

**BIO 370 – EVOLUTION
SUMMER 2024, SEVILLA, SPAIN**

Course Description: BIO 370 is an introduction to modern evolutionary biology focusing on the evolution of molecular, developmental, morphological, and behavioral traits. The course covers genetic and ecological bases of evolutionary changes within populations and of evolutionary divergence in animals and plants. This Study Abroad version of the course will take advantage of the international location by including such topics as endemism and the endemic flora and fauna of the Iberian Peninsula, and the genetics of artificial selection with special reference to domesticated plants and animals important to Spanish culture and society.

Course Objectives: The primary objective of this course is to help you develop a deeper understanding of both microevolutionary and macroevolutionary processes.

Course Format: The course consists of two types of instruction: lectures that will present the course material in what is hopefully an interesting and helpful-for-learning manner, and field trips that are intended to provide unique opportunities for putting evolutionary biology into an international and cultural context.

Instructor: Dr. Mark W. Bierner – bierner@utexas.edu

Textbook: *Evolution* – 3rd Edition, 2023. Bergstrom and Dugatkin, Norton & Company.

Homepage: <http://canvas.utexas.edu> (access requires you to login with your EID and Password).

Prerequisites: BIO 370 is an upper division Biology course. The prerequisites for admission to the class are: Biology 311C (or 211) and 311D (or 214), with a grade of at least C- in each followed by Biology 325 or 325H with a grade of at least C-. Note: Biology 325H has a prerequisite of Biology 315H with a grade of at least C-.

Grading: There will be two components to your grade in this course: exams and attendance/participation. There will be three exams (format to be determined) worth 90 points each accounting for a total of 270 points in the exam category. To assure that you come to class well prepared, 30 points will be assigned in the area of attendance and participation. Here is the breakdown:

	<u>Points Possible</u>	<u>Percentage</u>
Three exams (90 points per exam)	270	90%
Attendance/participation	<u>30</u>	<u>10%</u>
Total	300	100%

Final Course Grade Standards (Note: I will NOT be using a plus/minus grade system):

90-100% (270-300 points) = A
80-89.9% (240-269 points) = B
70-79.9% (210-239 points) = C
60-69.9% (180-209 points) = D
0-59.9% (0-179 points) = F

Lecture and Excursion Attendance Policy: Lecture and excursion attendance is mandatory, not optional. Attendance means being on time and staying until the class or excursion is finished. Believe it or not, I am not trying to engage in the practice of *in loco parentis*. I simply think that attendance is part of the learning process and part of the overall experience.

Incomplete Policy: Any incomplete grade given must be verified with a written agreement with the student that specifies the work to be done and a timetable for completion. In accordance with University policy, the grade of incomplete can only be awarded in cases of students whose circumstances prevent them from finishing the required work for the course.

Special Needs and Accommodations: I will do everything in my power to accommodate students with special needs. The following is from the Services for Students with Disabilities (SSD) homepage:

“At SSD, we determine eligibility and help implement reasonable accommodations for students with disabilities at the University of Texas at Austin. More general resources for the UT community may be found on UT’s Disability Resource page.

“SSD is housed in the Office of the Dean of Students, located on the fourth floor of the Student Services Building. Information on how to register, downloadable forms, including guidelines for documentation, accommodation request letters, and releases of information are available online. Please do not hesitate to contact us at (512) 471-6259, VP: 1-866-329-3986 or via e-mail if you have any questions. We look forward to making your experience at the university more accessible!”

Title IX: Beginning January 1, 2020, Texas Senate Bill 212 requires all employees of Texas universities, including faculty, to report any information to the Title IX Office regarding sexual harassment, sexual assault, dating violence and stalking that is disclosed to them. Texas law requires that all employees who witness or receive any information of this type (including, but not limited to, writing assignments, class discussions, or one-on-one conversations) must be reported. If you would like to speak with someone who can provide support or remedies without making an official report to the university, please email advocate@austin.utexas.edu. For more information about reporting options and resources, visit <http://www.titleix.utexas.edu/>, contact the Title IX Office via email at titleix@austin.utexas.edu, or call 512-471-0419. The Title IX office has developed supportive ways to respond to a survivor and compiled campus resources to support survivors.

Academic Integrity: Scholastic dishonesty in any form will not be tolerated. Students who violate rules on scholastic honesty are subject to disciplinary penalties including the possibility of failing the course and being dismissed from the university. See http://deanofstudents.utexas.edu/sjs/scholdis_whatish.php for additional information on scholastic dishonesty.

Confidentiality of Student Records: We strive to maintain the anonymity of individual students taking this course relative to grades given on assignments or exams, or final grades at the completion of the course.

COVID-19 Vaccination Statement from Academic Programs International:

API recommends that all participants have received a COVID-19 vaccine and booster prior to travel, as dictated by the CDC and/or a personal physician. Additionally, we suggest that participants ensure they are up to date with all routine vaccinations and any that are recommended for their host country.

API will advise participants of specific in-country COVID-19 requirements for entry and local access. Participants should travel with their U.S. CDC card and/or electronic proof of vaccination.

As always, API's primary objective is to keep our participants safe and supported, and as such, we will continue to monitor the entry restrictions and communicate any new testing, vaccination, or quarantine requirements that may become necessary.

**BIO 370 – EVOLUTION
SUMMER 2024
SCHEDULE OF LECTURES AND EXAMS**

<u>Topics</u>	<u>Chapter</u>
Madrid – The Plant Kingdom (For visit to Jardín Botánico de Madrid)	PowerPoint
Lecture 1 – Darwin’s Theory	2
Lecture 2 – Artificial Selection and the Domestication of Plants and Animals	Notes
Lecture 3 – Artificial Selection and the Domestication of Plants and Animals	Notes
Lecture 4 – Artificial Selection and the Domestication of Plants and Animals	Notes
Lecture 5 – Transmission Genetics and the Sources of Genetic Variation	6
Lecture 6 – Transmission Genetics and the Sources of Genetic Variation	6
Lecture 7 – The Genetics of Populations	7
Lecture 8 – The Genetics of Populations	7
Lecture 9 – The Genetics of Populations	7
Lecture 10 – The Genetics of Populations	7
Lecture 11 – Evolution in Finite Populations	8
Lecture 12 – Evolution in Finite Populations	8
Lecture 13 – Evolution in Finite Populations	8
Lecture 14 – Evolution in Finite Populations	8
Exam I	
Lecture 15 – The Origin and Evolution of Early Life; Evolution of the Eukaryotic Cell	11, 12
Lecture 16 – The Origin and Evolution of Early Life; Evolution of the Eukaryotic Cell	11, 12
Lecture 17 – Evolution and Development	13
Lecture 18 – Evolution and Development	13
Lecture 19 – Phylogeny and Evolutionary History	4
Lecture 20 – Phylogeny and Evolutionary History	4
Lecture 21 – Phylogeny and Evolutionary History	4
Lecture 22 – Phylogeny and Evolutionary History	4
Lecture 23 – Inferring Phylogeny	5
Lecture 24 – Inferring Phylogeny	5
Lecture 25 – Inferring Phylogeny	5
Lecture 26 – Inferring Phylogeny	5
Exam II	
Lecture 27 – Species and Speciation	14
Lecture 28 – Species and Speciation	14
Lecture 29 – Species and Speciation	14
Lecture 30 – Human Evolution	19
Lecture 31 – The Iberian Peninsula: Prehistoric Iberia	Notes
Lecture 32 – The Iberian Peninsula: Refugia and Endangered Species	Notes
Lecture 33 – Extinction and Evolutionary Trends	15
Lecture 34 – Extinction and Evolutionary Trends	15
Lecture 35 – Coevolution	18
Lecture 36 – Coevolution	18
Lecture 37 – Evolution and Medicine	20
Lecture 38 – Evolution and Medicine	20
Exam III	

Class will meet from 3:00 to 5:00 PM at the University of Sevilla. The three exams will be independent of one another. There will be no comprehensive final exam.

EUS 347* – SUMMER 2024
CONTEMPORARY SPAIN: ECONOMY, SOCIETY AND ENVIRONMENT
UNIVERSITY OF SEVILLA

Lecturer: Professor Mónica Aguilar Alba, Universidad de Sevilla

Course Objectives:

- An understanding of the geographical diversity of Spain that determines the cultural and environmental richness of the country.
- Understand the main features of the Spanish State and its organization in the context of the European Union.
- A coherent content focused upon relationships between people and the natural environment, as well as patterns of spatial relationships throughout Spain.
- An understanding of how these relationships produce the distinctiveness of particular places, landscapes, and patterns of environmental and human attributes, as well as societies and identities.
- The ability to conceptualize these relationships and their outcomes across a range of scales focusing on relevant current issues.
- An appreciation of the characteristics and problems of the urban, regional and rural environments of selected areas in Spain.
- An understanding of the practical application of concepts and methods learned in the classroom.

Students should develop a knowledge and understanding of:

- The political and administrative organization of Spain.
- The relationships between human and physical systems within Spain.
- The demographic, economic, and environmental characteristics of the regions within Spain.

Students will have the opportunity of developing the following skills:

- To be able to differentiate among regions in terms of key geographical characteristics.
- To discuss the nature of the main environmental problems affecting Spain.
- To understand some of the processes and trends shaping Spain today.
- To acquire the capacity to analyze broader environmental, social and economic challenges.

*Students will be registered by the Education Abroad Office for a placeholder course called AS F000. This will then be changed to EUS 347 when the transcripts arrive from Seville.

EUS 347 – SUMMER 2024
CONTEMPORARY SPAIN: ECONOMY, SOCIETY AND ENVIRONMENT
SCHEDULE OF LECTURES AND EXAMS

Lectures and student-centered learning will cover the following topics.

TOPIC 1: INTRODUCING SPAIN

- 1.1 - Geographical location. An extremely diverse country
- 1.2 - Mountain ranges. Landscapes and environmental diversity
- 1.3 - Climate and water resources. Water management and climate risks
- 1.4 - The coast. Environmental values and impacts.
- 1.5- Practical activities

Students presentations topic 1

Exam I

TOPIC 2. HISTORICAL AND POLITICAL CONTEXT

- 2.1 - Brief history of Spain
- 2.2 - The Spanish State. Administrative organization
- 2.3 - Cultural and linguistic diversity
- 2.4.- Spanish political parties
- 2.5 - Contemporary Political Issues
- 2.6 - European Union: history and principles
- 2.8 -The European Union: main institutions and policies
- 2.9 - Practical activities

Students presentations topic 2

Exam II

TOPIC 3. ECONOMY AND SOCIETY

- 4.1 - Population distribution and dynamics
- 4.2 - Contemporary Social Issues. Migration and population aging
- 4.3 - Education and health system
- 4.4 - Main economic activities: tertiary sector and prevailing service work
- 4.5 - Contemporary Socio-economic Issues
- 4.6 - Current problems: urbanization and tourism gentrification
- 4.7 - Practical activities

Students presentations topic 3

Exam III (final)

Lectures will be given from 5:30 PM to 7:00 PM at the University of Sevilla in accordance with the attached program itinerary. Various cultural activities will also be included in the program as indicated.

Students working in small groups will prepare 15-minute PowerPoint presentations about relevant issues related to the topics of the syllabus. A list of possible topics will be provided, but students can also propose alternative topics. The subject of the presentation should be described with reference to The United States (EEUU) and Spain ending with relevant conclusions based on a comparison between the two countries.

The presentations will be evaluated by the instructor, and the contents will also be part of the materials to be studied for the corresponding exams. Therefore, in advance of each presentation the group should hand in a brief essay about the contents to the instructor. The days for the presentations will normally be during the regular class times. Guides and materials to support the group projects will be provided.

There will be three exams during the course corresponding to different topics as specified in the syllabus. Each of the exams will cover the class materials, the practical activities and the student presentation contents for the corresponding topics.

Grading: There will be four components to your grade in this course: exams, group project, practical activities, and attendance/participation. Here is the breakdown:

	<u>Percentage</u>
Exam I	20%
Exam II	20%
Exam III	20%
Group Project	20%
Practical Activities	15%
Attendance/Participation	<u>5%</u>
Total	100%

Final Course Grade Standards (Note: We will NOT be using a plus/minus grade system):

90-100% = A

80-89.9% = B

70-79.9% = C

60-69.9% = D

0-59.9% = F

Schedule Evolution: An International and Cultural Perspective Education Abroad Summer 2024

Date	Morning	Afternoon/Evening
Tuesday, June 4	Depart US for Madrid	
Wednesday, June 5	Arrive Madrid/Transfer to Hotel* and Check-in	Orientation and Walking Tour; Free for Dinner
Thursday, June 6	Madrid: Royal Botanical Garden	Free Afternoon; Welcome Dinner
Friday, June 7	Field Trip – Parque Nacional de la Sierra de Guadarrama	Free Afternoon; Free for Dinner
Saturday, June 8	Madrid: Museo del Prado	Free Afternoon; Free for Dinner
Sunday, June 9	Depart for Sevilla Córdoba: Walking Tour; Mezquita de Córdoba	Arrive Sevilla Check into Residence Hall or Meet Host Families Free for Dinner
Monday, June 10	Orientation and Visit Classroom; City Bike Tour	Classes Begin (Culture Class Topic 1)
Tuesday, June 11	Free Morning	Classes (Culture Class Topic 1)
Wednesday, June 12	Real Alcázar de Sevilla	Classes (Culture Class Topic 1)
Thursday, June 13	Free Morning	Classes (Culture Class Presentations Topic 1)
Friday, June 14	Free Morning	Classes (Culture Class Exam I)
Saturday, June 15	Free Weekend	
Sunday, June 16	Free Weekend	
Monday, June 17	Free Morning	Classes (Culture Class Topic 2)
Tuesday, June 18	Free Morning	Classes (Culture Class Topic 2)
Wednesday, June 19	Paella Class Group I	Classes (Culture Class Topic 2) (Evolution Exam I)
Thursday, June 20	Paella Class Group II	Classes (Culture Class Topic 2)
Friday, June 21	Free Long Weekend	
Saturday, June 22	Free Long Weekend	
Sunday, June 23	Free Long Weekend	
Monday, June 24	Free Morning	Classes (Culture Class Topic 2)
Tuesday, June 25	Free Morning	Classes (Culture Class Topic 2)
Wednesday, June 26	Institute of Developmental Biology; Research Seminar I**	Classes (Culture Class Presentations Topic 2)
Thursday, June 27	Catedral de Sevilla and Giralda	Classes (Culture Class Exam II)
Friday, June 28	All-day field trip – Parque Natural Sierra Grazalema	
Saturday, June 29	Free Weekend	
Sunday, June 30	Free Weekend	

Monday, July 1	Free Morning	Classes(Culture Class Topic 3)
Tuesday, July 2	Free Morning	Classes (Culture Class Topic 3) (Evolution Exam II)
Wednesday, July 3	Research Center CABIMER; Research Seminar III***	Classes (Culture Class Topic 3)
Thursday, July 4	Free Morning	Classes (Culture Class Topic 3)
Friday, July 5	All-day field trip: Puerto de Santa María (Sherry Bodega) and Cádiz Free Weekend	
Saturday, July 6		
Sunday, July 7		
Monday, July 8	Free Morning	Classes (Culture Class Topic 3)
Tuesday, July 9	Free Morning	Classes (Culture Class Presentations Topic 3)
Wednesday, July 10	Free Morning	Classes (Culture Class Final Exam)
Thursday, July 11	Free Morning	Classes
Friday, July 12	Free Morning	Classes (Evolution Exam III) Farewell Dinner
Saturday, July 13	Depart From Sevilla International Airport Students responsible for their own transportation arrangements	

*Hotel - TBD

**Research Seminar. Research Scientist, Institute of Developmental Biology. Dr. Juan Tena.

***Research Seminar. Research Scientist, Research Center CABIMER. Dr. Valentine Comaills.

This itinerary may vary depending on the exact dates of national and local holidays.