UNIVERSIDADE FEDERAL DE SANTA CATARINA
PÓS-GRADUAÇÃO EM ECOLOGIA

SYLLABUS

SEMESTER 01 / 2025

1. COURSE IDENTIFICATION – Classroom and fieldwork in person **(CEBIMAR – São Sebastião, SP)**				
CODE	**COURSE**	**WEEKLY HOUR/CLASSES**		**TOTAL HOURS SEMESTER**
ECO3201000	**ECOLOGY, EVOLUTION AND CONSERVATION OF REEF FISHES**			45
	Number of students: 6			Credits: 3

2. TIMETABLE

10 to 18 Mar 2025. Mornings (08:30–12:00h) Afternoons (14:00–19:00h) – Classroom and fieldwork course in person

3. INSTRUCTORS

Prof. Sergio R. Floeter, Prof. Hudson Pinheiro, and Prof. Carlos E.L. Ferreira

4. COURSE OFFER

Graduate Program in Ecology at UFSC, USP, UFF, UFSM and UFRJ

5. SYLLABUS

Reef systems: definition and characterization; Reef fish: characteristics, adaptations and specializations, most representative families; Life cycle characteristics: pelagic, juvenile and adult larval stage, reproduction; Diversity: gradients of diversity, abundance and distribution; Biogeography: main biogeographic regions, barriers and dispersion pathways; Evolution of reef fish; Trophic ecology: main trophic categories and guilds, food; Interactions: predation, herbivory and symbiosis; Management and Conservation: exploration, extinction and research.

6. GOALS

Present and discuss concepts, the theoretical framework as well as provide fieldwork experience related to the ecology, evolution and conservation of reef fish from the global to the local scale.

7. PROGRAM CONTENT

- Reef systems: definition and characterization;
- Reef fish: characteristics, adaptations and specializations, most representative families;
- Life cycle characteristics: pelagic, juvenile and adult larval stage, reproduction;
- Diversity: gradients of diversity, abundance and distribution;
- Biogeography: main biogeographic regions, barriers and dispersion routes;
- Evolution of reef fish;
- Trophic ecology: main trophic categories and guilds, food; Interactions: predation, herbivory and symbiosis;
- Management and Conservation: exploration, extinction and research.

8. TEACHING METHOD / PROGRAM DEVELOPMENT

Four mornings will be devoted to field sampling and data analysis. Three mornings and seven afternoons will be devoted to theoretical classroom activities, which will include thematic exhibitions and lectures with special guests on the topics covered on the day. The periods between 5 and 6 pm will be devoted to activities for reading articles, preparing projects and materials for field work, in addition to critical summaries of the articles read.

9. EVALUATION METHOD

Group exercises, participation in theoretical and practical classes, and critical summaries prepared from the articles read. The final grade will be composed of the average of the critical summaries (30%), participation in classes (20%) and the written test (50%).

10. SCHEDULE

	Morning (08:30–12:00h)	Afternoon (14:00–19:00h)
Mon 10 Mar	Presentation and Introduction, Characterization and history of reef fish + life cycle	Biogeography: patterns of richness, barriers and patterns of endemism. Fish ID
Tue 11	Biogeography: evolution and phylogenies / Global reef fish macroecology	Preparation of projects + General trophic ecology / fish/benthos interactions + cleaning behavior
Wed 12	Fieldwork	Community structure + Macroecology + Trophic ecology + Herbivory
Thu 13	Fieldwork	Macroecology; PPBio
Fri 14	Fieldwork	Reproduction, growth, productivity
Sat 15	Fieldwork	Human impacts. Conservation
Sun 16	Data analyses	Conservation, connectivity, MPAs
Mon 17	Conservation, climate change	Preparation for the final presentation
Tue 18	Presentation of the projects results	Presentation of the projects results

11. BASIC LITERATURE

Deloach, N. 1999. Reef Fish Behavior: Florida, Caribbean and Bahamas. New World Publications, Jacksonville, FL, 360 pp.
Floeter, S.R. et al. 2008. Atlantic reef fish biogeography and evolution. J. Biogeogr. 35: 22–47.
Floeter, S.R. et al. 2023. Peixes Recifais Brasileiros. Editora CRV, Curitiba, PR, 320 pp.
Mora, C. 2015. Ecology of Fishes on Coral Reefs. Cambridge University Press, Cambridge, UK, 374 pp.
Rocha L.A. & Bowen B.W. 2008. Speciation in coral reef fishes. J. Fish Biol. 72: 1101–1121
Pinheiro, H.T. et al. 2018. Southwestern Atlantic reef fishes. Diversity and Distributions. 24: 951–965.
Rocha L.A., Bowen B.W. 2008. Speciation in coral reef fishes. J Fish Biol 72: 1101-1121
Sale P.F. 1991.The Ecology of Fishes on Coral Reefs. Academic Press, San Diego, CA, 754 pp.
Sale P.F. 2002. Coral Reef Fishes: Dynamics and Diversity in a Complex Ecosystem. Academic Press, San Diego, CA, 549 pp.

https://www.lecaruff.com.br / https://lbmm.ufsc.br