Course Specification
(Bachelor)

Course Title:	Ecology of Palm Tree
Course Code:	EVS 1364
Program:	Bachelor of Science in Environmental Science
Department:	Biology
College:	Science
Institution:	Imam Mohammed Ibn Saud Islamic University
Version:	1
Last Revision Date:	-

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: 3 (2 Lecture + 2 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 involves most of the important information about the Ecology of palm trees and an examination of palm tree etymology, and types of dates It introduces taxonomy, morphology, reproductive biology, anatomical, and physiological characteristics of the palm tree. In addition, It Covers The environmental, cultural, and economic importance of this tree and the Nutritional value and health benefits of fruits. It also covers environmental and geographical information, species diversity and distribution, problems and challenges facing palm trees, ways to protect them and sustainable development.					
5. Pre-requirements for this course (if any):					
EVS 1110	**EVS 1112**	**EVS 1114**			
6. Co-requisites for this course (if any):					
None					
7. Course Main Objective(s):					
The course intends to: **-Provide students' knowledge of the Ecology of palm trees.** **-Explaining how the palm tree is affected by environmental conditions, its interaction with biotic and abiotic factors, and ways of adapting with the environment.** **- Identify The environmental, cultural, and economic importance of the palm tree, Nutritional value and health benefits of fruits.** **- Identify common palm trees varieties grown in Saudi Arabia.**					

-Describe how human activity impacts on the Ecology of palm trees.
-Comprehend the dimensions of the sustainability challenge.

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**	30
3.	**Field**	-
4.	**Tutorial**	-
5.	**Others (specify)**	-
Total		60

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 the Ecology of palm trees.**	K1-K2	-Lectures -Class participation	-Written exams -Class participation -Assessment of assigned work

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.2	**Discuss The environmental, cultural, and economic importance of the palm tree, Nutritional value and health benefits of fruits.**	K2	-Lectures -Class participation	-Written exams -Class participation -Assessment of assigned work
1.3	**Clarify the dimensions of the sustainability challenge.**	K3-K4	-Lectures -Class participation	-Written exams -Class participation -Assessment of assigned work
2.0	**Skills**			
2.1	**Analyze how the palm tree is affected by environmental conditions, its interaction with biotic and abiotic factors, and ways of adapting with the environment.**	S2-S4	-Lectures -Classroom discussions -Cooperative education	-Classroom participation -Presentations - Written exams
2.2	**Evaluate how human activity impacts on the Ecology of palm trees**	S1-S3	-Lectures -Classroom discussions -Cooperative education	Classroom participation -Presentations -Assignments -written exams
3.0	**Values, autonomy, and responsibility**			
3.1	**Participate in work and communicate effectively in groups.**	V1-V2	--Lectures -Classroom discussions -Research	-Classroom participation -Presentations
3.2	**Adhere assigned tasks with responsibility.**	V3-V4	-Lectures -Classroom discussions	-Classroom participation -Presentations

C. Course Content

No	List of Topics (Lectures)	Contact Hours
1.	Introduction, Syllabus. General information of palm tree (definition – history-Taxonomic status)	4
2.	Morphological, the reproductive biology, anatomical, and physiological characteristics of the palm tree	4
3.	The environmental, cultural, and economic importance of the palm tree, Nutritional value and health benefits of fruits.	4
4.	Geographical ecology of the palms: determinants of diversity and distributions across spatial scales	4
5.	Impacts of different environmental: biotic, abiotic and historical factors	4
6.	Determinants of palm species distribution: Climate, Topography, Species interactions, Soil, Dispersal, Hydrology and Vegetation.	2
7.	Adaptations and modifications of palm trees to environmental conditions.	2
8.	Identify common palm trees varieties grown in Saudi Arabia.	2
9.	Problems and challenges facing palm trees	2
10.	How species diversity is maintained Locally and globally, Maintaining sustainable.	2
Total		**30**

No	List of Topics (Lab)	Contact Hours
1.	Introduction: General principles of palm tree: a taxonomic overview of palms.	**4**
2.	Morphological studies of the palm tree	**4**
3.	Anatomical studies of the palm tree	**4**
4.	Techniques and methods for quantifying environmental characteristics of palm tree (Climate, soil…etc.)	**4**
5.	Community structure of palm tree: species richness, evenness and diversity of community (Plant and animal) using different indices.	**2**
6.	Collective analysis and discussion (Scientific papers and documentary videos of studies that have assessed the relationship between climate and palm).	**4**
7.	Collective analysis and discussion (Scientific papers and documentary videos on economic , cultural importance of the palm tree).	**4**
8.	Collective analysis and discussion (Scientific papers and documentary videos on Local palm Species and methods of propagation).	**4**
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	15%
2.	Midterm 2	Around 7th - 8th week	15%
3.	Quizzes, Participation, and Attendance	During the semester	10%
4.	Lab reports	During the semester	5%
5.	Lab Exam	15th week	15%
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	-Geographical ecology of the palms (Arecaceae): determinants of diversity and distributions across spatial scales.2011. Annals of Botany 108: 1391– 1416. By Wolf L. Eiserhardt et. -Conservation Biology for all. 2010. edited by Sodhi, N. S, and P. R. Ehrlich. Oxford University Press. -Field and Laboratory Activities for Environmental Science. 2012. Eldon Enger ،Bradley F. Smith -Jain, Shri Mohan, Al-Khayri, Jameel M., Johnson, Dennis V. Date Palm Biotechnology, 2011, XVIII, 743p. 161 illus.
Supportive References	
Electronic Materials	• Saudi Digital Library • http://www.fao.org/docrep/006/y4360e/y4360e00.htm • www.britannica.com/EBchecked/topic/152224/date-palm • www.redpalmweevil.com/introDatepalm.htm • www.experiencefestival.com/date_palm_-_production • www.un.org/News/Press/docs/2004/sag276.doc.htm • http://www.pubhort.org/datepalm/datepalm1/datepalm1_28.pdf • http://postharvest.ucdavis.edu/files/71533.pdf

	• • http://www.redpalmweevil.com/introdatepalm.htm
Other Learning Materials	Videos, slides and presentations that are available with the instructor.

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)	Environment-related instruments

F. Assessment of Course Quality

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