

Name of the Programme: M. Sc. Zoology

Course Code: ZOO-601

Title of the Course: Neurophysiology (Practical)

Number of Credits: 01

Effective from AY: 2023-24

Pre-requisites for the Course:	Basic working knowledge of the Nervous system. Parallel enrolment for the courses ZOO-601 Neurophysiology (Theory)	
Course Objectives:	1. To evaluate the biochemical techniques for brain homogenates. 2. To establish the <i>in vitro</i> primary cell culture techniques for brain tissue. 3. To perform and evaluate the learning, memory, and sensory-motor function of human subjects.	
Content:	Estimation of Glutamate and GABA from brain tissue (Chicken head) either by Spectrophotometric/ Chromatographic/ Fluro-spectrophotometric methods. Primary culture of neurons from the chicken brain. Primary culture of neurons from Chick embryo brain Numerical and pictorial memory analysis using a memory drum. Learning and short-term memory formation analysis in human subjects. Pressure phosphene, Balancing analysis using human subject. Visual test analysis for photoreception in human subjects	15 x 2 hours
Pedagogy:	Mini Projects, Group activities, Demonstrations	
References/ Readings:	1. T. R. Raju, B. M. Kutty, T. N. Sathyaprabha, B. S. Shankarnarayana Rao, Eds., Brain and Behaviour. National Institute of Mental Health and neurosciences, Bangalore, 2004. 2. K. D. Pagana, T. J. Pragana and T. N. Pagana, Eds., Mosby's Manual of Diagnostic and Laboratory Tests. Mosby, 2021. 3. F. T. Fischbach and M. A. Fischbach. Fischbach's Manual of Laboratory and Diagnostic Tests. LWW, 2017. 4. F. T. Fischbach and M. B. Dunning, A Manual of Laboratory and Diagnostic Tests. (Lippincott Williams & Wilkins, 2015. 5. C. B. Morrow, Nurse's Manual of Laboratory and Diagnostic Tests. F. A. Davis Company, 1999.	
Course Outcomes:	The learner will 1. Carry out biochemical analysis of nervous tissue. 2. Develop the <i>in vitro</i> neuronal culture system to study neurological experimental parameters. 3. Evaluate the learning and memory skills of a human subject.	

	4. Design an experimental setup to carry out neurophysiological experiments.
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