



Universidad de Puerto Rico
Recinto Universitario de Mayagüez
Colegio de Artes y Ciencias
Departamento de Biología



COURSE SYLLABUS

GENERAL INFORMATION:

COURSE TITLE: **PRINCIPIOS DE EVOLUCIÓN**
 ALPHANUMERIC BIOL 4335
 CODIFICATION:
 CONTACT HOURS / CREDITS 45 hours / Three credits
 PREREQUISITES,
 COREQUISITES AND OTHER BIOL3052 o CIBI3032 o permiso del director
 REQUIREMENTS:

COURSE DESCRIPTION:

ENGLISH: Mechanisms, processes, and consequences of evolution: factors that cause genetic changes in populations; speciation; population genetics; coevolution, and macroevolution. **«Face to face course»**

SPANISH: Mecanismos, procesos, y consecuencias de la evolución, los factores que causan los cambios genéticos en las poblaciones; especiación; genética de poblaciones; coevolución, y macroevolución. **«Curso Presencial».**

LEARNING OBJECTIVES:

At the end of the course students will be able to:

Estudiar los mecanismos, procesos y consecuencias de la evolución, los factores que causan los cambios genéticos en las poblaciones; la especiación; genética de poblaciones, la coevolución, y macroevolución.

SUGGESTED TEXTBOOK: Futuyma, Douglas J. and Mark Kirkpatrick. 2017. Evolution. 4th Edition. Sinauer Associates, Inc. ISBN 9781605356051 9781605356051

COURSE OUTLINE AND TIME DISTRIBUTION:

CONFERENCE TOPIC	TIME DISTRIBUTION (HOURS)
1- Evolutionary Biology	3

2- The Tree of Life	3
3- Natural Selection and Adaptation	2
17-The History of Life	3
18- The Geography of Evolution	3
19- The Evolution of Biological Diversity	2
20- Macroevolution: Evolution above the Species Level	2
Exam 1	2
4- Mutation and Variation	3
7- Genetic Drift: Evolution at Random	2
8- Evolution in Space	3
9- Species and Speciation	3
10-All About Sex	3
11-How to Be Fit	3
12- Cooperation and Conflict	2
13- Interactions among Species	2
14-The Evolution of Genes and Genomes	3
Final Exam	2
TOTAL CONTACT HOURS	45

INSTRUCTIONAL STRATEGIES:

Some of the following may be used:

<input checked="" type="checkbox"/> Lectures	<input checked="" type="checkbox"/> Project Based Learning
<input checked="" type="checkbox"/> Discussion	<input type="checkbox"/> Seminars or Workshops
<input checked="" type="checkbox"/> Cooperative Learning	<input type="checkbox"/> Problem Based Learning (PBL)
<input type="checkbox"/> Case Studies	<input checked="" type="checkbox"/> Flipped Classroom
<input checked="" type="checkbox"/> Lectures with Guest Speakers	

MINIMUM OR REQUIRED RESOURCES AVAILABLE:

RESOURCE	FACE-TO-FACE
Classroom or laboratory	Institution
Account in the institutional learning management platform (e.g. Moodle or Blackboard)	Institution
Institutional email account	Institution
Computer with high-speed internet access or mobile device with data service	Student
Programs or applications: word processor, spreadsheets, presentation editor	Student
Webcam or mobile with camera and microphone	Student
Integrated or external speakers	Student
Whiteboard	Institution
Digital projector	Institution

ASSESSMENT TECHNIQUES: Include a list of available assessment techniques according to the course department. You may delete those that you will not use in the course and add/modify any that are not listed. (Examples of assessment techniques)

Assessment Technique	Relative Weight
<input checked="" type="checkbox"/> Exams	50% (25% each)
<input checked="" type="checkbox"/> Assignments	5%
<input checked="" type="checkbox"/> Short quizzes	40%
<input checked="" type="checkbox"/> Informed participation in class	5%
<input checked="" type="checkbox"/> Attendance	-
Total:	100%

Standard scale: 90 to 100 A; 80 < 90 B; 70 < 80 C; 60 < 70 D; < 60 F

Participación en la discusión: Los estudiantes serán evaluados al participar en tareas de discusión en persona y en Moodle. Esto representará el 10% de su nota final.

Nota trabajo parcial: 10 pruebas cortas. Esto representará el 40% de su nota final. 1 examen parcial y tendrá un valor de 50 puntos y representará el 25% de su nota final.

Examen Final: La fecha se avisará al final de semestre. El examen será **final-parcial** y tendrá un valor de 50 puntos y representará el 25% de su nota final.

REASONABLE MODIFICATION (REASONABLE ACCOMMODATION):

The University of Puerto Rico (UPR) acknowledges the right of students with disabilities to an inclusive, equitable, and comparable post-secondary education. In accordance with its policy toward students with disabilities, based on federal and state legislation, every qualified student with disabilities is entitled to equal participation in those services, programs, and activities that are physically, mentally or sensorially natured and have thus substantially affected one or more major life activities, such as their area of post-secondary studies. They have the right to receive reasonable accommodation or modifications. If you require accommodation or reasonable modification in the course, you must inform the professor without the need to disclose your condition or diagnosis. Simultaneously, you should promptly request the Office of Services for Students with Disabilities (OSEI) of the unit or campus for your need for modification or reasonable accommodation.

The University of Puerto Rico at Mayagüez (RUM) recognizes that each student has an inherited right to request reasonable accommodation according to Law 51: Law for Integral Educational Services for People with Disabilities. Every student has the right to receive reasonable accommodation if he/she presents the necessary evidence to be evaluated by the Office of Services to Students with Disabilities (OSEI-RUM), and the related information can be found at the following link: <https://www.uprm.edu/cms/index.php/page/85>. If your case is approved by OSEI-RUM, you will receive reasonable accommodation in your courses and evaluation, and

you must contact each professor for course registered. For additional information contact OSEIRUM at the Office of the Dean of Students, DE 12, via telephone 787-832-4040 extensions 6734 or 6735, email: oseirum@uprm.edu, at the virtual office: <https://meet.google.com/yvd-nrqo-mor>, or join by telephone: (US)+1 475-558-0169 PIN: 814 895 818#.

ACADEMIC INTEGRITY:

The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Section 6.2 of the UPR General Student Regulations (Certification No.13, 2009-2010, Board of Trustees) provides that academic dishonesty includes, but is not limited to: “fraudulent actions, obtaining grades or academic degrees by false or fraudulent simulations, copying all or part of another’s academic work, copying all or part of another’s answer to questions on an examination, taking or having another take any oral or written test or examination on behalf of another, and aiding or facilitating another person to engaging such conduct.” Any of these actions will be subject to disciplinary sanctions in accordance with the disciplinary procedure provided in the UPR General Student Regulations in force. To ensure the integrity and security of user data, all hybrid, distance-learning and online courses shall be offered through the institutional learning management platform or through tools required by the course, which uses secure connection and authentication protocols. The system authenticates the user identity using the username and password assigned through the student institutional account. The user is responsible for keeping secure, protecting, and not sharing their password with others.

POLICY AND PROCEDURES FOR MANAGING SEX AND GENDER-BASED DISCRIMINATION AT THE UNIVERSITY OF PUERTO RICO:

The Policy and procedures for managing Sex and Gender-Based Discrimination at the University of Puerto Rico, Certification No. 107 (2021-2022) of the Governing Board, certifies that the University of Puerto Rico, as an institution of higher learning and a workplace, safeguards the rights and offers a safe space for those who interact therein, whether they be students, employees, contractors, or visitors. It seeks to promote an environment that respects diversity and the rights of the university community. This policy provides a protocol for handling situations related to the following prohibited conduct in the workplace or in the academic setting: discrimination based on sex, gender, pregnancy, sexual harassment, sexual violence, domestic violence, dating, violence, and stalking.

DIVERSITY, EQUITY, AND INCLUSION

The University of Puerto Rico is committed to establishing an environment that values diversity, promotes equity and equality, and aspires to the full inclusion of its entire university community. Courses will be offered in an inclusive and equitable environment, ensuring the participation of students with diverse backgrounds, experiences, and abilities. Thus, the University of Puerto

Rico reiterates its dedication to upholding the principles of diversity, equity, and inclusion in its academic programs.

CONTINGENCY PLAN IN CASE OF AN EMERGENCY OR INTERRUPTION OF CLASSES

In the event of an emergency or interruption of classes, the professor will contact the students through the institutional email or other available means to coordinate the continuity of the course.

The contingency plan must preserve the modality in which the course was created and programmed in the course offering.

Certification 23-29 of the Academic Senate establishes that a face-to-face course may have up to 25% of the hours at a distance and if necessary, this option may be used.

GRADING SYSTEM

☒ Quantifiable (letters, A, B, C, D, F) ☐ Not Quantifiable (Pass, Fail)

BIBLIOGRAPHY:

- 1) Futuyma, Douglas J. and Mark Kirkpatrick. 2017. Evolution. 4th Edition.
Sinauer Associates, Inc. ISBN 9781605356051 9781605356051
 - 2) Losos, Jonathan B. *Improbable destinies: Fate, chance, and the future of evolution*.
Penguin, 2018. (ebook o audiolibro)
 - 3) Chakrabarty, P. *Explaining Life Through Evolution* - U.S. Edition paperback 2023
from MIT PRESS
-