

**Biology Department, TCNJ
Learning Outcomes Map**

Course #	Course Title	General Learning Outcomes								Program Learning Outcomes (Levels: I = Introductory, II = Intermediate, III = Advanced)														
										Domain I: Acquiring knowledge and skills						Domain II: Developing skills to conduct biological research						Domain III: Understanding the place of science in a broader context		
		Critical analysis and reasoning	Scientific reasoning	Quantitative reasoning	Oral communication	Written communication	Technological competence	Information reasoning	Master the main concepts of major subdivisions within biology	Hands on experience with a comprehensive range of scientific techniques	Learn how to generate and/or quantitatively analyze data	Critically evaluate primary literature, in oral and written form	Develop oral communication skills	Develop written communication skills	Generate testable hypotheses	Design valid experiments to test hypotheses	Conduct experiments using skills appropriate to subdivisions	Analyze data using discipline appropriate assessments	Interpret data, draw conclusions, and/or refine hypotheses based on data	Communicate research findings in a variety of formats	Adhere to ethical standards for biology research	Communicate the broader impacts and/or applications of biological knowledge	Gain awareness of career options in the biological sciences	Prepare for graduate or professional school, or a career in Biology
BIO 360	Oceanography	X	X	X		X		X	I	II	III	II	I	II	III	III	II	II	III	II	III	I	I	I
BIO 365/6	Natural History of the Galapagos	X	X		X	X	X	X	II	I		II	II	II								II		
BIO 370	Topics in Biology (variable)																							
BIO 393/4	Independent Research in Biology I	X	X	X	X	X	X	X	II	II	II	II	I	II	II	II	II	II	II	II	III		II	II
BIO 399	Research Internship in Biology	X	X	X	X	X	X	X	III	III	III	III	III	III	III	III	III	III	III	III	III		III	III
BIO 410	Advances in Molecular Biology	X	X	X	X	X	X	X	III	III	II	III	III	III	II	I	III	III	II	II	III	III	II	III
BIO 411	Animal Physiology	X	X	X	X	X	X	X	III	III	III	III	II	III	III	III	III	III	III	III	III	III	II	III
BIO 413	Microscopic Anatomy and Technique	X	X			X	X	X	III	III	III	III		III			III	III	II	II	III	III	III	III
BIO 434	Molecular Biology of Gene Expression	X	X		X	X	X	X	III	III	III	III	III	III	III	III	III	III	III	III	III	III	III	III
BIO 444	Molecular Immunology and Human Dis	X	X			X		X	III		III	III	II	III	III	II	III	III	II	III	III	III	III	III
BIO 450	Advanced Eukaryotic Cell Biology	X	X		X	X	X	X	III	III	III	III	III	III	III	III	III	III	III	III	III	III	III	III
BIO 451	Developmental Biology	X	X		X	X	X	X	III	III	III	III	II	III	III	III	III	III	III	III	III	III	III	III
BIO 461	Evolution	X	X	X		X		X	III			III	III	III								III	III	III
BIO 465	Physiological Behavior and Ecol	X	X	X	X	X	X	X	III	III	III	III	II	III	II	II	III	III	III	III	III	III	I	III
BIO 470	Topics in Biology--Animal Behavior	X	X	X	X	X	X	X	III		III	III	III	III	III	III	II	III	III	III	III	III	I	III
BIO 470	Topics in Biology -- Bacterial Pathogenesis	X	X		X	X		X	III		III	III	III	III	III	III	II	III	III	III	III	III	I	III
BIO 470	Topics in Biology - Freshwater Ecology	X	X	X		X	X	X	III	II	III	III	I	I	II	II	I	I	II	I	I	I	I	II
BIO 470	Topics in Biology - Genetics of Cancer								III		II	III	III	II	II	II		III	III	II	III	III	I	III
BIO 470	Topics in Biology - Plant Genetics	X	X		X	X		X	III		III	III	III	II	III	II		III	III	III	III	III	II	III
BIO 470	Topics in Biology - Plant/Insect Interact.	X	X	X	X	X		X	III		III	III	III	III	III	III	II	III	III	III	III	III	I	III
BIO 471	Genomics and Bioinformatics	X	X	X	X	X	X	X	I	II	III	III	III	III	III	III	II	III	III	III	III	III	II	III
BIO 480	Neurobiology	X	X	X	X	X	X	X	III	I	III	II	II	III	III	III	III	III	III	III	III	III	III	III
BIO 490	Student Teaching in Biology				X	X	X	X	II				III	III							II	III	III	III
BIO 493/4	Independent Research in Biology II	X	X	X	X	X	X	X	III	III	III	III	III	III	III	III	III	III	III	III	III		II	I