FLORIDA ATLANTIC UNIVERSITY

NEW COURSE PROPOSAL
Undergraduate Programs

Department Biological Sciences

College Science

(To obtain a course number, contact erudolph@fau.edu)

UUPC Approval _____
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner Posted _____
Catalog _____

Prefix BSC **Number** 4307	*(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)* **Lab Code**	**Type of Course** Lecture	**Course Title** Climate Change Biology: Ecosystems to Human Health

Credits *(Review Provost Memorandum)*: 3

Effective Date *(TERM & YEAR)*: Spring 2021

Grading *(Select One Option)*: Regular (●) Pass/Fail ( ) Sat/UnSat ( )

Course Description *(Syllabus must be attached; Syllabus Checklist recommended; see Guidelines)*

The course focuses on biological aspects of rapid climate change on biomes and human health (e.g., loss of global biodiversity in tropical rainforests limit drug discovery opportunities). Loss of ecosystems is threatening important ecosystem services to people around the world, and has behavioral & physiological impacts on humans, affecting their health and well-being. We also discuss adaptations/solutions to the climate change crisis. The format is lecture, in-class discussions and student-led presentations.

Prerequisites, with minimum grade*	**Corequisites**	**Registration Controls** *(Major, College, Level)*
None		

Default minimum passing grade is D-. Prereqs., Coreqs. & Reg. Controls are enforced for all sections of course

WAC/Gordon Rule Course

( ) Yes (●) No

WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to proposal. See WAC Guidelines.

Intellectual Foundations Program (General Education) Requirement *(Select One Option)*

None

General Education criteria must be indicated in the syllabus and approval attached to the proposal. See GE Guidelines.

Minimum qualifications to teach course

PhD and background in biology and climate science

Faculty Contact/Email/Phone	**List/Attach comments from departments affected by new course**
Koch/mkoch@fau.edu/561-252-3409	See approval from Geosciences Department (Email Attached)

Approved by		**Date**
Department Chair	Sarah L. Nathan	4-22-2020
College Curriculum Chair	[signature]	9/18/20
College Dean	[signature]	9-8-2020
UUPC Chair	[signature]	9/18/20
Undergraduate Studies Dean	Edward Pratt	9-15-20
UFS President		
Provost		

Email this form and syllabus to mjenning@fau.edu seven business days before the UUPC meeting.

Climate Change Biology: Ecosystems to Human Health (3 Credits)
BSC 4307-001() - Spring 2021

Lecturer: Dr. Marguerite Koch (mkoch@fau.edu)
Phone: 561-297-3325
Biological Sciences Department (Sanson Science Building Room 267)
Tuesday and Thursday 9:30am-10:50am Room Location:TBD
Office Hours: Tue/Thursday 8am-9:15am or any time by appointment

Prerequisites: None. However, some introduction to science, including biology, ecology and chemistry, as well as, the ability to make presentations and read and write based on technical information will be helpful. The course is being presented as an upper undergraduate 4000-level electives course. While a basic level of science will be helpful, it is not being taught as a majors-only class, and we encourage other majors to take the course to learn more about the biological aspects of climate change, including ecosystem services to people that are being lost and human health issues.

Course Description: In this course, we focus on the biological aspects of the effects of rapid climate change on major biomes of the world and human health issues. For example, the loss of global biodiversity with climate change in tropical rainforests limit new drug discovery opportunities. Loss of ecosystems is threatening important ecosystem services to people around the world. Climate change has behavioral and physiological impacts on humans that affect their biological health and well-being. We also discuss adaptations/solutions to the climate change crisis. The format is lecture, in-class discussions and student-led presentations.

Course Objectives: The objective is for students to understand the Biology of Climate Change with a focus on how rapidly changing climate conditions are affecting major biomes and biodiversity of the world and human resources and health.

Required Texts and Readings for the Course:

1. **Biodiversity and Climate Change: Transforming the Biosphere** (2019) by Thomas Lovejoy and Lee Hannah (forward by the renowned ecologist EO Wilson)

2. **Global Climate Change and Human Health** (2015) by George Luber and Jay Lemery (editors)

3. **Enviromedics: The Impact of Climate Change on Human Health** (2017) Jay Lemery (MD) and Paul Auerbach (MD)

4. Additional contemporary readings may be provided by the professor.

5. In addition to required texts, all students must have an iclicker2

Outline of the Course:

	Discussion Topic for Lecture	Readings Homework for Discussion
Week 1 (T)	Introduction to course and syllabus	
Week 1 (Th)	Chapter 1 in Biodiversity and CC "Overview: What is Climate Change Biology?"	Chapter 1 in Biodiversity and CC pgs. 1-12
Week 2 (T)	Chapter 1 in Global CC and Human Health "Primer on Climate Science"	Chapter 1 in Global CC and Human Health pgs. 1-27;
Week 2 (Th)	(cont.) Chapter 1 in Global CC and Human Health "Primer on Climate Science"	Part I(2) in Environmedics: The Impact of CC on Human Health pgs. 1-19
Week 3 (T)	(cont.) Chapter 1 in Global CC and Human Health "Primer on Climate Science"	"
Week 3 (Th)	(cont.) Chapter 1 in Global CC and Human Health "Primer on Climate Science"	"
Week 4 (T)	**(Quiz 1)** Chapter 2 in Global CC and Human Health "Extreme Weather Events: The Role of Public Health in Disaster Risk Reduction as a Means for Climate Change Adaptation"	Chapter 2 in Global CC and Human Health pg. 35-77
Week 4 (Th)	(cont.) Chapter 2 in Global CC and Human Health "Extreme Weather Events: The Role of Public Health in Disaster Risk Reduction as a Means for Climate Change Adaptation"	Part I(3-4) in Environmedics: The Impact of CC on Human Health pgs. 19-27
Week 5 (T)	**(Quiz 2)** Chapter 3 in Global CC and Human Health "Extreme and Changing Meteorological Conditions on the Human Health Condition"	Chapter 3 in Global CC and Human Health pg. 77-103
Week 5 (Th)	(cont.) Chapter 3 in Global CC and Human Health "Extreme and Changing Meteorological Conditions on the Human Health Condition"	"

Week 6 (T)	**(Quiz 3)** Chapter 4 in Global CC and Human Health "Changes in Hydrology and its Impacts on Waterborne Disease"	Chapter 4 in Global CC and Human Health pg. 103-137; Part II(7) in Environmedics: The Impact of CC on Human Health pgs. 65-81
Week 6 (Th)	Chapter 5 in Global CC and Human Health "Ozone, Oppressive Air Masses, and Degraded Air Quality"	Chapter 5 in Global CC and Human Health pg. 137-171; Part II(7) in Environmedics: The Impact of CC on Human Health pgs. 55-65
Week 7 (T)	**(Quiz 4)** Chapter 6 in Global CC and Human Health "Effects of Climate Change on Noninfectuous Waterborne Threats: Harmful Algal Blooms"	Chapter 6 in Global CC and Human Health pg. 171-186; Part II(11) in Environmedics: The Impact of CC on Human Health pgs. 105-113
Week 7 (Th)	Chapter 7 in Global CC and Human Health "Climate Change, Carbon Dioxide and Public Health"	Chapter 7 in Global CC and Human Health pg. 195-221
Week 8 (T)	**(Quiz 5)** Chapter 8 in Global CC and Human Health "Climate Change and its Impacts on Vector-borne and Zoonotic Diseases"	Chapter 8 in Global CC and Human Health pg. 221-267; Part I(5) in Environmedics: The Impact of CC on Human Health pgs. 37-47
Week 8 (Th)	Chapter 9 in Global CC and Human Health "Addressing the Challenges of Climate Change to Food Security, Safety and Nutrition"	Chapter 9 in Global CC and Human Health pg. 267-311; Part II(9) in Environmedics: The Impact of CC on Human Health pgs. 81-97
Week 9 (T)	Chapter 16 in Global CC and Human Health "Climate Change Communication"	Chapter 16 in Global CC and Human Health pg. 467-505
Week 9 (Th)	**(Quiz 6)** Climate Change Communication Presentations	Prepare Powerpoint Presentations
Week 10 (T)	Climate Change Communication Presentations	Prepare Powerpoint Presentations
Week 10 (Th)	Climate Change Communication Presentations	Prepare Powerpoint Presentations
Week 11 (T)	Climate Change Communication Presentations	Prepare Powerpoint Presentations

Week 11 (Th)	**(Quiz 7)** Select Chapters and Case Studies in "Biodiversity and Climate Change" Climate Change Effects on Major Biomes and Case Studies (1-5)	Chapters in: Biodiversity and Climate Change 1. The Bering Sea and Climate Change (pgs. 39-42) 2. Climate Change and Coral Reef Megadiversity (pgs. 55-66) 3. Climate Change and Salmon Populations (pgs. 77-80) 4. Rapid Ecosystem Changes and Consequences for Biodiversity (pgs. 80-91) 5. Penguins Limits to Adapt to Climate Change (pgs. 91-97)
Week 12 (T)	Select Chapters and Case Studies in "Biodiversity and Climate Change" Climate Change Effects on Major Biomes and Case Studies (5-10)	Chapters in: Biodiversity and Climate Change 1. The Effects of Sea Level Rise on Habitats and Species (pgs. 125-128) 2. Climate Change and Marine Biodiversity (pgs. 168-183) 3. Anticipating Climate-Driven Movement Routes (pgs. 183-185) 4. Impacts of Ocean Acidification on Marine Biodiversity (pgs. 185-196) 5. Tropical Forests in a Changing Climate (pgs. 196-208)
Week 12 (Th)	Select Chapters and Case Studies in "Biodiversity and Climate Change" Climate Change Effects on Major Biomes and Case Studies (10-15)	Chapters in: Biodiversity and Climate Change 1. Postponing the Amazon Tipping Point (pgs. 208-211) 2. Climate Change Effects on Rocky Mountain Plant Comm (pgs. 234-237) 3. Extinction Risk from Climate Change (pgs. 294-297) 4. Saving Biodiversity in Era Human-Dominated Ecosystems (pgs. 356-367)
Week 13 (T)	**(Quiz 8)** Final Group Presentations - Solutions	Prepare Powerpoint Presentations
Week 13 (Th)	Final Group Presentations - Solutions	Prepare Powerpoint Presentations
Week 14 (T)	Final Group Presentations - Solutions	Prepare Powerpoint Presentations
Week 14 (Th)	Final Group Presentations - Solutions	Prepare Powerpoint Presentations
Week 15 (T)	Final Group Presentations - Solutions	Prepare Powerpoint Presentations
Week 15 (Th)	Final Group Presentations - Solutions	Prepare Powerpoint Presentations

Grades:

30% Quiz (8 total, but drop 2 lowest grades, so 6 graded at 5% each)
15% Communication Project (5% Presentations + 10% Report (1 page))
35% Solution Project (10% Presentations and 25% Report (3 pages)
10% In Class Participation iclicker 2
10% Final Exam

Grading Scale, 100 to 93, A; <93 to 90, A-; <90 to 86, B+; <86 to 83, B; <83 to 80, B-; <80 to 76, C+; <76 to 73, C; <73 to 70, C-; <70 to 66, D+; <66 to 63, D; <63 to 60, D-; <60, F

Note Grading: The papers will be graded by using a letter grade system (A, A-, B+, B, B-, C+, C, C-, D+, D, D-, F). Canvas uses the grading scale above by assigning the highest percentage within the range for the letter grade. For example, if you get a B, your grade will be an 85%.

Makeup Policy

Quizzes: No makeup quizzes will be given under any circumstances. The 2 drop quizzes are meant to be used in cases where you miss a quiz due to unforeseen medical and personal reasons.

Final Exam: No makeup final exam will be given. If you have a medical emergency on the date of the exam, Dr. Koch will give you a 5 page paper writing assignment that you will be able to complete by the end of the semester or take an incomplete.

Presentations: Presentations should be prepared in advance. If you miss your presentation date due to a medical excuse with a doctor's note, one of your group members will present your slides and you will have to write a paper double the length of the report assignment. In this case, your grade will be only for the report. Students will still be responsible for assisting the group in question/answer development.

Participation: Participation points cannot be made up.

Academic Integrity

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Dishonesty is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high-quality education in which no student enjoys an unfair advantage over any other. Dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility.

The FAU Code of Academic Integrity prohibits dishonesty and requires a faculty member, student, or staff member to notify an instructor when there is reason to believe dishonesty has occurred in a course/program requirement. The instructor must pursue any reasonable allegation, taking action where appropriate. Examples of academic dishonesty include, but are not limited to, the following:

(A) Cheating

i. The unauthorized use of notes, books, electronic devices, or other study aids while taking an examination or working on an assignment.

ii. Providing unauthorized assistance to or receiving assistance from another student during an examination or while working on an assignment.

iii. Having someone take an exam or complete an assignment in one's place.

iv. Securing an exam, receiving an unauthorized copy of an exam, or sharing a copy of an exam.

(B) Plagiarism
i. The presentation of words or ideas from any other source or another person as one's own without proper quotation and citation.
ii. Putting someone else's ideas or facts into your own words (paraphrasing) without proper citation.
iii. Turning in someone else's work as one's own, including the buying and selling of term papers or assignments.

(C) Other Forms of Dishonesty
i. Falsifying or inventing information, data, or citations.
ii. Failing to comply with examination regulations or failing to obey the instructions of an examination proctor.
iii. Submitting the same paper or assignment, or part thereof, in more than one class without the written consent of both instructors.
iv. Any other form of academic cheating, plagiarism, or dishonesty.

Click here to read the full contents of Regulation 4.001 Code of Academic Integrity.
https://www.fau.edu/ctl/4.001_Code_of_Academic_Integrity.pdf

Honor Code: Students agree to adhere to the honor code, the text of which is at
http://www.fau.edu/divdept/honcol/students/honorcode.html

Disability Policy Statement: In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/.

Counseling and Psychological Services (CAPS) Center: Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to http://www.fau,edu/counseling/

FAU Attendance Policy Statement: Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performance and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.
Religious Accomodations: Students who wish to be excused from coursework, class activities or examinnations must notify the instructor in advance of their intentions to partipate in religious observation and request an absence.

Don't waste your time and money! Use the below tips to get and stay on track for a timely graduation.

1) Learn how to navigate the "**MY FAU**" web portal. Familiarize yourself with features available through "**FAU Self-Service**" located within the "**Home**" tab as well as the features available in the "**Students**", "**Money Matters!**" and "**Success Network**" tabs.

2) Use the **flight plans** available on the FAU website to build your own academic plan. The flight plans are suggested four-year course schedules leading to completion of the **Biology B.A.** or the **Biology B.S.** (blueprints for graduation within four years!). For Biology majors who wish to apply to a medical or professional program upon graduation, a suggested **Pre-Health** version of the Biology B.S. flight plan is also available.

3) Use the "**Departmental Schedule**" (not the "Searchable Schedule") to see **all** courses available (by department) within a given semester when working to schedule your classes.

4) Use the **Degree Audit Reporting System (DARS)** to keep track of which requirements you still need to fulfill in order to graduate. When running your degree audit, you may audit your progress against the catalog year in which you first entered FAU (provided that you have maintained continuous enrollment) OR the current catalog year. You may also select alternate degree options to see if you are closer to completing one degree than another (e.g. compare the Biology B.S. with the Biology B.A.).

*****Please note the below excess credit hour policy. It is your responsibility to work with your academic advisor to minimize additional costs to you associated with the completion of excess credits.**

Credit Hour Policy: Excess Hours Surcharge

Florida Statute 1009.286 defines "excess hours" as credit hours that exceed the completion requirements for a baccalaureate degree program at state universities. For students enrolling in a state university or a Florida State College System institution for the first time in or after the fall 2009 semester, a tuition rate surcharge will be applied for excess hours. The surcharge is assessed only on the tuition portion of the semester hour cost, not on the fees. The amount of the surcharge and the allowable "excess hours" are determined by the initial term of entry as indicated in the catalog. For the complete Policy see **http://www.fau.edu/academic/registrar/FAUcatalog/academics.php#excess**. **Limitations on Number of Withdrawals**

Undergraduate students may not withdraw from more than **two** courses at the lower-division level (1000- and 2000-level courses) and from more than **three** courses at the upper-division or higher level (3000- and 4000-level courses) within the course of their degree program at FAU. Zero- and one-credit courses and exceptional Circumstance Withdrawals, which carry the "WM" grade, are excluded from these limitations.

From: Zhixiao Xie <xie@fau.edu>
Sent: Thursday, February 20, 2020 11:51 AM
To: William Brooks <wbrooks@fau.edu>
Subject: Re: Revised Syllabus for Climate Change Course

Good Morning Randy,
Geosciences faculty appreciate the effort Marguerite put in to revise the name and content of the new course and we are happy to support the course in its current form. One faculty actually expressed the willingness to serve as a guest lecturer on the social science dimension if invited.

Best Regards,
Zhixiao

Dr. Zhixiao Xie
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