Course Report
(Bachelor)

Course Title:	**Global Climate Change**
Course Code:	**EVS 1024**
Program:	**Bachelor of Science in Environmental Science**
Department:	**Biology**
College:	**Science**
Institution:	**Imam Mohammad Ibn Saud Islamic University**
Version:	**1**
Last Revision Date:	**-**

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A. General information about the course:

1. Course Identification

1. Credit hours: 2 (2 Lecture + 0 + 0)					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☐ Required		☒ Elective		
3. Level/year at which this course is offered: (Not determined)					
4. Course general Description:					
This course will describe the science of global warming and its forecast for humans' impact on Earth. Climate change is one of the most profound environmental and social issues affecting communities, nations and individuals. This course is an introduction to this global challenge, including its scientific underpinnings, history, potential impacts on natural systems and human societies around the world, and two societal responses: adaptation and greenhouse gas mitigation. Opportunities to develop sustainable resilient communities, as well as Saudi Arabia's climate change policy responses, will be highlighted.					
5. Pre-requirements for this course (if any)**:**					
EVS 1110 EVS 1114					
6. Co-requisites for this course (if any)**:**					
None					
7. Course Main Objective(s):					
The objective of these courses is to provide students of any discipline with the climate change: both biophysical and human dimensions. Climate change is a pervasive and challenging phenomenon that can be viewed through a multitude of lenses. A scientific lens, for instance, reveals altered ecosystems and climatic tipping points while the lens of ethics raises the question of the right to develop and influence the well-being of others while doing so. By carefully laying the scientific foundations, we will explore creative, positive, nuanced visions of the future that are rooted in scientific understanding of earth					

systems but also capture (or at least begin a conversation about) core human values, such as equity, compassion, innovation, and connection. A wider variety of actors are increasingly taking action on climate change, or bearing some responsibility for doing so, allowing us to analyze coordinated, effective responses that go beyond international negotiations. This course is intended for undergraduate students of all backgrounds (arts, social sciences, and sciences) who wish to explore the biophysical and human dimensions of climate change. The course will also help students to hone their abilities to communicate potential solutions to others.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	√	100%
2	E-learning	-	-
3	Hybrid • Traditional classroom • E-learning	-	-
4	Distance learning	-	-

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	0
3.	**Field**	0
4.	**Tutorial**	0
5.	**Others (specify)(** home research assignment and presentations)	0
Total		30

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Method

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	**Discuss comprehensively and understand of key elements of the climate system, and how these elements are being altered by the human emission of greenhouse gases.**	K1	Lecture and take-home research assignment	Quizzes, midterm exam and final exam
1.2	**Explain the impacts of climate change on both human and natural systems.**	K2	Lecture and take-home research assignment	Quizzes, midterm exam and final exam
1.3	**Clarify the difference between climate change adaptation and mitigation, and understand a portfolio of actions that communities can take to respond to climate change.**	K3	Lecture and take-home research assignment	Quizzes, midterm exam and final exam
1.4	**Outline the key issues at play in international climate change negotiations, as well as recent KSA policy proposals.**	K4	Lecture and take-home research assignment	Quizzes, midterm exam and final exam

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.0	**Skills**			
2.1	**Relate between the different practices and be aware of the challenges in detecting unusual global warming signals amidst natural climate variability.**	S1	home research assignment	reports
2.2	**Evaluate the appropriate theory and methods to sustainability**	S2	take-home research assignment	reports
2.3	**Analyze the knowledge, information, and research skills to solve problems related to climate change**	S3	take-home research assignment	reports
2.4	**Perform the relationship between water, climate change, and the adaptation of living organisms, nutrition, cultivation, adaptation strategies, risks, and potential threat**	S4		

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.0	**Values, autonomy, and responsibility**			
3.1	**Demonstrate critical and creative thinking skills.**	V1	Lecture and take-home research assignment	Quizzes, midterm exams, reports, project presentations
3.2	**Participate between the three approaches to achieve sustainability**	V2	Lecture, and take-home research assignment	Quizzes, midterm exam, , project presentations,
3.3	**Adhere to the relevant ethical rules on specific problems using scientific evidence to support their position to an audience of peers.**	V3	Lecture, and take-home research assignment	Quizzes, midterm exam, , project presentations,

C. Course Content

No	List of Topics (lectures)	Contact Hours
1.	Introduction of climate change • Introduction to the debate • Format and approach of class • Learning objectives, syllabus, schedule • The media, climate change communication, and recent trends	4
2.	INTRODUCTION TO THE CLIMATE SYSTEM • What is a system? • System dynamics • Components of the climate system	4
3.	THE EARTH AND ENERGY • Energy basics • Ins and Outs; Forcings • Reflectivity and aerosols • The Greenhouse Effect.	4

4.	THE CARBON CYCLE • Carbon stocks and flows • Forcings • Emissions scenarios.	2
5.	PAST AND FUTURE CLIMATE • Future climate, scenarios and projections	2
6.	Impacts on natural systems • Aquatic system • Terrestrial systems	2
7.	: Impacts on humans • Introduction • Developing countries • Cities	2
8.	ASSESSING VULNERABILITY • Impact and vulnerability analyses • Equity, ethics, responsibility • Urban vulnerability	2
9.	ADAPTATION • What is adaptation? Reactive, proactive • Options and progress • Developing country contex	2
10.	INTRODUCTION TO MITIGATION • Sources of emissions • Demand-side mitigation • Supply-side mitigation	2
11.	POLICY, GOVERNANCE and POLITICS • Governing climate change: actors, interests, challenges • The UNFCCC • Kyoto and Paris	2
12.	SUSTAINABILITY TRANSFORMATIONS: LINKING ADAPTATION AND MITIGATION IN COMMUNITIES • A/M/SD synergies • Accelerating innovation • Envisioning the future	2
Total		**30**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm exam 1	5th week	15%
2.	Midterm exam 2	10th week	15%
3.	Quizzes, Participation, Attendance	During the semester	10%
4.	Discussion Forum: Summary assignments plus the number of posts	During the semester	5%
5.	Assignment 1: Impacts and Adaptation Assignment 2: Mitigation	Around 9th week	15%
6.	Final Exam	15th week	40%
Total			**100%**

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Required textbook: Burch, Sarah and Sara Harris. 2014. Understanding Climate Change: Science, Policy and Practice. Toronto: University of Toronto Press. Adger, W. N., J. Paavola, S. Huq, and M. J. Mace (eds.). 2006. Fairness in Adaptation to Climate Change. Cambridge, MA: MIT Press. Adger, W. N., S. Agrawala, M. M. Q. Mirza, C. Conde, K. L. O'Brien, J. Pulhin, R. Pulwarty, B. Smit, and K. Takahashi. 2007. Assessment of adaptation practices, options, constraints, and capacity. In Climate Change 2007: Impacts, Adaptation and Vulnerability: Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. M. L. Parry, O. F. Canziani, J. P. Palutikof, C. E. Hanson, and P. J. Van Der Linden (eds.). Cambridge: Cambridge University Press.
Supportive References	Adams, P. N., and D. L. Inman. 2009. Climate Change and Potential Hotspots of Coastal Erosion Along the Southern California Coast—Final Report. CEC-500-2009-022-F, Sacramento, California Energy Commission.
Electronic Materials	https://nap.nationalacademies.org/read/12782/chapter/22
Other Learning Materials	Black board

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms
Technology equipment (projector, smart board, software)	Projector and Smart board
Other equipment (depending on the nature of the specialty)	-

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Direct
Effectiveness of Students assessment	Program Leader	Direct
Quality of learning resources	Peer Reviewer	Indirect
The extent to which CLOs have been achieved	Program Leader	Direct
Other	-	-

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**Biology Department Council**
REFERENCE NO.	**2**
DATE	**21/02/1446 H**