CTE Program Proposal

NAME OF COLLEGE: Modesto Junior College

CONTACT: Pedro Mendez, Dean of CTE, Community & Workforce Development

PHONE NUMBER: 209.575.6332

EMAIL ADDRESS: mendezp@mjc.edu

DATE: 12/11/15

Division: Agriculture and Environmental Sciences (Dean: Don Borges)

Faculty: Steve Amador, Instructor of Agriculture

PROGRAM NAME: Irrigation Design

☒ New Program Proposal ☐ Program Revision Proposal

TYPE OF DEGREE:

☒ Certificate
☐ Associate of Arts
☐ Associate of Science
☐ Associate of Arts for Transfer
☐ Associate of Science for Transfer
☐ Other

ATTACHMENTS REQUIRED:

Labor/Job Market Data and Analysis
Advisory Committee Meeting Minutes
Employer Survey

A. Appropriateness to Mission

1. Statement of Program Goals and Objectives

The goal of the proposed Irrigation Design Certificate is to increase the number, preparation and technical expertise of irrigation technicians and designers who are prepared to improve agriculture water management, increase irrigation delivery system efficiency, and enhance on-farm water conservation. The goals match those listed in the Education Code 66010.4, specifically section 1a, 2a and 3.

The distribution and maintenance of clean water impacts every industry in the Valley. Agriculture is the largest consumer of fresh water, accounting for 79.9% of water use compared to 4.3% for domestic use. The Water sector provides economic vitality to the Valley and is a critical component of public health and overall daily life. (source: Center of Excellence, Water Sector Profile 2013). The water sector is heavily reliant on technology to increase efficiency and effectiveness. Over the last several years, evolving technology has changed the way industries that use water must operate, thereby impacting skill requirements of technicians. New technology has created a skills gap as it develops more quickly than the industry can keep up with. Irrigation efficiency and water conservation are critical, creating a need for irrigation technicians with state-of-the-art skills. Technology that enables remote monitoring, precise irrigation designs and projections, and increased water conservation will be embedded in the development of certificates and degrees found in the Irrigation Technology Program at Modesto Junior College.

2. Catalog Description

This program will prepare students for jobs in irrigation design. Training and skill development include; AutoCAD fundamentals, system hydraulics, site development and material selection. Contact the division office in the Agriculture Building for advising assistance.

Program Learning Outcomes: Upon completion of the degree, students will be able to do the following:

1. Collect site data in regards to size, soil type, elevation differences, crop water needs, and water source in order to provide irrigation system recommendations.
2. Design a sprinkler irrigation system that is consistent with industry standards.
3. Accurately draw an irrigation system using AutoCAD software which is considered the industry standard.

3. Program Requirements

Display of Program Requirements

Core Courses	Title	Semester Sequence	Units
AGEC 225	Agriculture Computer Applications	1	3
AGM 235	Irrigation and Drainage	1	3
AGM 237	Irrigation Wells, Pumps and Drive Systems	1	3
AGM 238	Irrigation System Design	1	3
	Total Units		**12**

4. Background and Rationale

The Modesto Junior College Agriculture Department has received several grants to assist in the development of the Irrigation Technician program. With state drought relief funding along with a grant from the National Science Foundation, we have been able to begin development of lab facilities and equipment. Current grant funding is just under $900,000. In addition to laboratory facilities and equipment, we have begun delivering the first irrigation course and are presently teaching our first cohort in Irrigation Technology. Presently there are 22 students enrolled in the first cohort and we look for enrollment and course offerings to increase in the upcoming semesters. The goal is to graduate our first group of students in the spring of 2017 and continue to supply the industry with needed technicians for years to come.

The Irrigation Design Certificate prepares students for jobs in irrigation design. Training and skill development include; AutoCAD fundamentals, system hydraulics, site development and material selection.

B. Need for Program

5. Enrollment and Completer Projections

		2016-17		2017-18	
CB 01: COURSE DEPT/NO	CB 02: COURSE TITLE	SECTIONS OFFERED (ANNUAL)	ENROLLMENT TOTAL (ANNUAL)	SECTIONS OFFERED (ANNUAL)	ENROLLMENT TOTAL (ANNUAL)
AGEC 225	Agriculture Computer Applications	*	*	*	*
AGM 235	Irrigation and Drainage	2	45	3	75
AGM 237	Irrigation Wells, Pumps and Drive Systems	1	22	1	25
AGM 238	Irrigation System Design	1	22	1	25

***** *Denotes course part of agriculture foundational courses that are required for students in multiple agriculture certificates and/or degree programs. Irrigation Technology students will enroll in these courses along with students from other programs.*

6. Place of Program in Curriculum/Similar Programs

The proposed certificate is part of the Irrigation Technology program at MJC is independent and unique to the campus; there are no other similar programs or programs with similar curriculum.

AS Degree Irrigation Technology		
Certificate: Irrigation Technology		
Certificate: Irrigation Management	Certificate: Irrigation Design	Certificate: Construction & Installation

7. Similar Programs at Other Colleges in Service Area

The MJC Irrigation Design Certificate uniquely offered in the Central Valley and Mother Lode Region and California. West Hills Coalinga is developing some similar courses through their efforts with an Irrigation Manager or Installation Technician Certificate; however, this program is too far for students residing in Stanislaus County to commute for classes. Further, few community colleges are offering courses that lead to a college certificate and/or 3rd party industry certification achievement.

8. Labor Market Information and Analysis

Please See Attachment

9. Employer Survey

Discuss in this area, or as a separate attachment, employer input in regard to necessity of program and number of jobs available.

Faculty does not believe a survey is needed. Much work has been done via the local advisory committee and research work through the National Science Foundation Grant associated with skill trends for Agriculture Irrigation Specialist associated occupation duties and skills.

10. Explanation of Employer Relationship

Whenever a program is to be offered in close cooperation with one or more specific employers, a discussion of the relationship must be provided.

The Irrigation Design Certificate of Achievement follows Title 5, section 51006 requirements. It is designed for student interested in obtaining skills and preparation for employment in the industry. Local employers serve on the advisory committee, offer internship and employment placement sites and support the program via donation of (a) time in class as guests, (b) support of site field trips, (c) supplies, technology and equipment and (d) outreach support.

11. List of Members of Advisory Committee

This list must include advisory committee member names, job titles, and business affiliations.

Steve Amador – Modesto Junior College
Donald Borges – Modesto Junior College
Jenni Abbott – Modesto Junior College
Elizabeth Orozco-Wittke – Modesto Junior College
Darren Aldaco – Eurodrip USA
Dominick Amador – RMC Water
Ray Azevedo – JM Equipment
Tim Boyd – Retired Irrigation Designer
Alex Buenrostro – Turlock Irrigation District
Caitie Campodonico – East San Joaquin Water Coalition
John Davids – Modesto Irrigation District
Sam Terpstra – Oakdale Irrigation District
Jake Wenger – Local Grower
Jason Word – Turlock Irrigation District

12. Recommendation of Advisory Committee

In a separate attachment, provide minutes of the advisory committee meetings at which the program was discussed and approved, with relevant areas highlighted, as well as a summary of the advisory committee recommendations.

C. Curriculum Standards

13. Display of Proposed Sequence

First Semester		Units
AGEC 225	Agriculture Computer Applications	3
AGM 235	Irrigation and Drainage	3
AGM 237	Irrigation Wells, Pumps and Drive Systems	3
AGM 238	Irrigation System Design	3
Total		**12**

14. Transfer Applicability (if applicable)

Not applicable

D. Adequate Resources and Compliance

15. Library and Learning Resources Plan

Discuss resources currently available for course support, as well as resources recommended for purchase to further support the course.

No additional resources will be require beyond the college's current library and learning resources.

16. Facilities and Equipment Plan

Discuss facilities and equipment currently available for course support, as well as facilities and equipment recommended for purchase to further support the course.

NSF Grant and CTE Enhancement Funds have been appropriated to purchase initial technology and equipment need to start the program. The college will work with other colleges in the region as part of the CTE Enhancement Regional Project to identify future equipment and facility needs.

17. Financial Support Plan

Discuss how the program, including faculty, will be funded.

Financial support for program will be address under the division's annual college operational resources planning projections for agricultural programs.

18. Faculty Qualifications and Availability

Discuss the discipline, qualifications and availability of faculty as it relates to the proposed program.

The faculty discipline for this program is Agriculture. Presently, current FT faculty and adjunct faculty are available to support program. All faculty that teach in this program will meet the State minimum qualifications and possess knowledge and experience in this program area.

19. Based on model curriculum (if applicable)

State the model curriculum on which the proposed program is based.

N/A

20. Licensing or Accreditation Standards

List any licensing, accreditation or certifications available to program completers.

No required licensing or accrediting standards apply to this program. No additional student selection criteria is required, this program complies with California Code of Regulations, title 5 section 55201 and 58106.

21. Student Selection and Fees

If the program is selective, describe relevant entry criteria and the selection process for admission to the program. Specify all mandatory fees that students will incur for the program aside from the ordinary course enrollment fee.

There are no additional fees require beyond those identified in California Education Code section 76300