

LANDSCAPE IRRIGATION DESIGN AND MANAGEMENT (OEC-I)			
Course Code	21AG652	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	(3:0:0:0)	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	02
Course Objectives: <ul style="list-style-type: none">• Impart Knowledge on historical importance of Indian gardens and conventional methods of landscape irrigation• To train the students on different types of modern landscape irrigation methods and their design unit operations of agricultural process engineering• Also to enrich the students and familiarize the students in modern landscape irrigation methods and their design			
Teaching-Learning Process (General Instructions) <p>These are sample Strategies; which teachers can use to accelerate the attainment of the various course outcomes.</p> <ol style="list-style-type: none">1. Adopt different types of teaching methods to develop the outcomes through PowerPoint presentations and Video demonstrations or Simulations.2. Chalk and Talk method for Problem Solving.3. Arrange visits to show the live working models other than laboratory topics.4. Adopt collaborative (Group Learning) Learning in the class.5. Adopt Problem Based Learning (PBL), which fosters students Analytical skills and develops thinking skills such as evaluating, generalizing, and analyzing information.6. Conduct Laboratory Demonstrations and Practical Experiments to enhance experiential skills.			
Module-1			
INTRODUCTION –Historical importance of Indian gardens and history of gardening in different areas. Famous gardens of India and study of their methods of irrigation systems. Definition of landscape - conventional methods of landscape irrigation - study of hose irrigation system – components. Study of components of portable sprinkler with hose pipes. Merits and demerits of conventional landscape irrigation systems			
Teaching-Learning Process	<ol style="list-style-type: none">1. PowerPoint Presentation2. Chalk and Talk are used for Problem Solving (In-general)3. Video demonstration or Simulations4. Laboratory Demonstrations and Practical Experiments		
Module-2			
Types of modern landscape irrigation methods - merits and demerits, Pop-up sprinklers – spray pop-up sprinklers - components - selection criteria. Design criteria for pop-up sprinkler systems in landscaping, Shrub adopter system – features - accessories			
Teaching-Learning Process	<ol style="list-style-type: none">1. PowerPoint Presentation2. Chalk and Talk are used for Problem Solving (In-general)3. Video demonstration or Simulations4. Laboratory Demonstrations and Practical Experiments		
Module-3			
Types of drip irrigation methods adopted in landscaping and their components. Design and layout of drip irrigation system in landscaping. Design of bubbler irrigation system - selection and design criteria			
Teaching-Learning Process	<ol style="list-style-type: none">1. PowerPoint Presentation2. Chalk and Talk are used for Problem Solving (In-general)3. Video demonstration or Simulations4. Laboratory Demonstrations and Practical Experiments		
Module-4			

Types of landscapes -natural landscapes and human made landscapes, Basic theme of gardens viz. circular, rectangular and diagonal themes. Factors affecting landscape design viz., initial approach, view, human choice, simplicity and topography etc. Suitability of different types of irrigation systems for landscapes, Study of water requirements for different landscapes - numerical problems on water requirements of landscapes, Study of segments of landscape irrigation systems.

Teaching-Learning Process	<ol style="list-style-type: none"> 1. PowerPoint Presentation 2. Chalk and Talk are used for Problem Solving (In-general) 3. Video demonstration or Simulations 4. Laboratory Demonstrations and Practical Experiments
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Module-5

Main components of modern landscape irrigation systems and their selection criteria. Types of pipes and pressure ratings in landscape irrigation, Study of economics of pipe selection, pipe sizing and selection criteria. Numerical problems on economics of pipe selection. Study of different automation system for landscape irrigation. Study of main components, types of controllers and their application in automation system. Design and layout of modern landscape irrigation systems

Teaching-Learning Process	<ol style="list-style-type: none"> 1. PowerPoint Presentation 2. Chalk and Talk are used for Problem Solving (In-general) 3. Video demonstration or Simulations 4. Laboratory Demonstrations and Practical Experiments
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Course outcome (Course Skill Set)

At the end of the course the student will be able to :

1. Acquire knowledge on historical importance of Indian gardens and conventional methods of landscape irrigation
2. Be proficient in types of modern landscape irrigation methods and their design
3. Understand the types of drip irrigation methods adopted in landscaping and their design
4. Some of the basic concepts related to landscape and its suitability
5. To acquaint the students with modern landscape irrigation system and its economics

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50) in the semester-end examination(SEE), and a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together

Continuous Internal Evaluation:

Three Unit Tests each of **20 Marks (duration 01 hour)**

1. First test at the end of 5th week of the semester
2. Second test at the end of the 10th week of the semester
3. Third test at the end of the 15th week of the semester

Two assignments each of **10 Marks**

4. First assignment at the end of 4th week of the semester
5. Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for **20 Marks (duration 01 hours)**

6. At the end of the 13th week of the semester

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be **scaled down to 50 marks**

(to have less stressed CIE, the portion of the syllabus should not be common /repeated for any of the methods of the CIE. Each method of CIE should have a different syllabus portion of the course).

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester End Examination:

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (**duration 03 hours**)

1. The question paper will have ten questions. Each question is set for 20 marks.
2. There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), **should have a mix of topics** under that module.

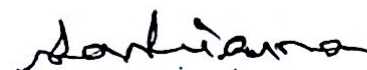
The students have to answer 5 full questions, selecting one full question from each module

Suggested Learning Resources:**Books**

1. Michael A.M. 2012. Irrigation: Theory and Practice. Vikas Publishing Vikas Publ. House New Delhi. y Singh Neeraj Partap. 2010.
2. Landscape Irrigation and Floriculture Terminology, Bangalore. y Smith Stephen W. Landscape Irrigation and Management. Amazon. com.

Web links and Video Lectures (e-Resources):**Activity Based Learning (Suggested Activities in Class)/ Practical Based learning**

- Quizzes
- Assignments
- Seminars
- Mini Projects


H.O.D.

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