

Code: ECO3102-000

Course: Community Ecology and Ecosystems

Weekly class hours: 4 **Total hours:** 60

Instructors: Dr. Malva Isabel Medina Hernández
Dr. Sergio R. Floeter
Dr. Mauricio Mello Petrucio

Semester/Year: 2022/01

Duration: 05/31/2022 to 07/21/2022

Timetable: Tuesdays and Thursdays, from 2:00 pm to 6:00 pm (classroom course)

Number of students: 30

Classroom: SIPG 15 (to be defined)

Place of attendance to students: Room of the respective professor

Prerequisites: none

Syllabus:

Community assembly, patterns and processes in community ecology. Patterns of diversity. Metacommunities. Temporal processes, succession. Community macroecology. Ecological niche and functional diversity. Influence of interactions in structuring communities. Species distribution patterns, latitudinal gradients. Complexity and stability in ecosystems. Energy flow, productivity patterns and diversity. Dynamics of organic matter. Diversity and global climate change.

Teaching methodology:

The course will be held in a semi-concentrated way on Tuesdays and Thursdays, from 2:00 pm to 6:00 pm. In the first two hours of class there will be an expository presentation of the themes and in the next two hours books and articles will be discussed in each class. They will be previously delivered via the moodle platform and must be read by all students and presented by two students, who will be moderators of the discussion.

Evaluation method:

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- Participation in classes during the topics presented.
 - Presentation of articles
 - Final work on one of the subjects of the discipline.

Program content and schedule:

Class	Date	Theme
1	05/31	Community assembly, patterns and processes in community ecology
2	06/02	Ecological niche
3	06/07	Alfa diversity
4	06/09	Beta diversity and partition of β diversity
5	06/14	Metacommunities
-	06/16	<i>holiday</i>
6	06/21	Community macroecology
7	06/23	Interactions in structuring communities. Comparative terrestrial and marine diversity
8	06/28	Functional diversity
9	06/30	Distribution patterns, latitudinal gradients. Influence of evolutionary history
10	07/05	Temporal processes, succession
11	07/07	History and concepts in Ecosystemology. Complexity and stability
12	07/12	Dynamics of organic matter. Nutrient cycling
13	07/14	Energy flow, productivity patterns and diversity
14	07/19	Diversity and global climate change
15	07/21	Final discussion of the works and evaluation of the discipline

Basic literature:

- BEGON, M., TOWNSEND, C.R. & HARPER, J.L., 2006. Ecology: From Individuals to Ecosystems. 4thed. London: Blackwell Scientific Publications.
- KREBS, C.J. 2009. Ecology: The Experimental Analysis of Distribution and Abundance. 6thed. University of British Columbia, Vancouver.
- GOLLEY, F.B., 1996. A History of the Ecosystem Concept in Ecology: More Than the Sum of the Parts. Yale University Press.
- MAGURRAN, A.E. 2004. Measuring Biological Diversity. Blackwell Science Ltda.
- MAGURRAN, A.E., MCGILL, B.J. 2011. Biological Diversity. Frontiers in Measurement and Assessment. Oxford University Press.
- PIANKA, E. 1994. Evolutionary Ecology. New York. Harper Collins.
- ODUM, E.P. 1985. Ecologia. Rio de Janeiro, Interamericana, 434p.
- ODUM, E.P. 1993. Ecology. Sunderland, Sinauer, 301p.
- RICKLEFS, R.E. 2010. A Economia da Natureza. 6^a ed. Rio de Janeiro. Ed. Guanabara Koogan.
- VERHOEF, H.A., MORIN, P.J. 2010. Community Ecology. Processes, Models, and Applications. Oxford University Press.