

ENERGY WORKFORCE **SECTOR STRATEGY**



Central Valley Energy Efficiency Industry Forum

July 17, 2013

Agenda

1:00PM - Welcome & Introductions

Lisa Shell, PG&E

1:10PM - Proteus, Inc. Overview

Hector Uriarte, Green Jobs Coordinator

1:20PM - EWSS Project Overview

Jim Caldwell, Workforce Incubator

1:50PM – Web Portal Demonstration

Brad Hurte, Workforce Incubator

2:10PM - Open Discussion

J.D. Stack, Workforce Incubator & All

3:00PM - Wrap-up & Adjourn

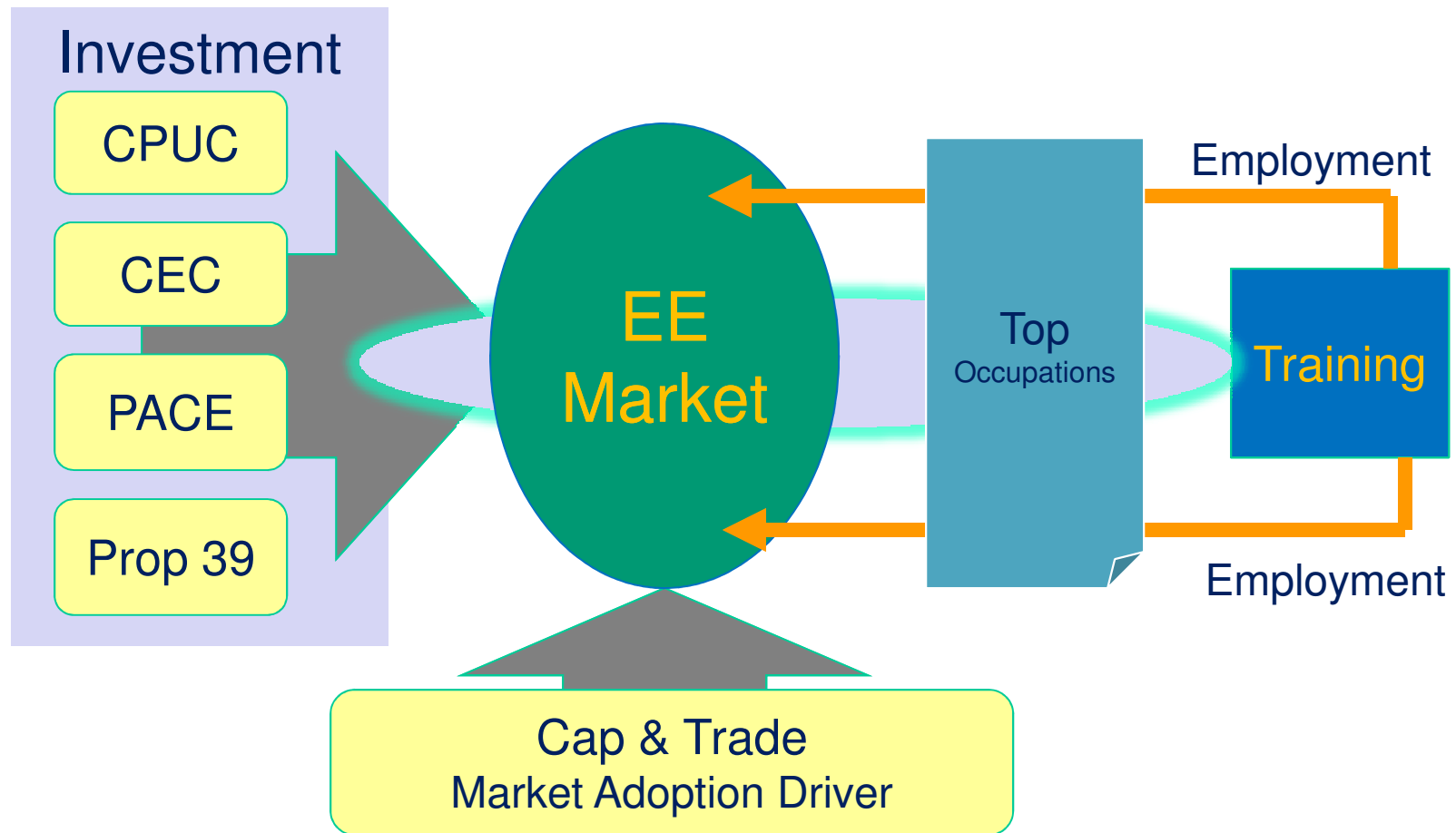
Proposed Meeting Outcomes

- ❖ Quantify forces driving Commercial EE business
- ❖ Estimate business and workforce impact
- ❖ Propose web portal resources for employers
- ❖ Guide Regional EE Industry workforce needs
- ❖ Agree on next steps

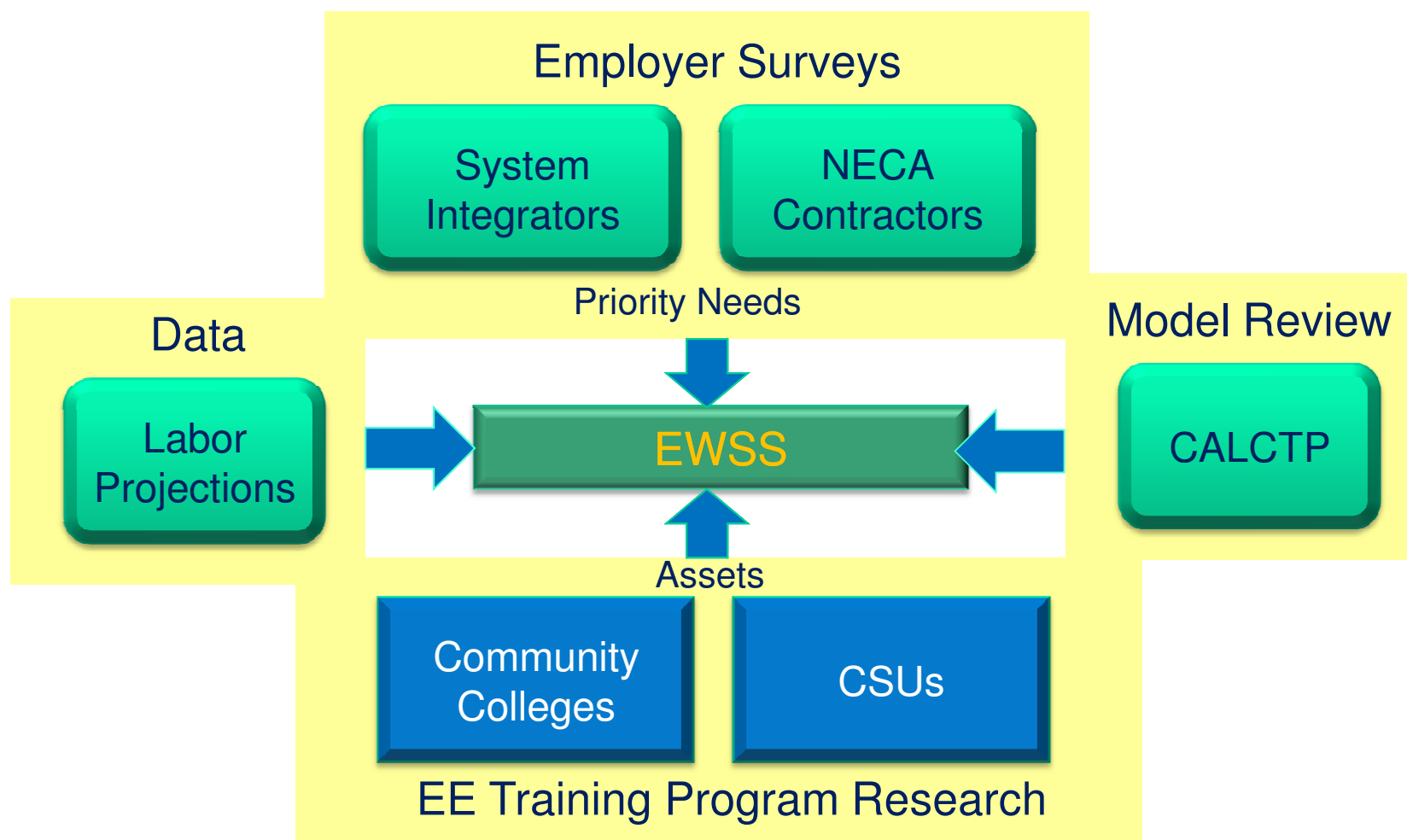
Financial Drivers

Program	Annual Investment	Description
Energy Efficiency Funding to the IOUs (CPUC)	\$800M	Develops and implements a portfolio of Integrated Demand Side Management energy efficiency programs
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Proposition 39	\$550M	Upgrades public school buildings and community college campuses for energy efficiency (through 2018)
PACE Financing (Private)	TBD	Property Accessed Clean Energy (PACE) financing for commercial buildings helps make energy efficiency an attractive investment
Smart Grid (CPUC)	TBD	Proceedings are in progress for authorizing ~50 demonstration projects
Cap and Trade (CARB)	-	Establishes a market for carbon reduction credits to commercial and industrial building owners

Investment to Drive Market Adoption



EWSS Research Process



Longer-Term Employment Outlook

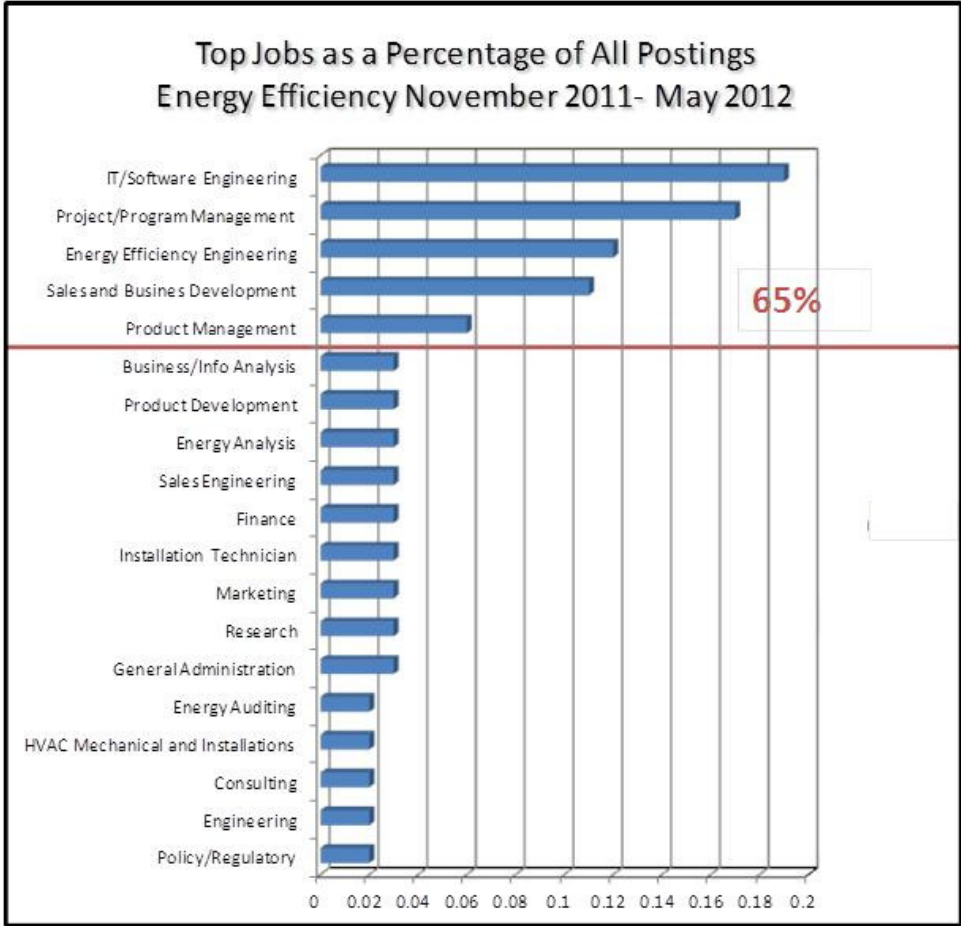
Annual Job Openings in PG&E Service Area 2012 - 2016

Professional Categories	
Civil Engineers	318
Architects	225
General and Operations Managers	80
Construction Managers	79
Mechanical Engineers	64
Engineers, all other	62
Accountants & Auditors	31
Management Analysts	26
Environmental Engineers	25

CTE Categories	
Electricians	309
Plumbers, Pipefitters, & Steamfitters	179
Carpenters	161
First Line Supervisors	129
Managers, all other	107
Cost Estimators	69
HVAC/R Mechanics & Installers	60
Construction & Building Inspectors	55
Sheet Metal Workers	45

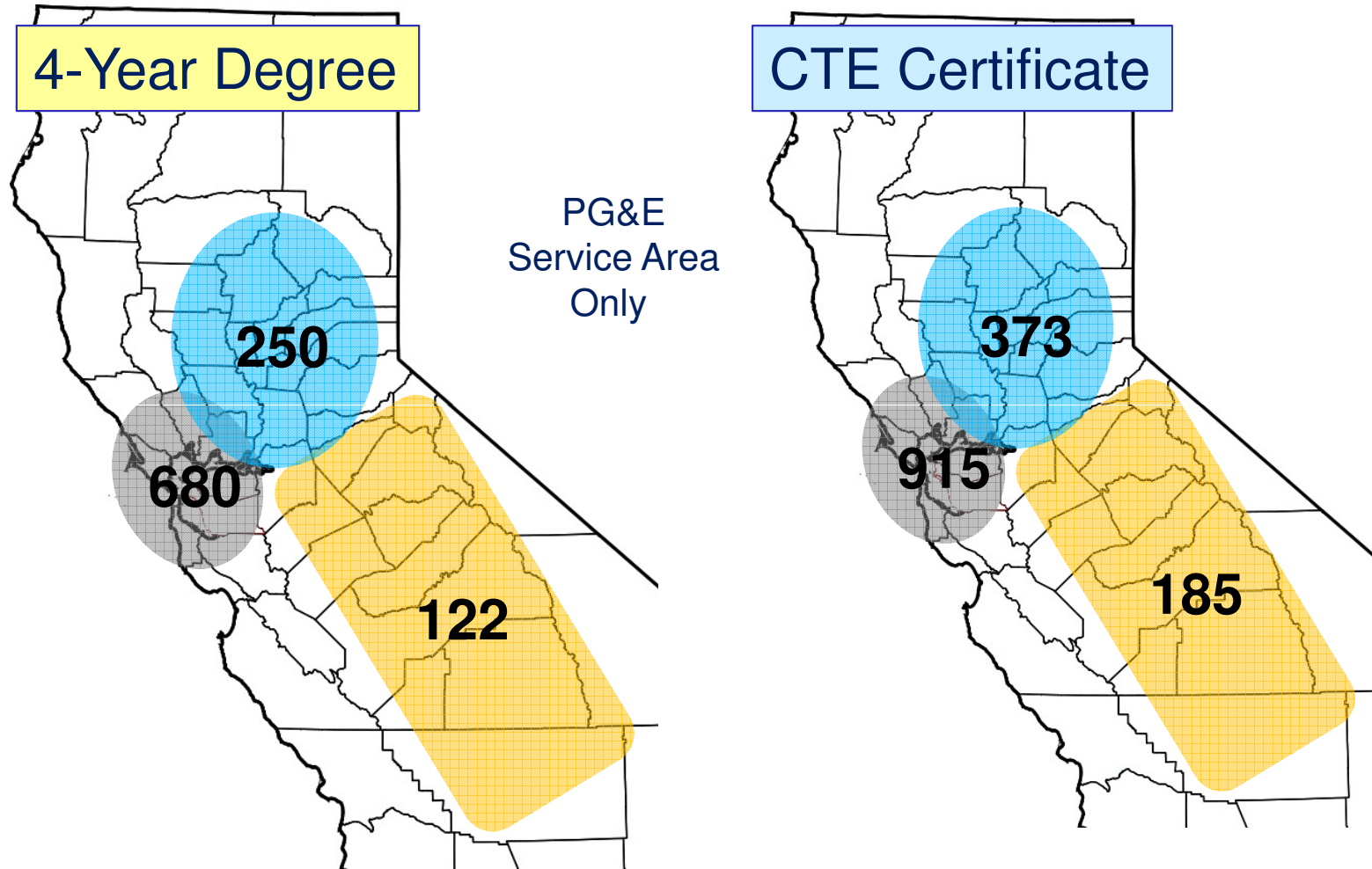
Economic Modeling Specialists Inc., 2012

Near-Term Needs



SolarTech Workforce Innovation Collaborative

Annual Distribution of Job Openings *Projected for 2012 - 2016*



Survey of Education & Training Programs

Program Intensity – Top Occupations

CSUs

Civil Engineering
General Construction
Architecture
Mechanical Engineering
Electrical/Electronic Engineering
General Engineering
Environmental Health Engineering

Community
Colleges

Electricians
General Construction
Architecture
Carpentry
Energy/ HVAC Technology

CSU Programs

Highest Relevance to Energy Efficiency

Cal State Chico

- Civil Engineering
- Electrical & Electronic Engineering
- Mechanical Engineering
- General Construction

San Francisco State

- Civil Engineering
- Mechanical Engineering
- Electrical & Electronic Engineering

CSU East Bay

- General Engineering
- General Construction

San Jose State

- Civil Engineering
- Electrical & Electronic Engineering
- General Engineering
- Mechanical Engineering

Sacramento State

- Mechanical Engineering
- Civil Engineering
- Electrical & Electronic Engineering
- General Construction

Fresno State

- Electrical & Electronic Engineering
- Mechanical Engineering
- Civil Engineering
- General Construction

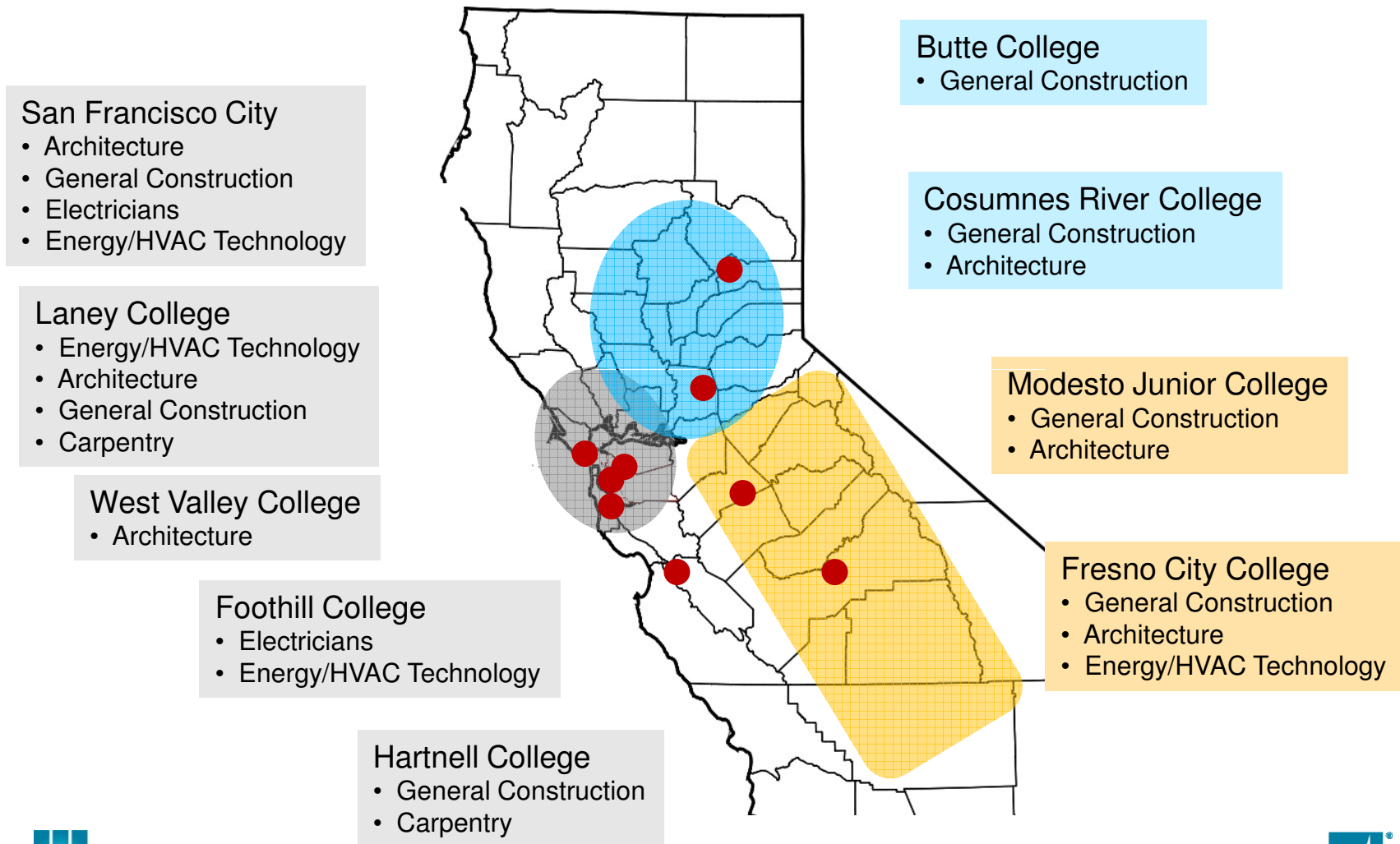
Cal Poly San Luis Obispo

- Architecture
- Mechanical Engineering
- Civil Engineering
- Environmental Health Engineering
- Electrical & Electronic Engineering
- General Engineering
- General Construction

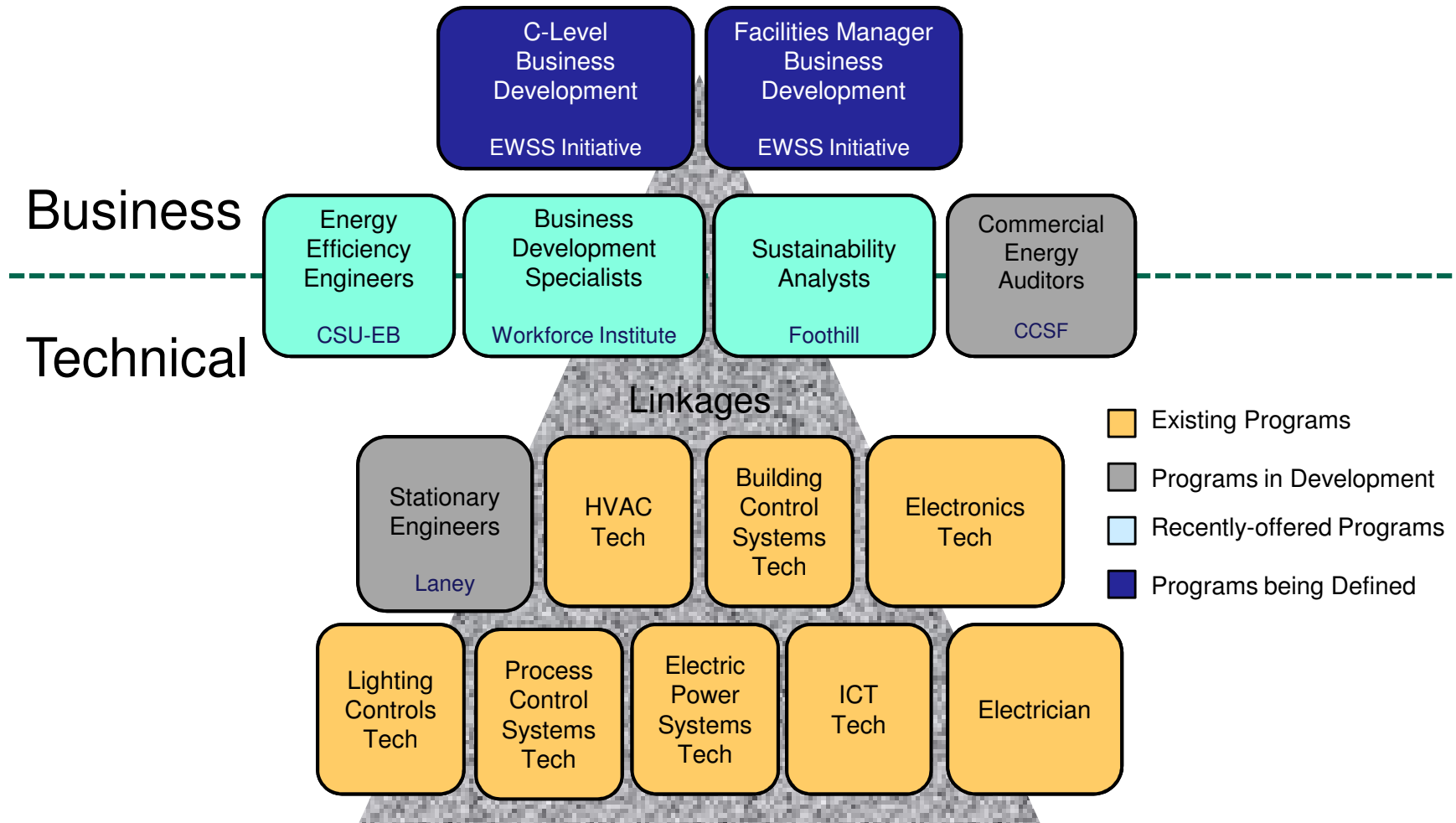


Community College Programs

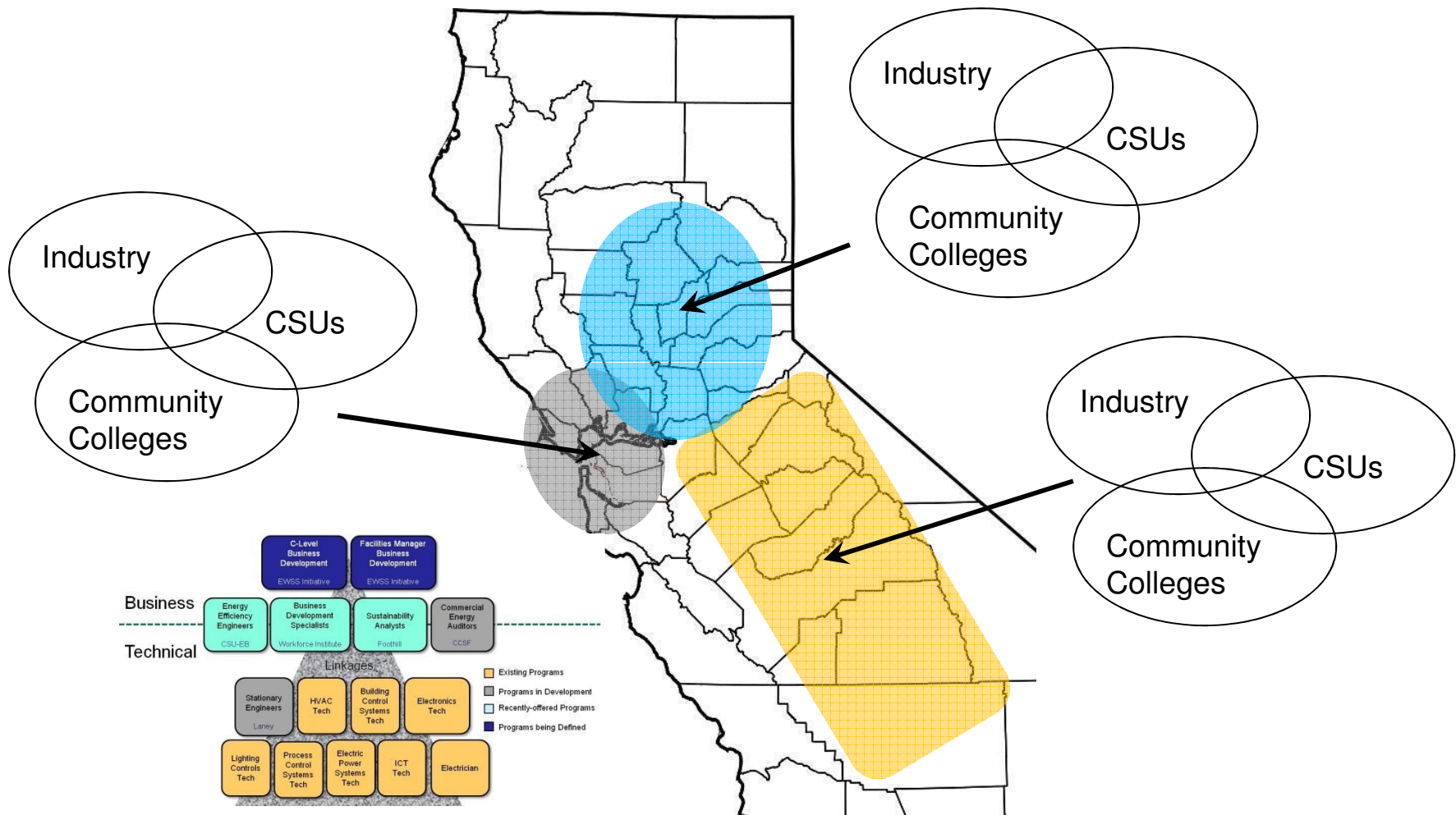
Highest Relevance to Energy Efficiency



Energy Efficiency Training Portfolio



Regional Alignment



Regional Prioritization

- Drive Market Growth
 - *Addressing Barriers*
 - *Capacity in Critical Jobs*
- Define Workforce Needs
 - *Incumbent Worker Up-skilling*
 - *New Employee Pipeline*
- Address Gaps
 - *Programs*
 - *Pathways*
 - *Subject Matter Expertise*
 - *Instruction*

Promote Regional Training



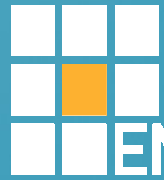
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Economic Modeling Specialists Inc., 2012



ENERGY WORKFORCE **SECTOR STRATEGY**



Portal Resources for Employers

Regional Portal Updates

Create Broad Access to Information



EESectorStrategy.com

- ❖ Source for news, information, and research from the Sector Strategy
- ❖ New Employers Resources
- ❖ Information on where candidates are being trained
 - ✓ *In which regions*
 - ✓ *What they are learning*
 - ✓ *And how employers can access them*

Energy Efficiency Workforce Sector Strategy

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[Industry Resources](#)

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Start Here

Welcome to the Energy Efficiency Workforce Sector Strategy Portal.

We're developing the education and training strategies and programs that will help California meet the needs of both its incumbent and new entrant workforce, and also helping reach our state's goals for a cleaner, sustainable energy future. The work has just begun. Thank you for your commitment to this important process.

This portal will provide resources to aid you, but you'll also find links to training and to pools of candidates ready for your recruitment.

What's New on this site:

What's in the News:

Employers!

We have candidates graduating from top notch educational programs addressing your most critical hiring needs in energy efficiency. Click a Hot Job or Region or a School with Candidates to see what candidates are available right now and find out what they know.

Jobs

- Architects
- Civil Engineers
- Construction & Building Inspectors
- Construction Managers, Supervisors
- Electrical Engineers
- Electricians
- Engineers, Engineering Technicians
- Environmental Engineers
- HVAC Installers & Technicians
- Mechanical Engineers
- Sheet Metal Workers

**Top Energy
Efficiency Jobs
You Are Hiring
For**

Region

- Bay Area
- Sacramento & North
- San Joaquin Valley & South



**Regions of
Study**

Schools with Candidates

- Community Colleges
 - Butte College
 - City College of San Francisco
 - Cosumnes River College
 - Foothill College
 - Fresno City College
 - Hartnell College
 - Laney College
 - Modesto Junior College
 - West Valley College
- California State Universities
 - California State University, Fresno
 - Cal Poly San Luis Obispo
 - Chico State University
 - CSU East Bay
 - Sacramento State University
 - San Francisco State University

**Top Programs
with Candidates**



Civil Engineer

Civil Engineers perform engineering duties in planning, designing, and overseeing construction and maintenance of building structures, and facilities, such as roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, water and sewage systems, and waste disposal units. These colleges offer career pathway programs for energy efficiency-trained Civil Engineers. Click on links to program details and contact info for college career centers to gain access to qualified, trained candidates.

College

California State University, Fresno

Cal Poly San Luis Obispo

Chico State University

Sacramento State University

San Francisco State University

San Jose State University

Schools with
Top Programs

Links to Program Information

Civil Engineering Program

Civil and Environmental Engineering
Department

Department of Civil Engineering

Department of Civil Engineering

School of Engineering

Department of Civil & Environmental

Links to their
program web sites

Civil Engineering

LYLES COLLEGE OF ENGINEERING

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PROGRAMS

FACULTY AND STAFF

CURRENT STUDENTS

PROSPECTIVE STUDENTS

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[Lyles College of Engineering](#) > [Department of Civil & Geomatics Engineering](#) > [Civil](#) > [Civil Engineering](#)

Civil Engineering Program

Welcome! The Civil Engineering Program, part of the Civil and Geomatics Engineering Department at Fresno State, offers programs of study leading to the Bachelor of Science and Masters of Science in Civil Engineering. The Civil Engineering program is accredited by ABET (Accreditation Board for Engineering and Technology) which represents the major professional engineering groups in the United States.

Civil Engineering includes the research, development, planning, design, construction, and maintenance associated with urban development, water supply, structures, energy generation and transmission, water treatment and disposal, and transportation systems. Civil engineers deal with the analysis, design, construction, function and safety of complex structures and systems including buildings, bridges, dams, pipelines, highways, and harbors, and is concerned with the protection of the public against natural hazards of earthquakes, floods, landslides, and fires.

Mission

The mission of the Civil Engineering Program is to provide the educational environment necessary for civil engineering students to develop their personal potential to the greatest extent possible and to enrich the students lives in a culturally diverse environment. Civil engineering also provides the high quality education required for the students to fully develop their professional qualities and skills to serve society.

Program Educational Objectives

Links

- [Seismic Table Inaugural Run](#)
- [2011 Senior Presentations](#)



Southern Region / Valley College Programs

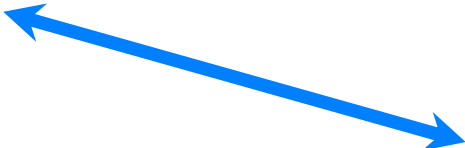
Click on a Southern Region / San Joaquin Valley college to see all the programs, pathways, and credentials offered by that school. Click on the jobs to open a page highlighting all the top tier schools offering programs and training for those jobs.

California State University, Fresno



- Civil Engineers
- Construction Managers, Supervisors
- Electrical Engineers
- Mechanical Engineers

Cal Poly San Luis Obispo



- Architects
- Civil Engineers
- Construction Managers, Supervisors
- Electrical Engineers
- Mechanical Engineers
- Environmental Engineers

Fresno City College



- Construction & Building Inspectors
- HVAC Installers & Technicians

Modesto Junior College



- Sheet Metal Workers

California State University, Fresno

In its second century, California State University, Fresno is nationally recognized for education that transforms students and improves the quality of life in the region and beyond; for leadership that drives economic, infrastructure, and human development; and for institutional responsiveness that fosters creativity, generates opportunity for all, and thrives on change. Drawing from the rich human diversity of experiences, values, world views, and cultures that make up the fabric of the Central Valley, Fresno State powers the New California in the 21st century.

Career Services Contact Info for Employers

Jobs

Civil Engineer

Civil Engineers perform engineering duties in planning, designing, and overseeing construction and maintenance of building structures, and facilities, such as roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, water and sewage systems, and waste disposal units.

Construction Manager, Supervisor

Construction Managers and subordinate supervisory personnel plan, direct, coordinate, or budget activities concerned with the construction and

maintenance of structures, facilities, and systems. They participate in the conceptual development of a construction project and oversee its organization, scheduling, and implementation.

Electrical Engineer

Electrical Engineers design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use.

Program Information

- **BS in Civil Engineering, Catalog of Requirements**
- **MS in Civil Engineering, Catalog of Requirements**

Additional information including courses, prerequisites, and contact information at the Civil Engineering Program web site.

- **BS in Construction Management**
- **Construction Management Minor**

Additional information including courses, prerequisites, and contact information at the Construction Management Program web site.

- **BS in Electrical Engineering**
- **MSE – Electrical Engineering Option (Requirements Handbook – pdf)**
- **Power/Energy Systems Curriculum for EEs**

Pathways Jobs

LYLES COLLEGE OF ENGINEERING

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STUDENT LOGIN

ALUMNI LOGIN

[Lyles College of Engineering](#) > [Jobs](#) > [Pathways Jobs](#) > Pathways Jobs

Pathways Jobs

Employers

The Lyles College of Engineering is offering an exclusive connection to its students and alumni through Pathways Jobs.

Do you need interns?

Do you need full-time engineers?

Please click on the link to the left to register your organization and your contact name. If you have any questions, please contact Pathways: Student Services at 559-278-5408.

Students/Alumni

Pathways Jobs is your one stop shop for internships, job opportunities, and career development workshops.

Register Now! Click on the link to the left.

Fresno City College

Fresno City College was established in 1910 as the first California Community College. It is a premier learning institution that strives to prepare the members of our community to meet the challenges of an increasingly complex global environment.

Career Center Contact Info

Jobs

Construction & Building Inspector

Construction and Building Inspectors inspect structures using engineering skills to determine structural soundness and compliance with specifications, building codes, and other regulations. Inspections may be general in nature or may be limited to a specific area, such as electrical systems or plumbing.

HVAC Installer & Technician

Heating, Air Conditioning, and Refrigeration Mechanics and Installers install or repair heating, central air conditioning, or refrigeration systems, including oil burners, hot-air furnaces, and heating stoves.

Program Information

- AS in Building Safety & Code Administration
- Building Safety & Code Administration Certificate of Achievement
- AS in Air Conditioning and Certificate of Achievement
- Air Conditioning Technology Overview Certificate of Achievement
- Commercial Air Conditioning, Heating, and Duct Systems Certificate of Achievement
- Digital Air Conditioning Controls Certificate of Achievement



Catalog & Course Schedules

Athletics

▼ Applied Technology Division

Courses

Departments

Faculty & Staff

▼ Programs

Air Conditioning

Architecture

Army ROTC

Auto Collision Repair Technology

Automotive Technology

► Building Safety & Code Administration

Cisco Networking Academy

Computer Aided Drafting and Design (CADD)

Computer Aided Manufacturing (CAM)

Construction

Electrical Systems Technology

Fire Academy

Fire Technology

General Motors ASEP Program

Courses & Programs » Applied Technology Division » Programs

Building Safety & Code Administration

E-mail Print

Ronald C. Cerkueira - Department Chair

Claudia Habib - Program Coordinator claudia.habib@fresnocitycollege.edu

Building Safety & Code Administration - Major #8220 CA

This curriculum is designed to prepare students for employment with building departments, other governmental agencies, and private inspection companies.

BUILDING SAFETY AND CODE ADMINISTRATION

CERTIFICATE OF ACHIEVEMENT

REQUIRED CORE CLASSES		UNITS
BSCA 10	Building Codes	3
BSCA 12	Plans Examining	3
BSCA 14	Building Inspection	3
BSCA 18	California Disabled Access Regulations	3
AT 10	Technical Computer Applications	2
AT 130	Industrial Mathematics	3
ARCH 12	Architectural Practice	3
ARCH 21	Materials of Construction	3

Note: Students qualify for the Certificate of Achievement upon completion of the major requirements listed above.

Some of the above courses may have prerequisites. See the catalog of classes.

The above Certificate of Achievement requires completion of the major (29 units) with a "C" or better grade in each course.

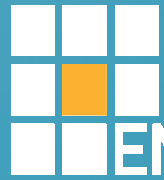
Student Learning Outcomes for BSCA Certificate or Associate Degree

1. Interpret and apply architectural and engineering drawings in performance of building inspections.
2. Identify various jobs and associated work performance in a building department to gain employment.
3. Identify different building materials and methods of construction currently in the building industry.
4. Articulate their ideas using the technical and formal vocabulary of architecture and construction.

Feedback Wanted!

- ❖ Is this useful information?
- ❖ Is there anything new here that would help you as a hiring employer?
- ❖ Organization & presentation of information?
- ❖ What else would you like to see?

webmaster@eesectorstrategy.com



ENERGY WORKFORCE **SECTOR STRATEGY**



Discussion

Given These Drivers

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And This Workforce Growth Pattern ...



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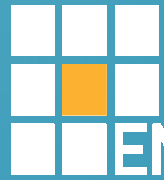
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Economic Modeling Specialists Inc., 2012

What Should We Focus On?

- ❖ Which job categories do you expect to grow?
- ❖ Where are the big skills gaps?
- ❖ How should we address these issues?
- ❖ What are the next steps?



ENERGY WORKFORCE **SECTOR STRATEGY**



Thank You!

EWSS Team Contacts

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JD Stack, Workforce Incubator
916-397-6410, jd@empoweradvisors.com

Brad Hurte, Workforce Incubator
206-953-0376, bhurte@workforceincubator.org

www.EESectorStrategy.com