

Oceanography Graduate Program Student Learning Outcomes

Upon completion of the <u>Masters</u> program in Oceanography, students will be able to:	
<i>Student Learning Outcome</i>	<i>Evaluation Criteria</i>
Define, explain and summarize the basic principles of Oceanography, including the basic tenets of the sub-disciplines, and to explain complex phenomena in their own subdiscipline	Performance in core courses and in courses specific to each student's subdiscipline
Evaluate the hypotheses, methods, results and conclusions of published scientific literature and apply conclusions to their own work	Synthesis of a written thesis prospectus which utilizes the peer reviewed literature to place their work into the context of the field
Present and defend their scientific findings in front of public audiences	Performance and response to audience questions during public presentations (e.g., second-year talks, conference venues, etc.) and the thesis defense
Write a scientific thesis which contributes to the field	The quality of critical data analysis, interpretation, and presentation in the student's written thesis
Upon completion of the <u>Doctoral</u> program in Oceanography, students will be able to:	
<i>Student Learning Outcome</i>	<i>Evaluation Criteria</i>
Perform all of the above	As above
Comprehensively synthesize, evaluate, and interpret the fundamental knowledge in their subdiscipline and how it relates to the other subdisciplines	Performance on the Comprehensive Exam
Independently construct scientific hypotheses and design and carry out research to evaluate them	Synthesis of a written dissertation proposal which delineates the student's hypotheses and a research plan to critically test and evaluate them; ability to explain and discuss the proposal to the student's committee in the context of the subdiscipline during the Comprehensive exam
Critically analyze and synthesize the results of their research to derive conclusions which advance the field and are of a quality suitable for publication in the peer-reviewed literature	Examination of the student's written dissertation by their committee

Program Learning Outcomes (PLO) and Institutional Learning Objectives (ILO) 2023

Program Name: Oceanography (MS)

ILO	Knowledge, skill, or value/disposition as evidenced by:
ILO 1. Knowledge of Concepts	Demonstrate comprehensive knowledge in the principles of oceanography, including the basic tenets of the sub-disciplines.
ILO 2. Knowledge of Methods	Demonstrate understanding of state-of-the-art advanced methods of oceanographic analysis to understand ocean complexities.
ILO 3. Conduct Research	Conduct novel research and methods to explore significant findings in the ocean sciences.
ILO 4. Critical Analysis	Critically analyze, synthesize, and utilize information and data through advanced oceanographic observations.
ILO 5. Communication	Communicate both orally and in writing at a high level of proficiency.
ILO 6. Ethics	Adopt the principles of proper ethical behavior through respect of cultural perspectives and other sources of knowledge. Understand the broader impacts of oceanographic research on society.
ILO 7. Professionalism	Ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish and meet objectives.

Program Learning Outcomes (PLO) and Institutional Learning Objectives (ILO) 2023

Program Name: Oceanography (PhD)

ILO	Knowledge, skill, or value/disposition as evidenced by:
ILO 1. Knowledge of Concepts	Demonstrate comprehensive knowledge in the principles of oceanography, including the basic tenets of the sub-disciplines. Knowledge of the dynamic processes conducted in their specialized field is assessed through a comprehensive exam.
ILO 2. Knowledge of Methods	Demonstrate understanding and in some cases, expertise, of state-of-the-art advanced methods of oceanographic analysis to understand ocean complexities.
ILO 3. Conduct Research	Independently conduct novel research and methods to explore significant findings in the ocean sciences.
ILO 4. Critical Analysis	Critically analyze, synthesize, and utilize information and data through advanced oceanographic observations.
ILO 5. Communication	Communicate rationale, methodologies, and recommendations of projects effectively in written and verbal form.
ILO 6. Ethics	Adopt the principles of proper ethical behavior through respect of cultural perspectives and other sources of knowledge. Understand the broader impacts of oceanographic research on global, environmental and societal contexts.
ILO 7. Professionalism	Ability to function effectively on a team (or lead a team) whose members together provide leadership, create a collaborative and inclusive environment, establish and meet objectives.

**CURRICULUM MAP
FOR OCEANOGRAPHY GRADUATE PROGRAM**

MS OCEANOGRAPHY							
	ILO 1 Knowledge of Concepts	ILO 2 Knowledge of Methods	ILO 3 Conduct Research	ILO 4 Critical Analysis	ILO 5 Communication	ILO 6 Ethics	ILO 7 Professionalism
MS Requirements							
Course & Program Requirements	I	I		I		I	
Annual student presentations	R	R		R	I		I
Thesis committee				M	R	R	R
Develop thesis project	M	M	M	M		M	
Defense	M	M		M	M		M
Final Thesis	M	M		M	M	M	
PhD OCEANOGRAPHY							
	ILO 1 Knowledge of Concepts	ILO 2 Knowledge of Methods	ILO 3 Conduct Research	ILO 4 Critical Analysis	ILO 5 Communication	ILO 6 Ethics	ILO 7 Professionalism
PhD Requirements							
Course & Program Requirements	I	I		I		I	
Annual student presentations	R	R		R	I		I
Comprehensive Exam	M				R		R
Dissertation committee				M	R	R	R
Develop dissertation project	M	M	M	M		M	
Defense	M	M		M	M		M
Final Dissertation	M	M		M	M	M	
Abbreviations							
I - ILO is introduced							
R - ILO is reinforced							
M - ILO is mastered							