2023
TP-153

Course Specification
(Bachelor)

Course Title:	**Green Infrastructure Technologies**
Course Code:	**EVS 1350**
Program:	**Bachelor of Science in Environmental Science**
Department:	**Biology**
College:	**Science**
Institution:	**Imam Mohammad Ibn Saud Islamic University**
Version:	**1**
Last Revision Date:	**-**

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: 2 (Lecture 2 + Lab 2)					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (Level 5 / 3rd Year)					
4. Course General Description:					
This course introduces the students to the concepts of green infrastructure and the implementation of renewable technologies. It also provides an overview of how green infrastructure systems work, the benefits they can provide, and how they can be employed effectively. The course outlines a comprehensive overview of the current and growing green infrastructure theory, design, and practice, and the associated challenges and opportunities.					
5. Pre-requirements for this course (if any)**:**					
EVS 1110 EVS 1114					
None					
7. Course Main Objective(s):					
1. Define and describe green infrastructure. 2. Identify the key processes and elements of green infrastructure that address some environmental issues. 3. Identify sites where green infrastructure has been (or is planned to be) employed and some of the best practices of its technologies. 4. Understand the process of green infrastructure design and be able to apply some of them to complete a design to capture and retain stormwater.					

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**	0
4.	**Tutorial**	0
5.	**Others (specify)**	0
Total		60

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	Describe the idea of Green Infrastructure Technologies and its benefits.	K1	Lecture and take-home research assignment	Quizzes, midterm exam and final exam
1.2	Explain various Elements of Green infrastructure systems interdependence.	K2	Lecture and take-home research assignment	Quizzes, midterm exam and final exam
1.3	Outline the types, elements, roles, functions and green	K3	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
	infrastructure technologies and associated design applications.			
2.0	**Skills**			
2.1	Analyze and Investigate green infrastructure technologies that address site, environmental, function and management considerations.	S1	take-home research assignment	activity and exam
2.2	Design a green infrastructure installation that performs multiple functions, including the provision of relevant ecosystem services.	S2	take-home research assignment	activity and exam
2.3	Use computers and internet to analyze the green-infrastructure interdependence.	S3	take-home research assignment	activity and exam
3.0	**Values, autonomy, and responsibility**			
3.1	Show independence in performing the assigned work and cooperate effectively with the members of the research teams.	V1	Group discussions	-Presentations -Reports

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.2	Share in the discussions of scientific issues and communicate the data effectively via verbal and non-verbal presentations (both oral and written formats)	V2	Group discussions	-Presentations -Reports
3.3	Adhere to the relevant ethics while performing a field or research work	V3	Group discussions	-Presentations -Reports

C. Course Content

No	List of Topics (Lectures)	Contact Hours
1.	- Introduction: What is Green infrastructure? Consumerism – Barriers to "Going Green". Ch. 1 Benedict	8
2.	- Green infrastructure past and present Green Buildings LEED Certification. Ch.2 Benedict	6
3.	- Benefits-Weighing: the Pros and Cons New and Emerging Technologies. Ch.3 Benedict	4
4.	- Where do we begin? The Basics of Network Design Greening Business & Industry. Ch.4, 5 Benedict	2
5.	Matching Resources to Needs The Greening of IT. Ch. 6 Benedict	2
6.	Incentives and Economics of "Going Green".	2
7.	Management and Stewardship Green Partnerships. Ch. 7 Benedict	2
8.	Building Support and Making it happen Looking to the Future. Ch. 8, 9 Benedict	4
Total		**30**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm exam 1	Around 4th -5th week	15%
2.	Midterm exam 2	Around 7th -8th week	15%
3.	Final Lab Exam Green infrastructure project	15th week During the semester	30%
4.	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	Textbook: Benedict, Mark and McMahon, Edward T. (2006). Green Infrastructure: Linking Landscapes and Communities. Washington: Island Press.
Supportive References	
Electronic Materials	https://greeninfrastructureontario/what-is-green- infrastructure/
Other Learning Materials	Videos, slides and presentations

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms and Laboratories
Technology equipment (projector, smart board, software)	Projector and Smartboard
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	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 Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

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