Cover Sheet: Request 15092

BSC 4XXX – Climate Change and Human Systems

Info

Process	Course|New|Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Stephen Mulkey smulkey@ufl.edu
Created	6/24/2020 12:22:59 PM
Updated	3/17/2021 1:17:17 PM
Description of request	This is a request for a new course entitled Climate Change and Human Systems to be offered at the 4000 level. The course will use principles derived from basic medical science, ecology, and relevant social science to describe the major factors and their combined effects on human health and well being. Natural science and the scientific method will provide the basis for understanding sustainability science as a framework for mitigation and adaptation of the disruption of the Earth System and impacts on living systems. The course will emphasize ecological processes as they are affected by human caused climate change.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CLAS - Biology 16900300	Marta Wayne		6/25/2020
Yoho - UCC Consult Form.pdf					6/24/2020
College	Recycled	CLAS - College of Liberal Arts and Sciences	Joseph Spillane	The College Curriculum Committee recycles this request, with the following changes needed: 1) Need 15 weeks in application. 2) Telegraph course description. 3) Math error in grading. 2 in-class exams 60 pts each. Minor error that will change percentages. 4) Remove syllabus. 5) Include grading scale (A, B, C, D, E). 6) Suggestion: Clarify/simplify grading scheme 7) Suggestion: Apply concepts? [Course Objectives]	10/16/2020
No document changes					
Department	Approved	CLAS - Biology 16900300	Marta Wayne		1/22/2021
No document changes					
College	Approved	CLAS - College of Liberal Arts and Sciences	Joseph Spillane		1/22/2021
No document changes					
University Curriculum Committee	Recycled	PV - University Curriculum Committee (UCC)	Casey Griffith	Please upload consults from PHHP	2/17/2021
No document changes					
College	Approved	CLAS - College of Liberal Arts and Sciences	Joseph Spillane		3/17/2021

Step	Status	Group	User	Comment	Updated
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			3/17/2021
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|New for request 15092

Info

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Submitter: Stephen Mulkey smulkey@ufl.edu
Created: 3/13/2021 6:31:52 PM
Form version: 8

Responses

Recommended Prefix
Enter the three letter code indicating placement of course within the discipline (e.g., POS, ATR, ENC). Note that for new course proposals, the State Common Numbering System (SCNS) may assign a different prefix.

Response:
BSC

Course Level
Select the one digit code preceding the course number that indicates the course level at which the course is taught (e.g., 1=freshman, 2=sophomore, etc.).

Response:
4

Course Number
Enter the three digit code indicating the specific content of the course based on the SCNS taxonomy and course equivalency profiles. For new course requests, this may be XXX until SCNS assigns an appropriate number.

Response:
xxx

Category of Instruction
Indicate whether the course is introductory, intermediate or advanced. Introductory courses are those that require no prerequisites and are general in nature. Intermediate courses require some prior preparation in a related area. Advanced courses require specific competencies or knowledge relevant to the topic prior to enrollment.

Response:
Advanced

- *1000 level = Introductory undergraduate*
- *2000 level = Introductory undergraduate*
- *3000 level = Intermediate undergraduate*
- *4000 level = Advanced undergraduate*
- *5000 level = Introductory graduate*
- *6000 level = Intermediate graduate*
- *7000 level = Advanced graduate*

• 4000/5000= Joint undergraduate/graduate
• 4000/6000= Joint undergraduate/graduate

**Joint undergraduate/graduate courses must be approved by the UCC and the Graduate Council)*

Lab Code
Enter the lab code to indicate whether the course is lecture only (None), lab only (L), or a combined lecture and lab (C).

Response:
None

Course Title
*Enter the title of the course as it should appear in the Academic Catalog. There is a 100 character limit for course titles. *

Response:
Climate Change and Human Systems

Transcript Title
Enter the title that will appear in the transcript and the schedule of courses. Note that this must be limited to 30 characters (including spaces and punctuation).

Response:
Climate Change Human Systems

Degree Type
Select the type of degree program for which this course is intended.

Response:
Baccalaureate

Delivery Method(s)
Indicate all platforms through which the course is currently planned to be delivered.

Response:
On-Campus

Co-Listing
Will this course be jointly taught to undergraduate, graduate, and/or professional students?

Response:
No

Effective Term

Select the requested term that the course will first be offered. Selecting "Earliest" will allow the course to be active in the earliest term after SCNS approval. If a specific term and year are selected, this should reflect the department's best projection. Courses cannot be implemented retroactively, and therefore the actual effective term cannot be prior to SCNS approval, which must be obtained prior to the first day of classes for the effective term. SCNS approval typically requires 2 to 6 weeks after approval of the course at UF.

Response:
Spring

Effective Year
Select the requested year that the course will first be offered. See preceding item for further information.

Response:
2022

Rotating Topic?
Select "Yes" if the course can have rotating (varying) topics. These course titles can vary by topic in the Schedule of Courses.

Response:
No

Repeatable Credit?
Select "Yes" if the course may be repeated for credit. If the course will also have rotating topics, be sure to indicate this in the question above.

Response:
No

Amount of Credit
Select the number of credits awarded to the student upon successful completion, or select "Variable" if the course will be offered with variable credit and then indicate the minimum and maximum credits per section. Note that credit hours are regulated by Rule 6A-10.033, FAC. If you select "Variable" for the amount of credit, additional fields will appear in which to indicate the minimum and maximum number of total credits.

Response:
3

S/U Only?
Select "Yes" if all students should be graded as S/U in the course. Note that each course must be entered into the UF curriculum inventory as either letter-graded or S/U. A course may not have both options. However, letter-graded courses allow students to take the course S/U with instructor permission.

Response:
No

Contact Type
Select the best option to describe course contact type. This selection determines whether base hours or

headcount hours will be used to determine the total contact hours per credit hour. Note that the headcount hour options are for courses that involve contact between the student and the professor on an individual basis.

Response:
Regularly Scheduled

• Regularly Scheduled [base hr]
• Thesis/Dissertation Supervision [1.0 headcount hr]
• Directed Individual Studies [0.5 headcount hr]
• Supervision of Student Interns [0.8 headcount hr]
• Supervision of Teaching/Research [0.5 headcount hr]
• Supervision of Cooperative Education [0.8 headcount hr]

Contact the Office of Institutional Planning and Research (352-392-0456) with questions regarding contact type.

Weekly Contact Hours
Indicate the number of hours instructors will have contact with students each week on average throughout the duration of the course.

Response:
3

Course Description
Provide a brief narrative description of the course content. This description will be published in the Academic Catalog and is limited to 500 characters or less. See course description guidelines.

Response:
The course will use principles derived from basic medical science, ecology, and relevant social sciences to describe the major factors of climate change and their effects on human systems relevant to economy, wellness, energy systems, and food security

Natural science and the scientific method will provide the basis for understanding sustainability science as a framework for mitigation and adaptation of the disruption of the Earth System and impacts on the biosphere and human systems

Prerequisites
Indicate all requirements that must be satisfied prior to enrollment in the course. Prerequisites will be automatically checked for each student attempting to register for the course. The prerequisite will be published in the Academic Catalog and must be formulated so that it can be enforced in the registration system. Please note that upper division courses (i.e., intermediate or advanced level of instruction) must have proper prerequisites to target the appropriate audience for the course.
Courses level 3000 and above must have a prerequisite.
Please verify that any prerequisite courses listed are active courses.

Response:
BSC 2011(C) & BSC 2011L(C)

Completing Prerequisites on UCC forms:

• Use “&” and “or” to conjoin multiple requirements; do not used commas, semicolons, etc.
• Use parentheses to specify groupings in multiple requirements.
• Specifying a course prerequisite (without specifying a grade) assumes the required passing grade is D-. In order to specify a different grade, include the grade in parentheses immediately after the course number. For example, "MAC 2311(B)" indicates that students are required to obtain a grade of B in Calculus I. MAC2311 by itself would only require a grade of D-.

• Specify all majors or minors included (if all majors in a college are acceptable the college code is sufficient).
• "Permission of department" is always an option so it should not be included in any prerequisite or co-requisite.
• If the course prerequisite should list a specific major and/or minor, please provide the plan code for that major/minor (e.g., undergraduate Chemistry major = CHY_BS, undergraduate Disabilities in Society minor = DIS_UMN)

Example: A grade of C in HSC 3502, passing grades in HSC 3057 or HSC 4558, and undergraduate PBH student should be written as follows: HSC 3502(C) & (HSC 3057 or HSC 4558) & UGPBH
* *

Co-requisites
Indicate all requirements that must be taken concurrently with the course. Co-requisites are not checked by the registration system. If there are none please enter N/A.

Response:
None

Rationale and Placement in Curriculum
Explain the rationale for offering the course and its place in the curriculum.

Response:
Climate change is affecting all human systems and this is having increasing impacts on systems that support civilization. The most important aspect of this process is the impact of climate change on the biosphere and the ecosystems that form the biosphere. The linkage between human well being and climate impacts on ecosystem form and function has not been reviewed at the upper division undergraduate level in other courses in the life sciences curriculum in general, and specifically, in the biology curriculum. Entry level discussion of this important topic in freshman and sophomore courses is inadequate for the fuller understanding necessary for students to face the challenges unfolding during this century. Although public health aspects of climate change will be covered as part of this course, the course will employ an ecological perspective to consider risk management, geoengineering, food security, water security, economics, the social costs of carbon, human demography and migration, and the systems necessary for an effective response to our climate emergency.

Course Objectives
Describe the core knowledge and skills that student should derive from the course. The objectives should be both observable and measurable.

Response:
By the end of this course, students will be able to:
1. Apply knowledge of how climate change and associated ecological disruptions affect living organisms and human mortality and morbidity.
2. Describe direct impacts of climate change related to air quality, vector borne diseases, water and food borne diseases, and mental health and violence.
3. Describe compound impacts of climate change related to extreme temperatures, extreme weather events, nutrition and food security, and land use amplification of disease.
4. Use peer-reviewed literature as a foundation for communicating about climate change and human well being.
5. Analyze the emergency nature of climate change, the utility of proposed mitigation techniques and implications for community management of water, food supply, energy systems, public health, and risk management
6. Apply concepts of course to community, state, and federal plans for mitigation and adaptation

Course Textbook(s) and/or Other Assigned Reading
*Enter the title, author(s) and publication date of textbooks and/or readings that will be assigned. Please provide specific examples to evaluate the course and identify required textbooks. *

Response:

Required Textbook (will provide background for lectures drawn primarily from the peer-reviewed literature):
Selected readings from Climate Change and Population Health. Sarfaty. 2020. ISBN 1284170209

Examples of assigned readings from the peer reviewed literature:

Chen & Mueller. 2019. Climate-induced cross-border migration and change in demographic structure. https://doi.org/10.1007/s11111-019-00328-3
Zhu & Troy. 2018. Agriculturally relevant climate extremes and their trends in the world's major growing regions. Earth's Future, 6, 656–672. https://doi.org/10.1002/2017EF000687
Jacobson. 2019. The health and climate impacts of carbon capture and direct air capture. Energy & Environmental Science. DOI: 10.1039/c9ee02709b
Baldwin et al. 2019. Temporally compound heat wave events and global warming: An emerging hazard. Earth's Future. https://doi.org/10.1029/2018EF000989
Johnson et al. 2020. A cost-benefit analysis of floodplain land acquisition for UF flood damage reduction. Nature Sustainability. https://doi.org/10.1029/2018EF000989

Weekly Schedule of Topics
Provide a projected weekly schedule of topics. This should have sufficient detail to evaluate how the course would meet current curricular needs and the extent to which it overlaps with existing courses at UF.

Response:
1. Anthropogenic climate change: causes and processes
2. Anthropogenic climate change: impacts on living systems
3. Carbon cycle and the challenge of mitigating emissions
4. Overview of climate change and public health
5. Climate change and heat
6. Climate change and air quality
7. Climate change and vector-borne diseases
8. Climate change and water- and food-borne diseases
9. Climate change and perception of risk and mental health
10. Health risks of geoengineering
11. Agriculture; food and water security; nutrition security
12. Energy systems and the social costs of carbon
13. Extreme events; Risk management; Disaster Risk Reduction
14. Climate change economics and ethics; Group project presentations
15. Conclusion: Group project presentations; Recommendations for further development of the course

Grading Scheme
List the types of assessments, assignments and other activities that will be used to determine the course grade, and the percentage contribution from each. This list should have sufficient detail to evaluate the course rigor and grade integrity. Include details about the grading rubric and percentage breakdowns for determining grades. If participation and/or attendance are part of the students grade, please provide a rubric or details regarding how those items will be assessed.

Response:
Assessment Points Percent of Grade

Online essay exams (2@100 pts each) 200 20
In class short quizzes (12@20 pts each) 240 20

Online discussions of literature (12@10 pts each) 120 10
Attendance and writeup of 2 outside speakers (2@10 pts each) 20 2
Description of subtopic within Group Theme 10 2
Draft annotated bibliography 20 3
Final annotated bibliography 100 15
Presentation by group on term project 100 10
Peer review of presentations (2@25 pts each) 50 3
Final project report 100 15
Totals 960 100

Grading scale for final grade:
93.00-100% (A)
90.00-92.99% (A-)
87.00-89.99% (B+)
83.00-86.99% (B)
80.00-82.99% (B-)
77.00-79.99% (C+)
73.00-76.99% (C)
70.00-72.99% (C-)
67.00-69.99% (D+)
63.00-66.99% (D)
60.00-62.99% (D-)
0-59.99% (E)

Instructor(s)
Enter the name of the planned instructor or instructors, or "to be determined" if instructors are not yet identified.

Response:
Stephen S. Mulkey PhD

Attendance & Make-up
Please confirm that you have read and understand the University of Florida Attendance policy.
A required statement statement related to class attendance, make-up exams and other work will be included in the syllabus and adhered to in the course. Courses may not have any policies which conflict with the University of Florida policy. The following statement may be used directly in the syllabus.

• Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Response:
Yes

Accomodations
Please confirm that you have read and understand the University of Florida Accommodations policy.
A statement related to accommodations for students with disabilities will be included in the syllabus and adhered to in the course. The following statement may be used directly in the syllabus:

• Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation.

Students with disabilities should follow this procedure as early as possible in the semester.

Response:
Yes

UF Grading Policies for assigning Grade Points

Please confirm that you have read and understand the University of Florida Grading policies.
Information on current UF grading policies for assigning grade points is require to be included in the course syllabus. The following link may be used directly in the syllabus:

• *https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx*

Response:
Yes

Course Evaluation Policy

Course Evaluation Policy
Please confirm that you have read and understand the University of Florida Course Evaluation Policy.
A statement related to course evaluations will be included in the syllabus. The following statement may be used directly in the syllabus:

• *Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/public-results/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.*

* *

Response:
Yes

UF UNIVERSITY of FLORIDA

UCC: External Consultations

External Consultation Results (departments with potential overlap or interest in proposed course, if any)

Department	Name and Title
PHHP/Environ. Global Health	Rachel Yoho, PhD, Clinical Assistant Professor
Phone Number	**E-mail**
352-273-6166	ryoho@ufl.edu

Comments

The BSC4930/ZOO4926 (Climate Change and Human Wellness) course and PHC 4930 course include similar topics on climate change and human health. However, the courses are housed in different disciplines, and as such, are grounded in those disciplines - biology and public health. It is essential that these courses are offered to students in each of these disciplines, from the perspective of their disciplines, for the preparation of future professionals with competencies and basic understanding of climate change principles and applications.

Department	Name and Title
PHHP/Environ. Global Health	Rachel Yoho, PhD, Clinical Assistant Professor
Phone Number	**E-mail**
352-273-6166	ryoho@ufl.edu

Comments

BSC 3307C (Climate Change Biology) and PHC4930 do not overlap significantly other than modules on introduction to climate change (which is to be expected with any course on this topic) and a module on biodiversity and climate change. As such, this does not represent any conflict in the offerings of these two important courses.

Department	Name and Title
Phone Number	**E-mail**

Comments