Course Syllabus: Virtual Biodiversity

Please check the online course for the most up-to-date version of course materials and assignments.

If the online materials differ from this print study guide, the online materials take precedence.

Course Information

Course Description

The science of Biodiversity is the study of life on earth, both past and present. It involves the exploration and measurement of the amount of genetic, species, and ecological variation on earth and is emerging as one humanityâ€™s most important and urgent endeavors. Scientific efforts to study earthâ€™s biodiversity have intensified because of our growing appreciation of the role human population growth and urbanization play in accelerating the extinction of plant and animal species. This course introduces you to central issues concerning life on earth including: the current state of biodiversity, valuing lifeâ€™s variations, human interconnections with and dependence on biological diversity, the origin and extinction of species, mass extinction, critical habitats at risk, and policies and approaches to conserve biodiversity.

Course Goals

General Outcomes: Upon successful completion of this course, all students are expected to have demonstrated certain meta-competencies that cross all competencies offered in this course:

- A basic working definition and knowledge of the science of Biodiversity.
- An understanding of humanityâ€™s dependence and impact on Biodiversity.
- An understanding of the connections between physical and biological factors governing Biodiversity.
- An understanding of the major trends and patterns of Biodiversity through earth history.
- An understanding of scientific and governmental conservation practices to conserve and protect Biodiversity.
- An ability to analyze information generated from scientific investigations.
- An ability to apply scientific reasoning in the conduct of research.

Specific Learning Outcomes: Upon successful completion of the selected competence, you will be able to demonstrate the following:

S-2-A: You will be able to describe, and differentiate the character of a living or fossil group of your choice (e.g., bats or oaks or corals or dinosaurs etc.). When this has been accomplished, you will then assess and evaluate the forms, function, and variation within

selected species of this group.

S-2-C: You will demonstrate an understanding of the basic principles of evolution and ecology as they provide a basis for understanding biodiversity. You will be able to apply evolutionary and ecological principles to explain and evaluate development and/or change within biological systems. You will then relate your knowledge of change and evolution in biological systems to current biodiversity conservation issues.

S-3-D: You will select a current debate/issue in the area of biodiversity. You will then research, compare and contrast the scientific side of "what is known" to the social side of "what is being done". You will analyze the ongoing interplay between scientific information and societal action and change. In your analysis you will critically review information from scholarly and popular sources and provide a history and analysis of the topic.

S-4: You will describe and employ various principles of ecology to address problems and/or questions concerning the interconnections of biodiversity to climate, resources, extinction, evolution, and/or conservation. For example, you could address questions concerning the role of the biosphere in the context of the â€œGAIA hypothesisâ€ or examine the interconnections between various organisms in a habitat.

Course Competences

Corresponding to your registration choices, you will develop one or two of the following competencies:

Competence	Competence Statement
S-2-A	Can describe, differentiate, and explain form, function, and variation within biological systems.
S-2-C	Can describe, categorize and explain development or change within physical or biological systems.
S-3-D	Can use scientific knowledge to understand varying perspectives on a policy issue.
S-4	Can describe and explain connections among diverse aspects of nature.

Relationship of Virtual Biodiversity to the course competencies:

The science of Biodiversity encompasses the study of various scales of the biosphere, from the minute characteristics of genetic variation to the make up of entire ecosystems. Biodiversity science also inquires as to the evolution of earthâ€™s biosphere over time, from the fossil record to current human impacts on the biosphere. Consequently, this course provides a thorough foundation for accomplishing the competencies offered and these relationships are summarized below.

S-2-A: In order to understand the enormous variety and complex interactions of life on earth, biologists collect, describe, and then differentiate living entities into groups. When this has been accomplished, the form, functions, and variation within the biological world can be investigated. This course will examine the various means by which scientists determine past and present biodiversity on earth and the trends and patterns revealed.

S-2-C: Examining how life originates, diversifies, and goes extinct are the components of understanding the evolution of the earthâ€™s biosphere. Recognizing the role of adaptation to the evolutionary process and the corresponding interdependence of organisms to one another provides a basis for analyzing complex ecosystems and their variations. Understanding the evolutionary processes and patterns of earthâ€™s biodiversity through time will directly support your ability to describe, categorize and explain development or change within biological systems.

S-3-D: Like many other environmental issues, the societal consequences raised by the study of biodiversity can be the source of controversy and heated debate (e.g., endangered species, habitat destruction, introduced species and so on). In Virtual Biodiversity, you will examine the ongoing interplay between scientific information and societal response as it relates to conserving biodiversity.

S-4: The stability of life on planet earth, including human survival, depends on a great variety of interrelated factors such as the large scale feedback-response systems between the biosphere, the atmosphere and the hydrosphere (e.g., bio-geochemical processes) as well as the day-to-day small scale interchanges between two organisms (e.g., predator-prey). This course will analyze the important ecological interconnections of the biosphere at a variety of levels (species, habitats, communities, biomes), that in combination are responsible for the composite biodiversity of earth.

Course Structure

The estimated time to complete each of the five (5) modules of the course is two weeks and the assignment submission deadlines are based on that pace. Individual units are paced at one week duration each.

To view the course schedule, click on the Schedule link on the left-hand navigation bar. This page contains the most recently updated listing of the topics and assignments due for each week of the course.

Learning Experience

This course makes use of the robust information resources available online on biodiversity topics. Students will be introduced to major biodiversity principles and issues through readings, links to internet resources, structured online discussions, online laboratories and fieldtrips, a self-guided fieldtrip to an institution investigating biodiversity or to a local biodiversity reserve, and an original research paper(s) on a current topic in biodiversity.

Learning Strategies and Content

The Virtual Biodiversity course is subdivided into five (5) primary modules that are themselves divided into topical units (see Table below). For each of the modules, students will be introduced to new concepts and examples through readings and internet links. Students will be responsible for regular participation in class discussions originating from the readings and course materials. Discussion topics will be indicated in the module assignment sections. Most module units have a laboratory exercise or virtual fieldtrip that applies or supplements the principles of biodiversity learned that week. Students will also write a research paper on a biodiversity topic of their choice, consistent with the competencies they are fulfilling. Students taking 1 competence will do one research paper and those taking 2 competencies will do 2 research papers or with the instructorâ

€™s consent and guidance, will undertake a more comprehensive research paper that addresses both competencies. Full details about the research paper are provided in a separate section of this guide.

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Assessment

Assessment of student learning will be based on participation, virtual lab and fieldtrip reports, a self-directed fieldtrip report, a detailed research paper(s) on a current issue in biodiversity, and a research paper summary posting to disseminate your learning to classmates. The research paper will follow a scientific journal format.

Virtual Biodiversity is a graded course. Your final grade will be based on your progress towards completing the activities and deliverables listed and weighted below. The learning outcomes for the course indicated above will be used as a baseline to assess how well you have achieved the competencies you are taking.

Evaluation Weighting for each Competence pursued:				
Category	**Percentage of Grade**			**# of Deliverables**
Participation in discussions	15%			N/A
Virtual Laboratory Reports	25% (5 at 5% each)			5
Virtual Field Trip Reports	10% (4 at 2.5% each)			4
Self-directed Field Trip Report	10%			1
Original research paper	35% Total			4*
	Distribution	Topic and Research Question	1%	
		Scholarly References	2%	
		Outline	2%	
		Final Draft	30%	
Research Paper Summary Posting	5%			1

Note: You are requested to turn in a topic-research question; references, an outline and a final draft of the research paper at different stages of the course and that each of these developmental steps are weighted in your grade.

Course Grading Criteria

Unless otherwise noted by your instructor, the grading for this course will follow these standards and rubrics:

Anticipated Grading Scale

Grading Scale	Percentage	Verbal Descriptor
A	100-91%	Excellent
A-	90-88%	Very Good
B+ -> B-	88-80%	Good
C+ -> C-	79-70%	Average
D+ -> D-	69-60%	Weak (acceptable)
F	< 60%	Unacceptable

Discussion Rubric (After Pelz, 2004)

Level	Interpretation	
4	Excellent	The comment is 1) accurate, 2) original, 3) relevant, 4) teaches us something, and 5) is well written. Four point comments add substantial teaching presence to a course and stimulate additional thought about the under discussion
3	Above Average	The comment lacks at least one of the above qualities, but is above average in quality. A level 3 comment makes a significant contribution to our understanding of the issue being discussed.
2	Average	The comment lacks two or three of the required qualities. Comments which are based on personal opinion or personal experience are often within this category.
1	Minimal	The comment presents little or no new information. However, level 1 comment may provide important social presence and contribute to a collegial atmosphere.
0	Unacceptable	The comment adds no value to the discussion.

Pelz, W. 2004. (My) Three principles of effective online pedagogy. *Journal of Asynchronous Learning Networks* 8(3): 33â€“46.

Virtual Laboratory Report Rubric

Level	Interpretation	
4	Excellent	The lab report has the following qualities: 1. Your observations (main principles and or terms learned while completing this lab; the characteristics or features of objects/specimens/data you studied in this lab (e.g., fossils etc.), and/or any patterns you may have noticed while making your observations.

		2. Your methodology to address the objectives of this lab exercise (how you deduced/reasoned an explanation for what you observed, what evidence you specifically employed to reach your lab exercise conclusion. 3. Your lab conclusions. Depending on the kind of lab, this may include: 1) providing accurate answers for questions asked, or 2) providing the best possible explanation for data provided. 4. Your lab is accurate to the theories, principles 5. Information is accurately communicated and report is well written.
3	Above Average	The report lacks at least one of the above qualities, but is above average in quality. A level 3 report demonstrates a strong understanding of the issue being discussed.
2	Average	The report lacks two or three of the required qualities. . A level 2 report demonstrates a reasonable understanding of the issue being discussed.
1	Minimal	The report presents little evidence of the above qualities. A level 1 report demonstrates a nominal understanding of the issue being discussed.
0	Unacceptable	The report does not demonstrate understanding of the lab topics.

Virtual Fieldtrip and Self-Directed Fieldtrip Report Rubric

Level	**Interpretation**	
4	Excellent	The fieldtrip report summarizes, addresses and/or has the following qualities: 1. Your observations (what you observed and/or read about during your fieldtrip). 2. Specific examples of what you observed (e.g., species, habitats etc.) 3. How this fieldtrip helped you to gain a better understanding of the module topic. 4. The theories, principles and information reviewed. 5. and information is accurately communicated and report is well written.
3	Above Average	The report lacks at least one of the above qualities, but is above average in quality. A level 3 report demonstrates a strong understanding of the issue being

		discussed.
2	Average	The report lacks two or three of the required qualities. A level 2 report demonstrates a reasonable understanding of the issue being discussed.
1	Minimal	The report presents little evidence of the above qualities. A level 1 report demonstrates a nominal understanding of the issue being discussed.
0	Unacceptable	The report does not demonstrate understanding of the fieldtrip topics.

Research Paper Rubric

Level	Interpretation	
4	Excellent	Research question is original and relevant Paper adheres to the required scientific format Resources are scholarly and relevant Scholarly information is integrated and synthesized Citations were of proper format and used consistently Information is evaluated reasonably and critically Corresponding conclusions are consistent with preceding information and arguments Report is well written (grammar, flow and spelling)
3	Above Average	The paper lacks at least one of the above qualities, but is above average in quality. A level 3 report demonstrates a strong understanding of the issue being discussed.
2	Average	The paper lacks two or three of the required qualities. . A level 2 report demonstrates a reasonable understanding of the issue being discussed.
1	Minimal	The paper presents little evidence of the above qualities. A level 1 report demonstrates a nominal understanding of the issue being discussed.
0	Unacceptable	The paper does not demonstrate understanding of the topic.

Research Paper Summary Posting Rubric

Level	Interpretation	
4	Excellent	Research question is clearly described Why the topic is important is explained Areas of uncertainty or controversy are discussed Conclusions are presented Visuals are used as appropriate
3	Above Average	The summary lacks at least one of the above qualities, but is above average in quality. A level 3 report

		demonstrates a strong understanding of the issue being discussed.
2	Average	The summary lacks two or three of the required qualities. . A level 2 report demonstrates a reasonable understanding of the issue being discussed.
1	Minimal	The summary presents little evidence of the above qualities. A level 1 report demonstrates a nominal understanding of the issue being discussed.
0	Unacceptable	The paper does not demonstrate understanding of the topic.

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Policies

Academic Integrity

DePaul University is a learning community that fosters the pursuit of knowledge and the transmission of ideas within a context that emphasizes a sense of responsibility for oneself, for others and for society at large. Violations of academic integrity, in any of their forms, are, therefore, detrimental to the values of DePaul, to the studentsâ€™ own development as responsible members of society, and to the pursuit of knowledge and the transmission of ideas. Violations include but are not limited to the following categories: cheating; plagiarism; fabrication; falsification or sabotage of research data; destruction or misuse of the universityâ€™s academic resources; alteration or falsification of academic records; and academic misconduct. Conduct that is punishable under the Academic Integrity Policy could result in additional disciplinary actions by other university officials and possible civil or criminal prosecution. Please refer to your Student Handbook or visit http://studentaffairs.depaul.edu/homehandbook.html for further details.

Plagiarism: Plagiarism is a major form of academic dishonesty involving the presentation of the work of another as one's own. Plagiarism includes but is not limited to the following:

- The direct copying of any source, such as written and verbal material, computer files, audio disks, video programs or musical scores, whether published or unpublished, in whole or part, without proper acknowledgement that it is someone else's.
- Copying of any source in whole or part with only minor changes in wording or syntax, even with acknowledgement.
- Submitting as one's own work a report, examination paper, computer file, lab report or other assignment that has been prepared by someone else. This includes research papers purchased from any other person or agency.
- The paraphrasing of another's work or ideas without proper acknowledgement.

Plagiarism, like other forms of academic dishonesty, is always a serious matter. If a instructor finds that a student has plagiarized, the appropriate penalty is at the instructor's discretion.

Disability Accommodations

Reasonable accommodations will be provided for students with disabilities on an individualized and flexible basis. The Office of Students with Disabilities (OSD) determines appropriate accommodations through consultation with the student. For certain learning disabilities and/or attention deficit disorders, the Productive Learning Strategies Program (PLuS) determines the appropriate accommodations. See the instructor for more information or call OSD at 773-325-7290 (phone) or 773-325-7296 (TTY); or call PLuS at 773-325-1677.

Incomplete Grades

The intent of the Incomplete grade is to allow students extra time to complete their final assignments. This need arises because, in the closing weeks of the course, they have an event of significant magnitude that adversely affects their ability to complete the course, e.g. serious illness, death in the family, overseas deployment, or natural disaster.

You must request an incomplete grade in writing two weeks before the end of the quarter. Incomplete grades will be considered only after you have satisfactorily completed at least 75 percent of the coursework, and you have such an unexpected, uncontrollable event that prevents you from completing your course. Do not assume that you will qualify for an incomplete. Students who are failing the course at the point where they request an incomplete will not receive one, nor will they be granted after the end of the quarter. Incomplete grades are given at the discretion of the instructor.

If you do receive permission from the instructor to take an incomplete in the course, you will be required to complete a contract with the instructor, specifying how you will finish the missing work within the next two quarters (excluding summer). Incompletes not finished by the end of the second quarter (excluding summer) will automatically become an F grade on your transcript.

Instructors may not change incomplete grades after the end of the grace period without the permission of a college-based Exceptions Committee.

NOTE: In the case of a student who has applied for graduation and who has been approved for an Incomplete in his or her final term, the incomplete must be resolved within the four week grace period before final degree certification.

Protection of Human Subjects

For more information see: http://research.depaul.edu/.

Demonstrating the acquisition of competences in this course can involve â€œinteractionsâ€â€“interviewing and or observing other peopleâ€“discussing those interviews or observations with other class members and writing them up in one or more final report(s). As such, these activities qualify as â€œresearchâ€ with â€œhuman subjectsâ€ and are subject to University and Federal guidelines. Because it takes place in the context of this course, your research is exempt from approval by the School for New Learningâ€™s Local Review Board only under the following conditions:

1. The information you collect is EXCLUSIVELY for the purpose of classroom discussion and will NOT be used after the term is over. If there is any possibility that you will EVER use it in further research or for publication, you must obtain approval from the Local Review Board before you begin.
2. You assess and ensure that no â€œharmâ€â€“physical, mental, or socialâ€“does or could result from either your interviews and/or observations or your discussion and/or reports.

3. The privacy and confidentiality of those that you interview or observe must be protected. Unless you receive specific permission, in writing, from the person(s) you interview or observe, please change their names, and make sure that their identity cannot be readily ascertained from the information you provide.
    a. If you want to use real names and relationships, they must sign an â€œinformed consentâ€ document. For information on creating an â€œinformed consent documentâ€ see, for example, http://www.research.umn.edu/consent.

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Course Expectations

Time Management and Attendance

SNLâ€™s online courses are not self-paced and require a regular time commitment EACH week throughout the quarter.

You are required to log in to your course at least four times a week so that you can participate in the ongoing course discussions.

Online courses are no less time consuming than "face to face" courses. You will have to dedicate some time every day or at least every second day to your studies. A typical four credit hour â€œface to faceâ€ course at SNL involves three hours of classroom meeting per week, plus at least three to six hours of study and homework per week.

This course will require at least the same time commitment, but your learning activities will be spread out through the week. If you have any problems with your technology, or if you need to improve your reading or writing skills, it may take even longer.

The instructor should be notified if your life events do not allow you to participate in the course and the online discussions for more than one week. This is particularly important when there are group discussions or you are working as part of a team.

If you find yourself getting behind, please contact the instructor immediately.

Your Instructorâ€™s Role

Your instructorâ€™s role in this course is that of a discussion facilitator and learning advisor. It is not their responsibility to make sure you log in regularly and submit your assignments. As instructor, s/he will read all postings to the general discussion forums on a daily basis but may not choose to respond to each posting. You will receive feedback to assignments.

The instructor may choose to designate â€œoffice hoursâ€ when s/he will be online and available and will immediately respond to questions. Depending on the instructor, this response may be by e-mail, instant messenger or telephone. Otherwise, you will generally receive a response to emailed or posted queries within 48 hours.

Fulltime DePaul Faculty are highly committed to excellence in instruction, however beyond their teaching role for this course they have many other obligations they must also attend to such as conducting research and publishing, going to professional conferences, teaching other courses, working on university and other college committees, assisting their advisees (often > 100) through steps of the degree program, and having a personal/family life outside of the academic community. Likewise, a DePaul

part-time faculty member typically has a fulltime job that requires significant daily attention.

It follows that online students should expect to receive feedback from the instructor of this course during the regular business week, but not on the weekend. The instructor will strive to respond to student questions within a day after a message is sent during the week, but may occasionally have other obligations that result in a slower response time. Feedback on assignments will be made as soon as is possible, but assessment and processing may take several days from the time of submission, particularly with longer writing assignments. The instructor may also choose to assess work in batch waiting until most assignments have been turned in by students. In summary, this course uses an educational facilitator model, which differs from an on-call customer service model.

Your Role as a Student

As an online student, you will be taking a proactive approach to your learning. As the course instructorâ€™s role is that of a learning guide, your role is that of the leader in your own learning.

You will be managing your own time so that you can complete the readings, activities and assignments for the course, and you will also be expected to take a more active role in peer learning.

Electronic Submissions and Communications

It is mandatory to submit work as attachments using Blackboard's Assignment tool on the course web site. An assignment created using this feature can be identified by the pen and scroll icon and will always have a link to the assignment below the instructions. You can navigate to the assignment by navigating the Assignments link on the course menu and selecting the icon on the designated page. Select each assignment link and follow the instructions to upload and submit your files.

Submissions should be sent in Word format and not as zipped files. Zipped files will not be read. After you submission is graded, you can navigate to the â€œMy Gradesâ€ link on the course menu to see feedback.

For help using this tool, visit the http://www.snlonline.net/Current/blackboardresources.asp

Credits

This course was authored, designed and produced by Dr. Kevin F. Downing in cooperation with the staff of SNL Online at DePaul University.

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