

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
111	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	
BIC8021	2 Experimental Physiology	2.0	2.0	0.0	
BIM0123	3 Seminar	2.0	2.0	0.0	This course must be retaken with a passing score for 2 times

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	
BIC8023	1-8 Application of Optoelectronic Technology in Biomedical	2.0	2.0	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	
BIC0108	8 Marine Ecology	2.0	2.0	0.0	
BIC0111	9 Respiratory and Circulatory Physiology	2.0	2.0	0.0	
BIC0170	10 E Forest Ecology	3.0	3.0	0.0	
BIC0175	11 Biological Invasions	3.0	3.0	0.0	
BIC9008	12 E Landscape Ecology	3.0	3.0	0.0	
BIC9009	13 Plant Genetic Engineering	3.0	3.0	0.0	
BIC9011	14 Bioindustry	2.0	2.0	0.0	
BIC9013	15 Program Language in Bioinformatics	3.0	3.0	0.0	
BIC9014	16 Algorithms in Bioinformatics	3.0	3.0	0.0	
BIC9015	17 Biological Microtechnique (including Lab.)	3.0	2.0	2.0	
BIC9021	18 E Wildlife Biology	3.0	3.0	0.0	
BIC9024	19 Principles of Systematic Biology	3.0	3.0	0.0	
BIC9025	20 Island Biogeography	3.0	3.0	0.0	
BIC9027	21 Concept and Experimental Learning of Plant Factory	2.0	1.0	2.0	
BIC9028	22 Translational Application of Stem Cell	1.0	1.0	0.0	
BIC9029	23 Translational Application of Stem Cell Experiment	1.0	0.0	3.0	
BIC9030	24 Biodiesel Biotechnology	1.0	1.0	0.0	
BIC9031	25 Biodiesel Biotechnology Experiment	1.0	0.0	3.0	
BIC9032	26 Cancer Biology	2.0	2.0	0.0	
BIC9033	27 Reactive Oxygen Species and Biological Medicine	1.0	1.0	0.0	
BIC9034	28 Methods for Reactive Oxygen Species Measurement	1.0	0.0	3.0	
BIC9035	29 Data Analysis for Ecology and Evolution in R Programming Language	3.0	3.0	0.0	
BIC9036	30 Ecological Plant Physiology	3.0	3.0	0.0	
BIC9037	31 Conservation Biology	3.0	3.0	0.0	
BIC9038	32 Disease Ecology	3.0	3.0	0.0	

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BIC9062	33 Plant Cell and Tissue Culture	3.0	3.0	0.0	
BIC0016	34 E Topics in Plant Molecular Biology	2.0	2.0	0.0	
BIC0021	35 Topics in Molecular Genetics	3.0	3.0	0.0	
BIC0023	36 Topics in Biochemistry	2.0	2.0	0.0	
BIC0029	37 Topics in Biosystematics	2.0	2.0	0.0	
BIC0038	38 Studies in Adaptation and Natural Selection	2.0	2.0	0.0	
BIC0052	39 Neuropharmacology	3.0	3.0	0.0	
BIC0059	40 Architecture of Brain	3.0	3.0	0.0	
BIC0061	41 Principles and Methods of Plant Taxonomy	2.0	2.0	0.0	
BIC0075	42 Biomathematics	3.0	3.0	0.0	
BIC9054	43 Ecophysiology	3.0	3.0	0.0	
BIC0101	44 Paper Writing and Presentation in Biological Science	2.0	2.0	0.0	
BIC0138	45 Cellular and Molecular Biology	3.0	3.0	0.0	
BIC0153	46 Regression Analysis	3.0	3.0	0.0	
BIC0185	47 Adaptation and Natural Selection	3.0	3.0	0.0	
BIC0186	48 Protein Engineering	3.0	3.0	0.0	
BIC8003	49 Ecology and Evolution of Amphibians and Reptiles	2.0	2.0	0.0	
BIC8006	50 Topics on Animal Physiology (II)	2.0	2.0	0.0	
BIC8015	51 Topics on Interaction between Marine Biology and Physical Oceanography	3.0	3.0	0.0	
BIC8016	52 Writing Scientific Papers in English	2.0	2.0	0.0	
BIC8020	53 Biotechnology for the Drug Development	2.0	2.0	0.0	
BIC7001	54 Special Topics on Intellectual Property	2.0	2.0	0.0	
BIC7002	55 Industrial Practice	3.0	3.0	0.0	
BIC7003	56 Molecular Evolution	3.0	3.0	0.0	
BIC7004	57 Translational Medicine — Novel Compounds and Chinese Herbal Medicines	2.0	2.0	0.0	
BIC7005	58 E Drug Development and Translational Medicine	2.0	2.0	0.0	
BIC7009	59 Immunochemistry	3.0	3.0	0.0	
BIC7010	60 Neuroethology	3.0	3.0	0.0	
BIC7011	61 Developmental Neurobiology	3.0	3.0	0.0	
BIC7013	62 Plant Ecology	3.0	3.0	0.0	
BIC7014	63 Conservation Genetics	3.0	3.0	0.0	
BIC0173	64 Evolutionary Biology	3.0	3.0	0.0	
BIC0174	65 E Advanced Ecology	3.0	3.0	0.0	
BIC7007	66 Population Genetics and Evolution	3.0	3.0	0.0	
BIC8010	67 Research Methods in Ecology and Evolution	1.0	1.0	0.0	
BIC0011	68 Experimental Design and Data Analysis	3.0	3.0	0.0	
BIC7012	69 Principles of Phylogenetics	3.0	3.0	0.0	
BIC0133	70 Topics in Molecular Biology	2.0	2.0	0.0	
BIC8007	71 Research Methods of Experimental Biology	2.0	2.0	0.0	
BIC0123	72 Developmental Biology	3.0	3.0	0.0	
BIC9006	73 Stem Cell Biology	3.0	3.0	0.0	
BIC0139	74 Protein and Enzyme Chemistry	2.0	2.0	0.0	
BIC0177	75 Biotechnology	3.0	3.0	0.0	
BIC8022	76 E Behavioral Ecology	3.0	3.0	0.0	
BIC9040	77 Signal Transduction	3.0	3.0	0.0	
BIC9045	78 Inquiry and Practice in Biology	2.0	2.0	0.0	
BPM0002	79 Studies in Biotech- Pharmaceutical Industry	2.0	2.0	0.0	
BPM0004	80 Research and Design Management in Bioindustry	3.0	3.0	0.0	
BPM0003	81 Biotech Product Development and Intellectual Property Management	3.0	3.0	0.0	
BPM0009	82 Translational Medicine	2.0	2.0	0.0	
BIC9044	83 Virology	2.0	2.0	0.0	
BIC9047	84 Cross-Domain Learning Chinese Medicine and Health	2.0	2.0	0.0	
BIC9046	85 Curriculum Design for Scientific Inquiry and Practices	2.0	2.0	0.0	
BIC9049	86 Overview of Biomedical Development and Commercialization	2.0	2.0	0.0	
BIC9048	87 The Application of Biotechnological Advances on Complement for Clinical Practice	2.0	2.0	0.0	
BIC9050	88 Plant Anatomy with Experiment	3.0	2.0	2.0	
BIC9051	89 Mammalogy	2.0	2.0	0.0	
BIC9053	90 Biomethodology of Cancer Research	3.0	3.0	0.0	
BIC9052	91 The Latest Modern Issues in Biomedical Research and Technology	2.0	2.0	0.0	
BIC9055	92 Evolution of Insects	3.0	3.0	0.0	
BIC9056	93 E Introduction in Virology	2.0	2.0	0.0	

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BIC9057	94 E Histology	2.0	2.0	0.0	
BIC9058	95 Basic and Applied Bone Biology	2.0	2.0	0.0	
BIC9042	96 Transgenic	2.0	2.0	0.0	
BIC9041	97 Environmental Physiology	3.0	3.0	0.0	
BIC9060	98 Pteridology	3.0	3.0	0.0	
BIC9059	99 Plant Pathology	3.0	3.0	0.0	
BIC8027	100 E Topics in Virology	2.0	2.0	0.0	
BIC8025	101 E Introduction to Statistical Analysis	3.0	3.0	0.0	
BIC8029	102 E Laboratory Rotations in Cell and Molecular Biology	3.0	3.0	0.0	
BIC8026	103 E Linear and Logistic Regression Models	3.0	3.0	0.0	
BIC8028	104 E Apply Sciences Lead to Biotechnology Industry	2.0	2.0	0.0	
BIM0125	105 E Ecoacoustics: Principle and Application	2.0	2.0	0.0	
BIM0126	106 E Knowledge Transformation and Dissemination for Life Science	2.0	2.0	0.0	

IV. Free Elective Credits: 0.0 credit is required