	3.0	0.0	
BIC8028	50 E Apply Sciences Lead to Biotechnology Industry	2.0	2.0	0.0	

IV. Free Elective Credits: 0.0 credit is required