



SAINT LOUIS UNIVERSITY
MADRID

EAS 3250 M01: Global Change
Spring 2018

Class Days and Time: TR, 14:30-15:30h

Classroom: SIH-B

Prerequisite(s): Yes

Credit(s): 3

Instructor: Ivan A. Sanchez

Instructor's Email: ivan.sanchez@slu.edu

Instructor's Campus Phone: 91 554 58 58, ext. 266

Office: PAH-202

Office Hours: Tuesday 13:20-14:20

Course Description:

In this course we will study the interactions between the hydrosphere, atmosphere, biosphere, cryosphere and lithosphere that together make up the Earth System, highlighting the manner in which all systems of the earth control or influence each other on time-scales from days to billions of years. In order to understand the state of the earth at present we will go behind and beyond the greenhouse effect, the ozone hole and "El Niño", as well as the solutions to these problems. The global interactions of the changes in terrestrial and oceanic ecosystems.

Course Goals and Student Learning Outcomes:

Review the latest research that confirms that the state of the Earth has dramatically and abruptly changed many times in the past with tremendous environmental repercussions, and why this has happened. The students will explore past, present, and future changes, what is clearly known and what is speculated, and how we can attempt to accurately predict our future.

At the end of the course should achieve the next learning outcomes:

- A. Students will know the founding principles in their field of study as well as the facts and content appropriate to the field.
- B. Students will be able to use their knowledge to reason about issues in their discipline.
- C. Students will be able to solve quantitative problems in their discipline.

PLOs	Student Learning Outcomes	Assessment Method
A	<ul style="list-style-type: none">A.1. Understand the basic facts and main issues of the current global change and the human predicament.A.2. Know the basic concepts on Global Change and its usefulness to understand the current changes in the Earth System.A.3. Be familiar with the causes and effects of past climatic changes and what we can learn from them about the future, what issues of climatic change confront us as we enter the 21st century, how do we predict the effects of our actions on the world ecosystem.A.4. Demonstrate knowledge and comprehension of the roots of how these global environmental problems have come to be.	<ul style="list-style-type: none">- Mid-term and final exam.- Class participation.- Homework assignments.- Written paper.- Oral presentations.

	<p>A.5. Understand climate change within different perspectives (political, ecological, economic and social) to achieve a better understanding of the main pathways to sustainability including sustainable Energy.</p> <p>A.6. Possess the capacity of understand the various changes in the world oceans.</p> <p>A.7. Apply the basic knowledge on the dynamics of the oceans to an improved understanding of the "El Niño" phenomena.</p> <p>A.8. Understand the phenomena that triggers global extinctions including the current one.</p> <p>A.9. Be able to understand the different factors that brought about the major events in the history of Earth Planet.</p>	
B	<p>B.1. Be acquainted with the recent news related with the issues dealt within the class.</p> <p>B.2. Understand the implications of phenomena such as "El Niño", glacial melting or others within the context of the societal implications.</p> <p>B.3. Possess the thinking skills and ability to skip popular views and understand climate change from a scientific and applied point of view, including the consequences for the future of the planet.</p>	<ul style="list-style-type: none"> - Class participation. - Homework assignments. - Written paper. - Oral presentations.
C	<p>C.1. Work collaboratively to undertake research projects, interpret information, and critically analyze ideas and conclusions related to particular global change issues.</p> <p>C.2. Understand and apply the basic numbers and previsions of the Global Change.</p> <p>C.3. Be able to include new data within the theoretical information that is covered during the class.</p>	<ul style="list-style-type: none"> - Class participation. - Homework assignments. - Written paper. - Exams. - Oral presentations.

Saint Louis University - Madrid Campus is committed to excellent and innovative educational practices. In order to maintain quality academic offerings and to conform to relevant accreditation requirements, the Campus regularly assesses its teaching, services, and programs for evidence of student learning outcomes achievement. For this purpose anonymized representative examples of student work from all courses and programs is kept on file, such as assignments, papers, exams, portfolios, and results from student surveys, focus groups, and reflective exercises. *Thus, copies of student work for this course, including written assignments, in-class exercises, and exams may be kept on file for institutional research, assessment and accreditation purposes.* If students prefer that Saint Louis University - Madrid Campus does not keep their work on file, they need to communicate their decision in writing to the professor.

Required Texts and Materials:

1. Goudie AS The Human Impact on the Natural Environment: Past, Present, and Future. Wiley-Blackwell
2. Middleton, N. 2013. The Global Casino: An Introduction to Environmental Issues. Routledge.
3. Kareiva, PM et al Biotic Interactions and Global Change. Sinauer Associates.
4. Shugart HH & Woodward, FI 2011 Global Change and the Terrestrial Biosphere. Wiley-Blackwell
5. Lovelock, J. The Ages of Gaia. OUP Oxford
6. Volk, T Gaia 's Body. Copernicus, Springer-Verlag
7. Beaugrand, G. Marine Biodiversity, Climatic Variability and Global Change. Routledge
8. MacLeod N. The Great Extinctions: What Causes Them and How They Shape Life.
9. Eldredge, N. Extinction and Evolution: What Fossils Reveal About the History of Life. Firefly Books Ltd
10. Strahler A.N. 2013 Introduction to Physical Geography. John Wiley & Sons.
- E-book provided by the Instructor
11. Cowen, R 2013. History of Life. Fifth Edition. Wiley-Blackwell

Attendance and course policy:

- (1) Students are encouraged to participate in class discussions and to ask questions.
- (2) Announcements may be made during the semester
- (3) It is strictly forbidden to use the mobile phone during class. Anyone using or showing them in the classroom will be asked to give it to the professor that will keep it in the professor's table until the end of the class session. It also involves a decrease in the grade of participation.
- (4) Syllabus, reading and paper topics are subject to change.
- (5) Students are responsible for all lecture material, handouts, homework and assigned reading
- (6) It is mandatory to attend all classes unless a reasonable excuse is given. More than two unjustified absences will decrease the grade on participation.
Reasonable excuses are attendance at excursions or other special events of the SLU, illness or family emergency. In cases of illness or family emergency, a written documentation of the circumstances must be given. A letter from the university counsellor is accepted. In these cases, the student has to remember to ask the professor to sign for the excuse in the attendance roster.
- (7) Make up exams are not given. Students who legitimately miss an exam, due to a doctor's visit or family emergency must provide written documentation of the circumstances. A letter from the university counsellor is accepted. Exams that are missed illegitimately result in a score of F. Grades for these students will be based on the remaining exams. There is not a study guide but a content guide is provided for every exam.
- (8) The order of the topics on the syllabus, readings and homework assignments are subject to change.
The contents of the course are just an orientation and are subject to change according to the student interests and the development of the course.
- (9) No food or drink (except water) in class is allowed.
- (10) All students have to be punctual. Repeated lateness may reduce the grade. Late arrivals to class are considered up to 10 minutes. Students who arrive 15 minutes or more after the beginning of class will be considered as having missed that class.
- (11) Students are expected to remain in the classroom throughout the class meeting, except for reasonable emergencies. In the case of exams, leaving the classroom involves that the exam has been finished.
- (12) Useful and important information for the course will be given in Blackboard.
This information includes: PowerPoint-Presentations and notes shown in class, readings, supplementary study material, further information about the elaboration of the research work or presentations, grades of exams and paper.
To communicate with the students, the professor will use Blackboard, e-mail. Consequently, it is necessary, that the students check their Blackboard-email.
- (13) Students with accredited accommodations for exams need to communicate them to the professor at least 14 days before the mid-term or final dates.
- (14) E-mails are answered from Monday 12:00h to Friday a 12:00h
- (15) During exams it is not allowed to go out of the classroom, so it is recommended to go to the toilet right before exams and to bring water and an extra pen.
- (16) Exams include all the material covered in the classroom.

Course Requirements and Grading Rationale/System:

The grade will be obtained from the following areas:

Mid-term I: 30%

Final: 30%

Paper and presentation: 20%

Attendance, homework and class participation: 20%

Grading scale

93% < A < 100%,

90% < A- < 93%

87% < B+ < 90%

83% < B < 87%

80% < B- < 83%

77% < C+ < 80%

73% < C < 77%

70% < C- < 73%

60% < D < 70%

F < 60%

Paper and Presentation project

Every student or group has to prepare a project about a specific topic. Papers will be presented orally at the end of the course. Detailed information about the paper and the presentation will be given in a separate document (about 1.000 to 1.500 words), together with every paper (which will be submitted by both printed out and emailed) a PowerPoint-Presentation has to be submitted. This PowerPoint-Presentation will be the basis of the oral presentation

at the end of the course. The deadline for the submission of the paper will be given (after the deadline the paper is only accepted if a reasonable excuse is given; reasonable excuses, due to an illness or family emergency, must provide written documentation of the circumstances; a letter from the university counselor is accepted). The recommended presentation is APA, without page numbers in inner citations, 1.5 spaced, Times New Roman 11. However, web citations should include date of access and the rest of relevant information. The paper should also include sections an index and page numbers.

E-mail: Campus and course announcements will often be handled by e-mail. Students should check their "@slu.edu" e-mail regularly.

University Statement on Academic Integrity: Academic integrity is honest, truthful and responsible conduct in all academic endeavors. The mission of Saint Louis University is "the pursuit of truth for the greater glory of God and for the service of humanity." Accordingly, all acts of falsehood demean and compromise the corporate endeavors of teaching, research, health care and community service via which SLU embodies its mission. The University strives to prepare students for lives of personal and professional integrity, and therefore regards all breaches of academic integrity as matters of serious concern.

The governing University-level Academic Integrity Policy can be accessed on the Provost's Office [website](#). Additionally, SLU-Madrid has posted its academic integrity policy online: <http://www.slu.edu/madrid/academics>. As a member of the University community, you are expected to know and abide by these policies, which detail definitions of violations, processes for reporting violations, sanctions and appeals.

The professor will review these matters during the first weeks of the term. Please direct questions about any facet of academic integrity to your faculty, the chair of the department of your academic program, or the Academic Dean of the Madrid Campus.

University Title IX Statement: Saint Louis University and its faculty are committed to supporting our students and seeking an environment that is free of bias, discrimination, and harassment. If you have encountered any form of sexual misconduct (e.g. sexual assault, sexual harassment, stalking, domestic or dating violence), we encourage you to report this to the University. If you speak with a faculty member about an incident of misconduct, that faculty member must notify SLU's Title IX deputy coordinator, Marta Maruri, whose office is located on the ground floor of Padre Rubio Hall, Avenida del Valle, 28 (mmaruri@slu.edu; 915-54-5858, ext. 213) and share the basic fact of your experience with her. The Title IX deputy coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus.

If you wish to speak with a confidential source, you may contact the counselors at the SLU-Madrid's Counseling Services on the third floor of San Ignacio Hall (counselingcenter-madrid@slu.edu; 915-54-5858, ext. 230) or Sinews Multiplettherapy Institute, the off-campus provider of counseling services for SLU-Madrid (www.sinews.es; 917-00-1979). To view SLU-Madrid's sexual misconduct policy and for resources, please visit the following web address: <http://www.slu.edu/Documents/Madrid/campus-life/SLUMadridSexualMisconductPolicy.pdf>.

Students with Special Needs: In recognition that people learn in a variety of ways and that learning is influenced by multiple factors (e.g., prior experience, study skills, learning disability), resources to support student success are available on campus. Students who think they might benefit from these resources can find out more about:

- Course-level support (e.g., faculty member, departmental resources, etc.) by asking your course instructor.
- University-level support (e.g., tutoring/writing services, Disability Services) by visiting the Academic Dean's Office (San Ignacio Hall) or by going to <https://www.slu.edu/madrid/academics/student-resources>.

Students with a documented disability who wish to request academic accommodations must contact Disability Services to discuss accommodation requests and eligibility requirements. Once successfully registered, the student also must notify the course instructor that they wish to access accommodations in the course. Please contact Disability Services at disabilityservices-madrid@slu.edu or +915 54 58 58, ext. 230 for an appointment. Confidentiality will be observed in all inquiries. Once approved, information about the student's eligibility for

academic accommodations will be shared with course instructors via email from Disability Services. For more information about academic accommodations, see "Student Resources" on the SLU-Madrid webpage.

Note: Students who do not have a documented disability but who think they may have one are encouraged to contact Disability Services.

2018 Course Schedule:

JANUARY	
Wednesday 10	First Day of MWClasses
Thursday 11	First Day of EAS 3250 Classes Course presenttion
Tuesday 16	Global Change, Earth System and the Human predicament
Thursday 18	Global Change, Earth System and the Human predicament
Sunday 21	Last Day to Drop a Class without a Grade W and/or Add a Class; Last Day to Choose Audit (AU) or Pass/No Pass (P/NP) Options
Tuesday 23	Global Changes in the origins of the primordial Earth
Thursday 25	Global Changes in the origins of the primordial Earth
Friday 26	No Classes Application Deadline for Spring Semester Degree Candidates
Tuesday 30	Earth as a System: Tectonics
FEBRUARY	
Thursday 1	Earth as a System: Climate Change and the Breathing of the Biosphere
Tuesday 6	Earth as a System: Climate Change and the Breathing of the Biosphere
Thursday 8	Renewable Energy
Tuesday 13	Renewable Energy
Wednesday 14	Ash Wednesday Registration for Summer 2018 Begins
Thursday 15	Finishing up units and Review Class
Tuesday 20	Mid-term 14:30h
Thursday 22	No Classes (Winter Break)
Friday 23	
Tuesday 27	Professors' Deadline to Submit Midterm Grades -
MARCH	
Thursday 1	"El Niño" phenomenon and the Ozone layer
Tuesday 6	"El Niño" phenomenon and the Ozone layer
Thursday 8	Habitat loss and Desertification
Friday 9	Last Day to Drop a Class and Receive a Grade of W
Tuesday 13	Case Study: Global change in the Sahara Desert
Thursday 15	Last Day to Submit Transfer Application for Fall Semester - Global Change on Glaciers
Tuesday 20	Global change in the Oceans
Thursday 22	Global change in the Oceans
Monday 26	<i>Semana Santa</i> Holiday (Campus Closed)
Tuesday 27	
Wednesday 28	
Thursday 29	<i>Jueves Santo</i> (Campus Closed)
Friday 30	<i>Viernes Santo</i> (Campus Closed)
APRIL	
Tuesday 3	Major events in the history of Earth
Wednesday 4	Registration for Fall 2018 Semester Begins
Thursday 5	Evolution theories and processes
Tuesday 10	Mayor Extinctions events in the history of Earth and bio-invasions
Thursday 12	Global Change and Human Evolution
Tuesday 17	Students presentations

Thursday 19	Students presentations
Tuesday 24	Students presentations
Thursday 26	Global Change and Human Evolution
MAY	
Tuesday 1	<i>Día del Trabajador (Campus Closed)</i>
Wednesday 2	<i>Día de la Comunidad (Campus Closed)</i>
Thursday 3	Spring 2018 Final Day of Classes – Finishing up units and Review Class
Friday 4	Final Exam EAS 3250 May 8th 12:00-14:00h
Monday 7	
Tuesday 8	
Wednesday 9	
Thursday 10	
Friday 11	University Housing Move-out Date
Saturday 12	Commencement
Sunday 13	Professors' deadline to submit spring 2018 final grades

Final Exam Schedules Spring 2018

	4 May (Fr)	7 May (Mn)	8 May (Tu)	9 May (Wd)	10 May (Th)
08:30-11:30	Mn classes that meet at 9:00 & 9:30	Mn classes that meet at 10:00	Mn classes that meet at 11:00 & 11:30	Tu classes that meet at 9:30	Tu classes that meet at 8:00
12:00-15:00	Tu classes that meet at 11:00	Mn classes that meet at 13:00	Tu classes that meet at 14:30	Mn classes that meet at 12:00 & 12:30	Tu classes that meet at 12:30
15:30-18:30	Mn classes that meet at 14:30	Tu classes that meet at 17:00 & 17:30	Mn classes that meet at 16:00	Tu classes that meet at 16:00	Mn classes that meet at 17:30
19:00-22:00	---	---	Mn classes that meet at 18:30 & 19:00	Tu classes that meet at 19:00	---