Proposal: Advanced Photovoltaic Technician

Item 1. Program Goals and Objectives

Student Learning Outcomes

1. Given a customer's electrical usage, plan, design, document, and install various photovoltaic systems with all required hardware and electrical equipment to NEC and local/state requirements.

Item 2. Catalog Description

The courses in the advanced photovoltaic technician certificate prepare the student for employment in the photovoltaic industry for auditors, site surveyors, designers, and other advanced positions.

Item 3. Program Requirements

Certificate of Achievement: Advanced Photovoltaics

Requirements	Dept. Name/#	Name	Units	Sequence
Required Units = 20	EST 51	Direct Current Fundamentals of Electronics	3	Year 1 fall
	EST 52	Alternating Current Fundamentals	3	Year 1 fall
	EST 53	Lab Safety Practices	2	Year 1 fall
	EST 54	Integrated Devices	3	Year 1 fall
	EST 56A	Wiring Methods	3	Year 1 spring
	EST 81	Photovoltaic Systems	3	Year 1 spring
	EST 96D	National Electrical Code-Electrical Safety	3	Year 1 spring

Proposed Sequence:
Year 1, Fall = 11 units
Year 1, Spring = 9 units
TOTAL UNITS: 20 units

Item 4. Master Planning

The Advanced Photovoltaics Certificate of Achievement will fulfill Fresno City College's mission by preparing students to work and for transfer. The Certificate meets industry requirements for employment in alternative energy sectors, as well as providing a first step towards completion of an associate degree, which leads bachelor's degree. Labor Market projections indicate there will be a 6% increase in the number of jobs for Solar Photovoltaic Installers between 2015 and 2020. Since this is a

part of the Electrical Systems Technology program, these courses also add to the knowledge base of students interested in obtaining other positions in the electrical field as well.

Item 5. Enrollment and Completer Projections

		2013-2014		2014-2015	
CB01: Course Department Number	CB02: Course Title	Annual # Sections	Annual Enrollment Total	Annual # Sections	Annual Enrollment Total
EST 51	Direct Current Fundamentals of Electronics	4	96	5	120
EST 52	Alternating Current Fundamentals	4	96	5	120
EST 53	Lab Safety Practices	4	96	3	72
EST 54	Integrated Devices	4	96	4	96
EST 56A	Wiring Methods	2	48	2	48
EST 81	Photovoltaic Systems	1	15	1	15
EST 96D	National Electrical Code-Electrical Safety	2	48	2	48

Item 6. Place of Program in Curriculum/Similar Programs

Before completing this section, review the college's existing program inventory in the CCC Curriculum Inventory, then address the following questions:

a) Do any active inventory records need to be made inactive or changed in connection with the approval of the proposed program? If yes, please specify. No.

b) Does the program replace any existing program(s) on the college's inventory? Provide relevant details if this program is related to the termination or scaling down of another program(s). No.

c) What related programs are offered by the college?

This Certificate aligns with the current offerings in the Electrical Systems Technology program. Adding a Photovoltaics Certificate provides for career path enhancement as well as direct career opportunities.

Item 7. Similar Programs at Other Colleges in Service Area

The Certificate was developed in consultation with the advisory committee for the Electrical Systems Technology program (EST).

Public:

College of the Sequoias – Offers one introductory course in Electronics, Information Technology track, and Electrician Training program. (Similar, but not of the same breadth)

Merced Community College – Offers Associate degrees in Electrical Technology and Electronics Technician. (Similar)

California State University Fresno – Offers one 4-year degree in Industrial Technology. (Similar, but geared toward management, also less lab intensive)

Private:

Detailed information on programs from private colleges is not readily available without meeting with a recruitment officer.

DeVry - College of Engineering & Information Sciences. Offers an Associate in Electronics and Computer Technology.

San Joaquin Valley College – Offers Certificate of Completion (7 months) and Associate degrees in Computer Systems Administration and Industrial Technology (14months).

United Education Institute – Offers a 'Diploma' in Computer Systems Technician Training (8 months).

Currently there are no other programs or colleges in our service area that offer courses in photovoltaic systems.

As shown in the labor market data, there are many career paths that will require the understanding of photovoltaic systems. This subject will be included in nearly all aspects of electrical due to the rapid installation and deployment of the systems in our region. Having a certificate that highlights knowledge in this emerging technical field allows for more opportunities and career paths.