Irrigation Engineering Technology

Irrigation Engineering Technology Certificate of Achievement

The Irrigation Engineering Technology program prepares students for careers in irrigation sales, installation, design and operation; learning skills in computer-aided drafting, irrigation management, evaluation and design, including advanced design and drip and micro irrigation design and management. The curriculum is designed to align with the Irrigation Association's certified irrigation designer certification and certified agricultural irrigation specialist (CAIS) certification. Completion of either certificate qualifies students to enter the professional job market or the units may be applied as university transfer or to fulfill the education requirement for the California Department of Pesticide Regulation's (CDPR) Agricultural Pest Control Adviser (PCA) license and the Society of Agronomy's Certified Crop Adviser (CCA).

On completion of the Irrigation Engineering Technology program, the student will be able to:

- draw basic two-dimensional drawings with the associated drawing tools and aids;
- create 2-dimensional isometric drawings with the associated drawing tools;
- demonstrate a complete understanding of the soil-plant-water relationship by correctly completing a soil water budget;
- calculate evapotranspiration rates for crops common to California over a complete growing season;
- compare and install all the major water supply systems (i.e. surface, sprinkler, drip, and micros);perform an irrigation system evaluation for drip/micro irrigation systems;
- determine irrigation system distribution uniformity and application efficiency for given irrigation systems;
- determine which type of irrigation system is appropriate for site specific conditions, i.e. soil properties and crop data;
- specify materials and components to make a complete system that optimizes the balance between capital investment and operation and maintenance costs;
- determine plant water use for given crops and climatic conditions;
- calculate sprinkler spacing for head-to-head coverage;
- select proper sprinklers for given crops and irrigation system components;
- complete irrigation designs for efficiency and uniformity;
- calculate system flow rate requirements and friction losses in hoses;
- determine allowable pressure differences in irrigation systems;
- determine proper pipe size, pressure regulation and appropriate filtration for given design parameters;
- select proper emission devices and design for minimization of clogging.

Course #	*Title*	*Units*
Required Core Courses		
AET 015	CAD for Agriculture	2
AET 021	AG-Irrigation Management	3
AET 022	Irrigation Evaluation/Design Principles	4
AET 023	Advanced Irrigation Design	3
AET 024	Drip & Micro Irrigation Design & MGMT.	3
Plus 3 units from the following:		
AET 010	Surveying	3
AET-011	Advanced Surveying with GIS Applications.	
AET-016	Applications for Land Management in Agriculture.	1
CRPSCI 006	Introduction to Precision Agriculture	3
CRPSCI 019	California Water	3
SLSCI 021	Introduction to Soil Science	4
	Total	**18**

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