

Course Structure for M.A. 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
115	9.0	15.0	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, 9.0 credits are required

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
BIM0124	1 Modern Physiology	3.0	3.0	0.0	This course must be retaken with a passing score for 2 times
BIC8021	2 Experimental Physiology	2.0	2.0	0.0	
BIM0123	3 Seminar	2.0	2.0	0.0	

Elective Course: 15.0 credits are required

Students can choose to take up to 8 credits outside the school with the guidance of a professor.

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
1 Core Elective Curriculum 2 courses are least required					
BIC0001	1-1 Neurobiology	3.0	3.0	0.0	
BIC9022	1-2 Endocrinology	3.0	3.0	0.0	
BIC7015	1-3 Comparative Animal Physiology	3.0	3.0	0.0	
BIC0119	1-4 Learning and memory	3.0	3.0	0.0	
BIC8012	1-5 Oxidative Stress Physiology	3.0	3.0	0.0	
BIC8018	1-6 Topics on Animal Physiology (I)	2.0	2.0	0.0	
BIC0017	1-7 Topics in Fish Physiology	3.0	3.0	0.0	
BIC0006	2 Biological Geography	3.0	3.0	0.0	
BIC0084	3 Animal Behaviour	3.0	3.0	0.0	
BIC0085	4 Marine Biology	2.0	2.0	0.0	
BIC0086	5 Ornithology	3.0	3.0	0.0	
BIC0087	6 Herpetology	2.0	2.0	0.0	
BIC0088	7 Recreation Ecology	3.0	3.0	0.0	
BIC0111	8 Respiratory and Circulatory Physiology	2.0	2.0	0.0	
BIC0170	9 E Forest Ecology	3.0	3.0	0.0	
BIC0175	10 Biological Invasions	3.0	3.0	0.0	
BIC9008	11 E Landscape Ecology	3.0	3.0	0.0	
BIC9009	12 E Plant Genetic Engineering	3.0	3.0	0.0	
BIC9011	13 Bioindustry	2.0	2.0	0.0	
BIC9013	14 Program Language in Bioinformatics	3.0	3.0	0.0	
BIC9014	15 Algorithms in Bioinformatics	3.0	3.0	0.0	
BIC9015	16 Biological Microtechnique (including Lab.)	3.0	2.0	2.0	
BIC9021	17 E Wildlife Biology	3.0	3.0	0.0	
BIC9024	18 Principles of Systematic Biology	3.0	3.0	0.0	
BIC9025	19 Island Biogeography	3.0	3.0	0.0	
BIC9027	20 Concept and Experimental Learning of Plant Factory	2.0	1.0	2.0	
BIC9032	21 Cancer Biology	2.0	2.0	0.0	
BIC9035	22 Data Analysis for Ecology and Evolution in R Programming Language	3.0	3.0	0.0	
BIC9062	23 E Plant Cell and Tissue Culture	3.0	3.0	0.0	
BIC0016	24 E Topics in Plant Molecular Biology	2.0	2.0	0.0	
BIC0021	25 Topics in Molecular Genetics	3.0	3.0	0.0	
BIC0038	26 Studies in Adaptation and Natural Selection	2.0	2.0	0.0	
BIC0052	27 Neuropharmacology	3.0	3.0	0.0	
BIC0059	28 Architecture of Brain	3.0	3.0	0.0	
BIC0061	29 E Principles and Methods of Plant Taxonomy	3.0	3.0	0.0	
BIC9054	30 Ecophysiology	3.0	3.0	0.0	
BIC0101	31 Paper Writing and Presentation in Biological Science	2.0	2.0	0.0	
BIC0138	32 Cellular and Molecular Biology	3.0	3.0	0.0	
BIC0153	33 Regression Analysis	3.0	3.0	0.0	
BIC0185	34 Adaptation and Natural Selection	3.0	3.0	0.0	

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
BIC0186	35 Protein Engineering	3.0	3.0	0.0	
BIC8003	36 Ecology and Evolution of Amphibians and Reptiles	2.0	2.0	0.0	
BIC8006	37 Topics on Animal Physiology (II)	2.0	2.0	0.0	
BIC8016	38 Writing Scientific Papers in English	3.0	3.0	0.0	
BIC7001	39 Special Topics on Intellectual Property	2.0	2.0	0.0	
BIC7002	40 Industrial Practice	3.0	3.0	0.0	
BIC7004	41 Translational Medicine — Novel Compounds and Chinese Herbal Medicines	2.0	2.0	0.0	
BIC7005	42 E Drug Development and Translational Medicine	2.0	2.0	0.0	
BIC7009	43 Immunochemistry	3.0	3.0	0.0	
BIC7010	44 Neuroethology	3.0	3.0	0.0	
BIC0173	45 Evolutionary Biology	3.0	3.0	0.0	
BIC0174	46 E Advanced Ecology	3.0	3.0	0.0	
BIC7007	47 Population Genetics and Evolution	3.0	3.0	0.0	
BIC8010	48 Research Methods in Ecology and Evolution	2.0	2.0	0.0	
BIC0011	49 Experimental Design and Data Analysis	3.0	3.0	0.0	
BIC7012	50 Principles of Phylogenetics	3.0	3.0	0.0	
BIC0133	51 Topics in Molecular Biology	2.0	2.0	0.0	
BIC8007	52 Research Methods of Experimental Biology	2.0	2.0	0.0	
BIC0123	53 Developmental Biology	3.0	3.0	0.0	
BIC9006	54 Stem Cell Biology	3.0	3.0	0.0	
BIC0139	55 Protein and Enzyme Chemistry	3.0	3.0	0.0	
BIC0177	56 Biotechnology	3.0	3.0	0.0	
BIC8022	57 E Behavioral Ecology	3.0	3.0	0.0	
BIC9040	58 Signal Transduction	3.0	3.0	0.0	
BIC9045	59 Inquiry and Practice in Biology	2.0	2.0	0.0	
BPM0002	60 Studies in Biotech- Pharmaceutical Industry	2.0	2.0	0.0	
BPM0004	61 Research and Design Management in Bioindustry	3.0	3.0	0.0	
BPM0003	62 Biotech Product Development and Intellectual Property Management	3.0	3.0	0.0	
BPM0009	63 Translational Medicine	2.0	2.0	0.0	
BIC9044	64 Virology	2.0	2.0	0.0	
BIC9047	65 Cross-Domain Learning Chinese Medicine and Health	2.0	2.0	0.0	
BIC9046	66 Curriculum Design for Scientific Inquiry and Practices	2.0	2.0	0.0	
BIC9049	67 Overview of Biomedical Development and Commercialization	2.0	2.0	0.0	
BIC9048	68 The Application of Biotechnological Advances on Complement for Clinical Practice	2.0	2.0	0.0	
BIC9050	69 Plant Anatomy with Experiment	3.0	2.0	2.0	
BIC9051	70 Mammalogy	2.0	2.0	0.0	
BIC9053	71 Biomethology of Cancer Research	3.0	3.0	0.0	
BIC9052	72 The Latest Modern Issues in Biomedical Research and Technology	2.0	2.0	0.0	
BIC9055	73 Evolution of Insects	3.0	3.0	0.0	
BIC9056	74 E Introduction in Virology	2.0	2.0	0.0	
BIC9057	75 E Histology	2.0	2.0	0.0	
BIC9058	76 Basic and Applied Bone Biology	2.0	2.0	0.0	
BIC9042	77 Transgenic	2.0	2.0	0.0	
BIC9041	78 Environmental Physiology	3.0	3.0	0.0	
BIC9060	79 Pteridology	3.0	3.0	0.0	
BIC9059	80 Plant Pathology	3.0	3.0	0.0	
BIC8027	81 E Topics in Virology	2.0	2.0	0.0	
BIC8025	82 E Introduction to Statistical Analysis	3.0	3.0	0.0	
BIC8030	83 E Comprehensive Biotech Practice-From Micro Molecular Biology to Macro Physiology	3.0	3.0	0.0	
BIC8026	84 E Linear and Logistic Regression Models	3.0	3.0	0.0	
BIC8028	85 E Apply Sciences Lead to Biotechnology Industry	2.0	2.0	0.0	
BIM0125	86 E Ecoacoustics: Principle and Application	2.0	2.0	0.0	
BIM0126	87 E Knowledge Transformation and Dissemination for Life Science	2.0	2.0	0.0	
OEC8155	88 E Bio-Chips Manufacturing Technology	3.0	3.0	0.0	
BIC9063	89 E Plant Molecular Biology	2.0	2.0	0.0	
BIC9061	90 E Oncology Journal Reading and Discussion	2.0	2.0	0.0	
BIC9065	91 E Introduction to Biomaterials	3.0	3.0	0.0	
BIC9064	92 Introduction to Biomedical Engineering	3.0	3.0	0.0	
BIC9067	93 Internship in Ecological Industry	3.0	0.0	6.0	
BIC9066	94 Field Ecology Survey Techniques	3.0	3.0	0.0	
BIC9068	95 Field ecology	3.0	3.0	0.0	

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
BIC8031	96 Special Topics in Brain Neurobehavioral Studies	3.0	3.0	0.0	
BIC9071	97 Marine Ecosystem	2.0	2.0	0.0	
BIC9070	98 Forest Ecophysiology	3.0	3.0	0.0	
BIC9069	99 Natural Carbon Sink Analysis	3.0	3.0	0.0	
BIC8023	100 Application of Optoelectronic Technology in Biomedical	2.0	2.0	0.0	
BIC9074	101 E Wildlife Management	3.0	3.0	0.0	
BIC9073	102 E Introduction to Biostatistics	3.0	3.0	0.0	
BIC9072	103 E Remote Sensing in Vegetation Ecology	2.0	2.0	0.0	
BIC9075	104 Laboratory for Biological Inquiry and Practices	1.0	0.0	2.0	
BIC9076	105 Laboratory in Curriculum Design for Scientific Inquiry and Practices	1.0	0.0	2.0	
BIC8032	106 Regulatory and Verification Mechanism Analysis for Nature-Based Carbon Sinks	3.0	3.0	0.0	

IV. Free Elective Credits: 0.0 credit is required