Course Specification
(Bachelor)

Course Title:	Atmospheric Environments
Course Code:	EVS 1368
Program:	Bachelor of Science in Environmental Science
Department:	Biology
College:	Science
Institution:	Imam Mohammed 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 (Lecture 2+ 0 Lab)

2. Course type

A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		

3. Level/year at which this course is offered: (Level 6 / 3rd Year)

4. Course general Description:

This course is an introduction to the physical processes occurring in the Earth's atmosphere. Interpretation of weather maps and satellite images, cloud types and formation, atmospheric structure, thermodynamic processes, rain formation, solar and terrestrial radiation, energy balance at the surface, cumulus and cumulonimbus convection, and air pollution.

5. Pre-requirements for this course (if any):

6. Co-requisites for this course (if any):

EVS 1111

7. Course Main Objective(s):

This course aims to prepares the student for understanding the impact of the weather and climate on the environment, which is to say the impacts of air and water on natural and human-altered ecosystems. This course establishes links between atmospheric studies and a variety of environmental disciplines pertaining to land, water, soils, and plants

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)**	
Total		30

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

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Describe atmospheric composition and structure, including the layers of the atmosphere from the surface to 100 km, and be able to describe the basic processes occurring in the atmospheric boundary layer and recognize cloud types and	K1	Three credits hours weekly lectures, lab and field	-Quizzes -Presentations -Assignments -written exams

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	their formation mechanisms			
1.2	Explain the structure, physics and dynamics of thunderstorms, tornadoes and hail formation	K2	Three credits hours weekly lectures, lab and field	Quizzes -Presentations -Assignments -written exams
1.3	Outline the basic physics of atmospheric processes, such as radiation at the surface, water in the atmosphere and its phase changes, and air masses and weather fronts;	K3	Three credits hours weekly lectures, lab and field	Quizzes -Presentations -Assignments -written exams
2.0	Skills			
2.1	Synthesize and interpret meteorological data, including satellite imagery, and summarise professionally within an assignment	**S1**	Three credits hours weekly lectures, lab and field Tutorials	-Presentations -Assignments -written exams
2.2	Use and evaluate numerical and graphical meteorological data, e.g., interpret weather maps in terms of local weather; plot and interpret vertical temperature and moisture soundings; observe, code and plot weather elements in standard format.	**S2**	- Three credits hours weekly lectures, lab and field -Tutorials	-Presentations -Assignments -written exams
2.3	Analyse large weather and climate related datasets using appropriate computing tools and methodologies.	**S3**	- Three credits hours weekly lectures, lab and field -Tutorials	-Presentations -Assignments -written exams
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate the ability to perform the assigned work independently and collaborate with interdisciplinary teams to achieve common goals.	**V1**	Group discussions	-Presentations -Reports
3.2	Share in specialized events and present research data effectively	**V2**	Group discussions	-Presentations -Reports

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	through different modes and for varied audiences.			
3.2	Show accountability and share positively in scientific discussions and decision-making processes.	V3	Group discussions	Presentations -Reports

C. Course Content

No	List of Topics	Contact Hours
1.	Syllabus Overview, introduction to weather maps and satellite imagery	4
2.	Atmospheric structure, meteorological observations, interpreting charts	4
3.	Atmospheric structure, meteorological observations, interpreting charts	4
4.	Air masses and weather fronts	4
5.	Clouds and precipitation	2
6.	Vertical profiles through the atmosphere: physics, stability, thunderstorms	4
7.	Vertical profiles through the atmosphere: physics, stability, thunderstorms	2
8.	Atmospheric radiation, surface energy balance, rainbows	2
9.	Atmospheric radiation, surface energy balance, rainbows	2
10.	Air pollution	2
Total		**30**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm 1	Around 4th - 5th week	20%
2.	Midterm 2	Around 7th - 8th week	20%
3.	Quizzes, Participation, and Attendance	During the semester	20%
6.	Final Exam	16th 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	Atmospheric Science: An Introductory Survey (2nd Ed), J.M. Wallace and P.V. Hobbs Weather: A Concise Introduction Introducing Meteorology: A Guide to Weather, J. Shonk
Supportive References	Undergraduate Course: Meteorology: Atmosphere and Environment- University of Edinburgh BSc Meteorology and Climate- University of Reading
Electronic Materials	
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom and laboratories
Technology equipment (Projector, smart board, software)	Projector, smart board
Other equipment (Depending on the nature of the speciality)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Direct
Effectiveness of students assessment	Faculty	Direct
Quality of learning resources	Faculty	Indirect
The extent to which CLOs have been achieved	Faculty	Direct
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**Head of Biology Department**
REFERENCE NO.	
DATE	