

ENERGY WORKFORCE **SECTOR STRATEGY**



# Sacramento Region Energy Efficiency Industry Forum

September 17, 2013

# Agenda

10:00AM - Welcome & Introductions

*Lisa Shell, PG&E*

10:10AM - Green Capital Alliance Overview

*Suzanne Mayes, Valley Vision*

10:20AM – SETA/Sacramento Works Services

*Terri Carpenter, SETA*

10:25AM - EWSS Project Overview

*Jim Caldwell, Workforce Incubator*

10:50AM – Web Portal Highlights for EE Employers

*Brad Hurte, Workforce Incubator*

11:15AM - Open Discussion

*J.D. Stack, Workforce Incubator & All*

12:00PM - Wrap-up & Adjourn



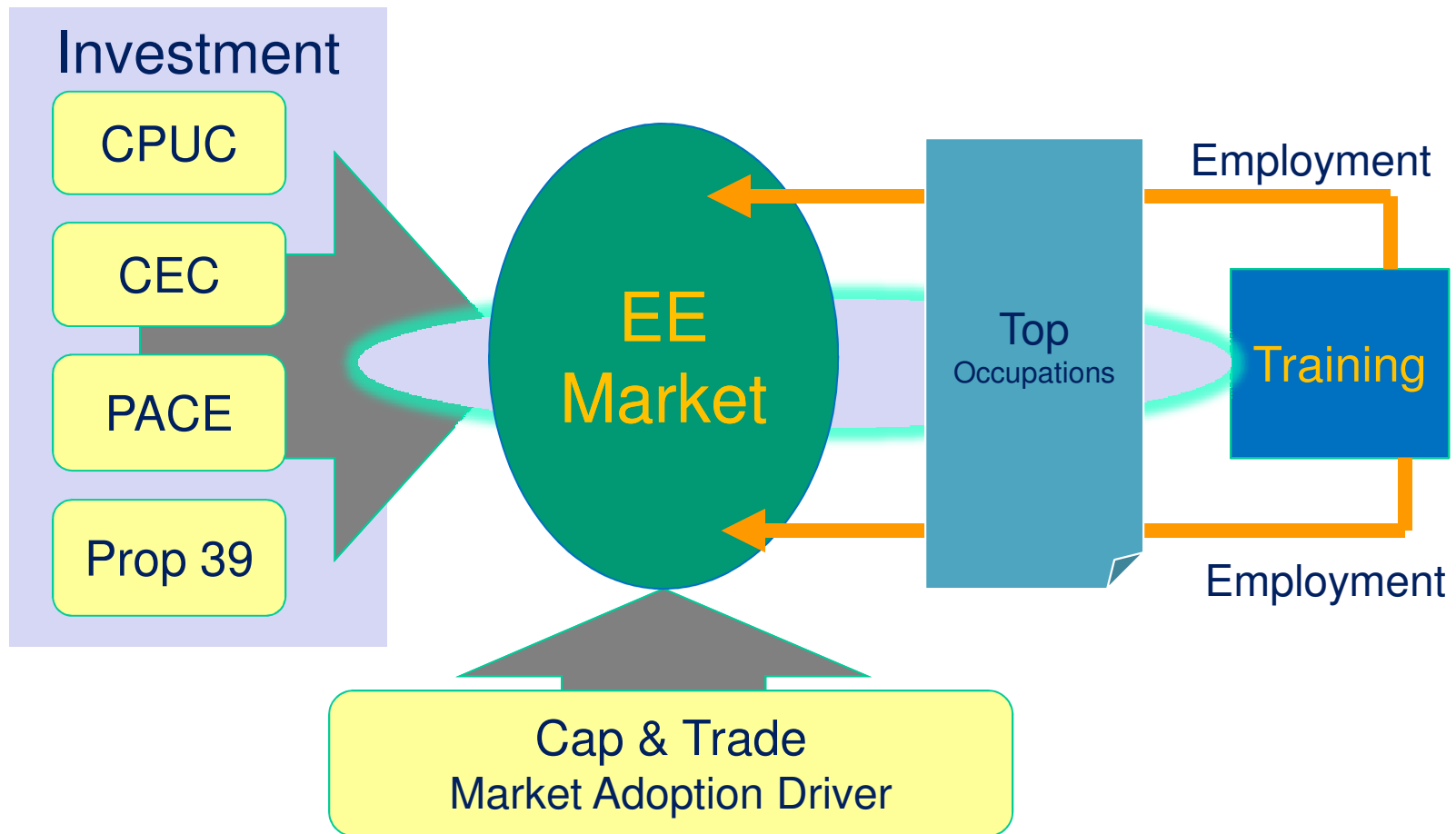
# Proposed Meeting Outcomes

- ❖ 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

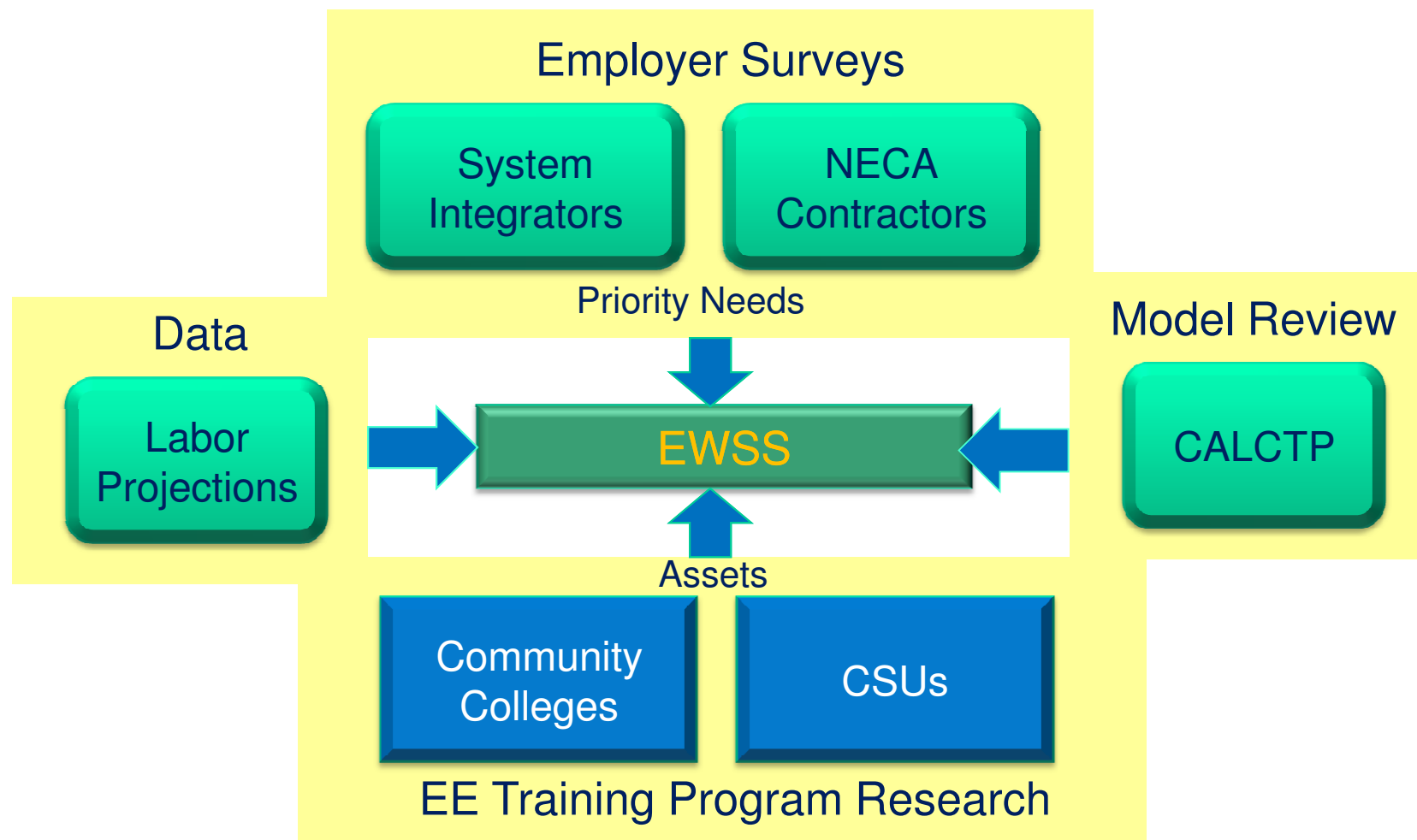
# Financial Drivers

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
Energy Program Investment Charge (EPIC - CPUC & CEC)	\$162M	Allocates funding for research, demonstration projects, and market facilitation
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

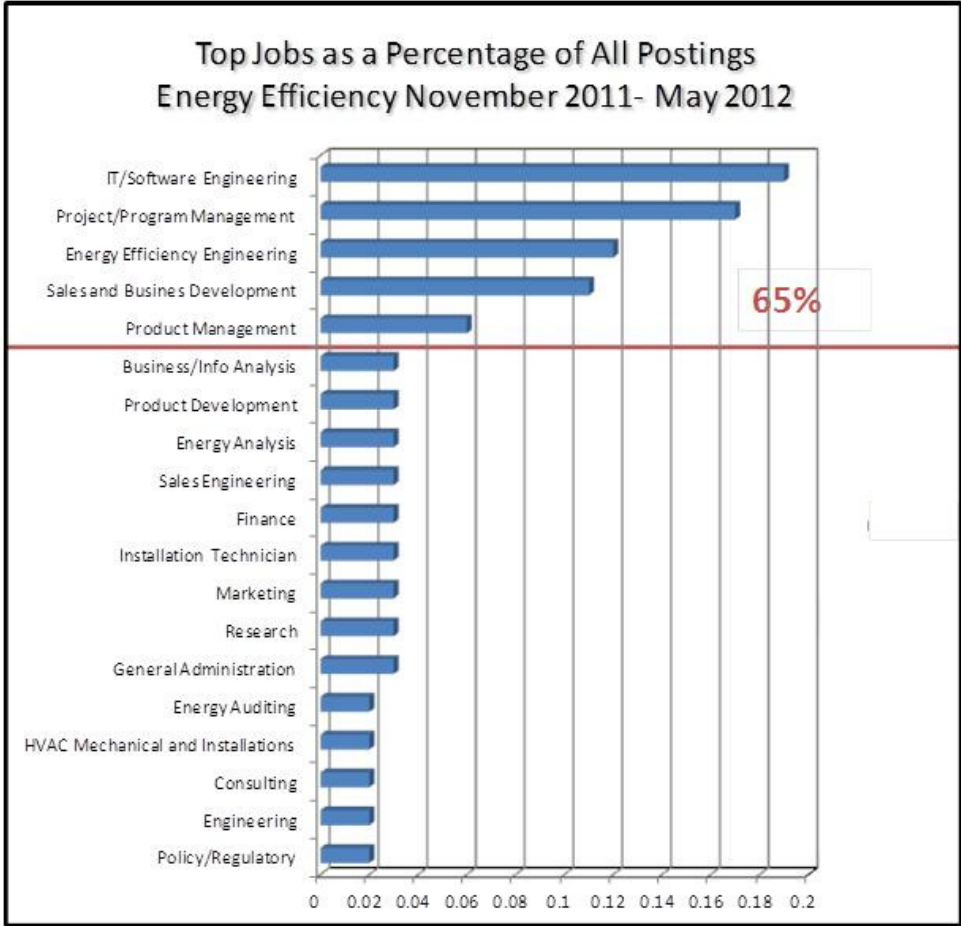
## Annual Job Openings in PG&E Service Area 2012 - 2016

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

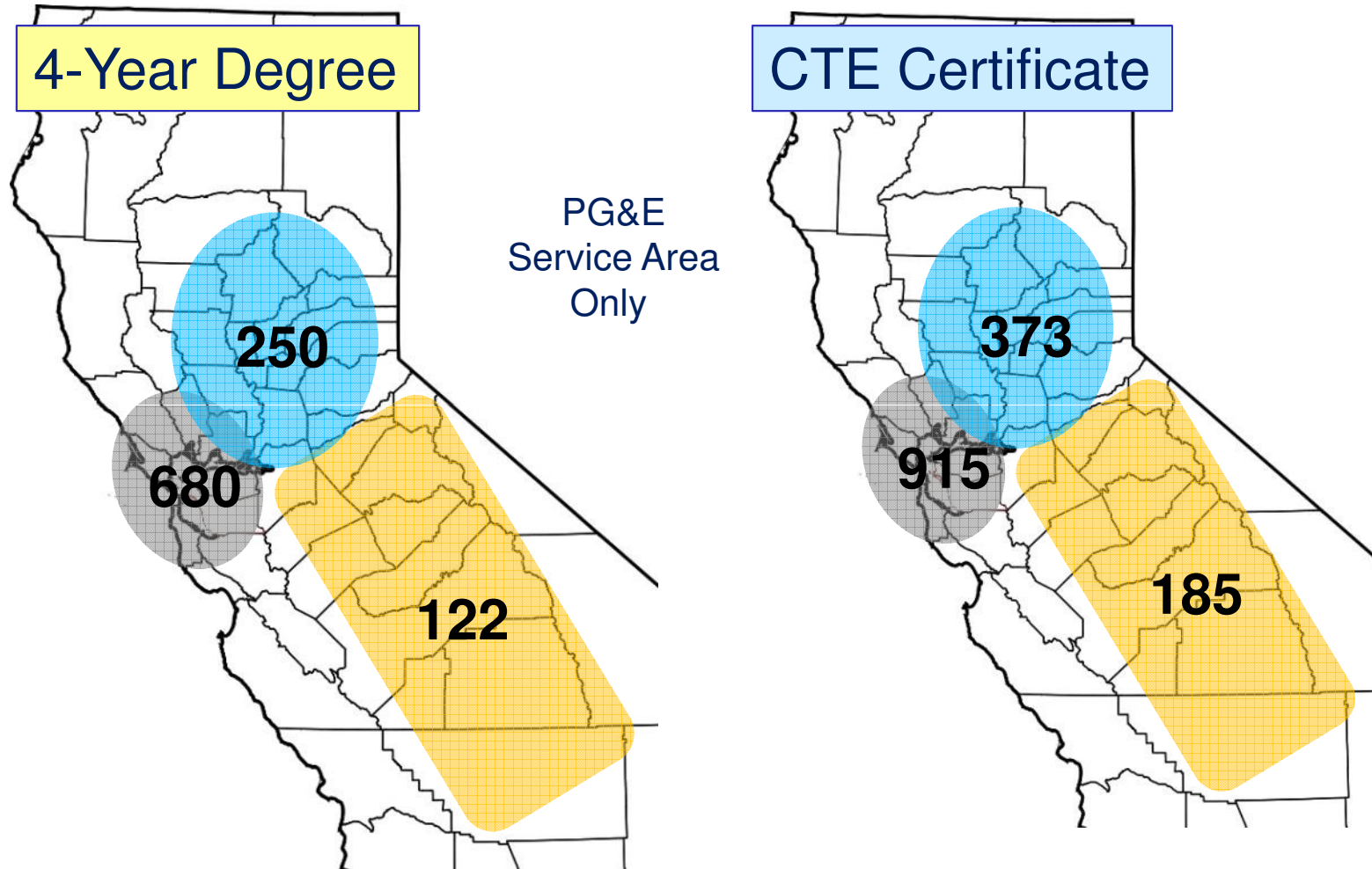
# Near-Term Needs



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*

## San Francisco City

- Architecture
- General Construction
- Electricians
- Energy/HVAC Technology

## Laney College

- Energy/HVAC Technology
- Architecture
- General Construction
- Carpentry

## West Valley College

- Architecture

## Foothill College

- Electricians
- Energy/HVAC Technology

## Hartnell College

- General Construction
- Carpentry

## Butte College

- General Construction

## Cosumnes River College

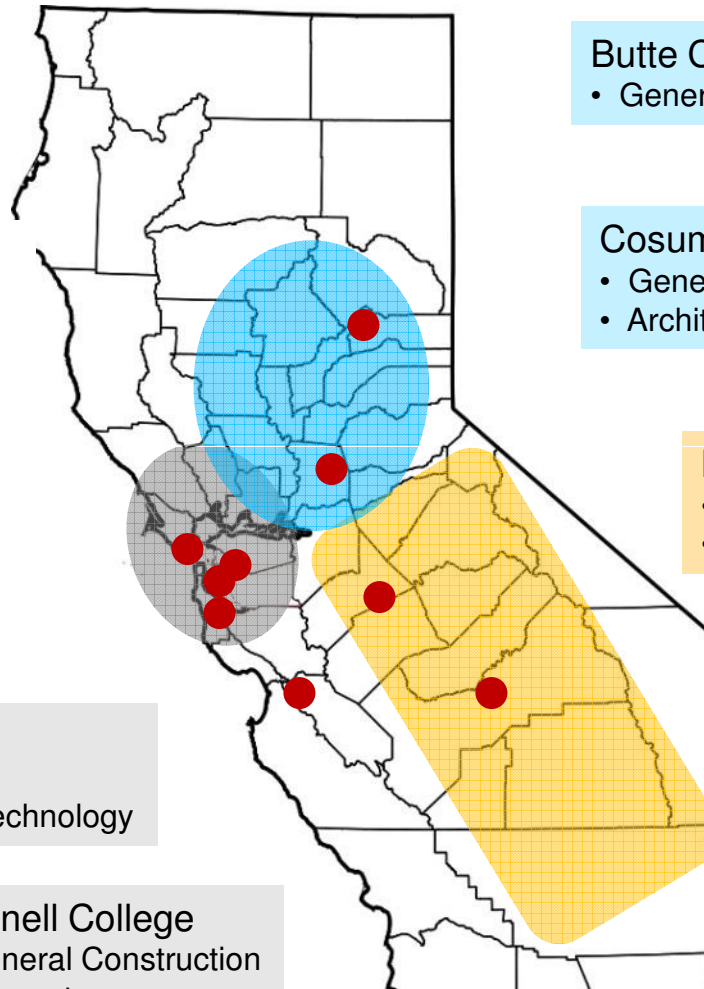
- General Construction
- Architecture

## Modesto Junior College

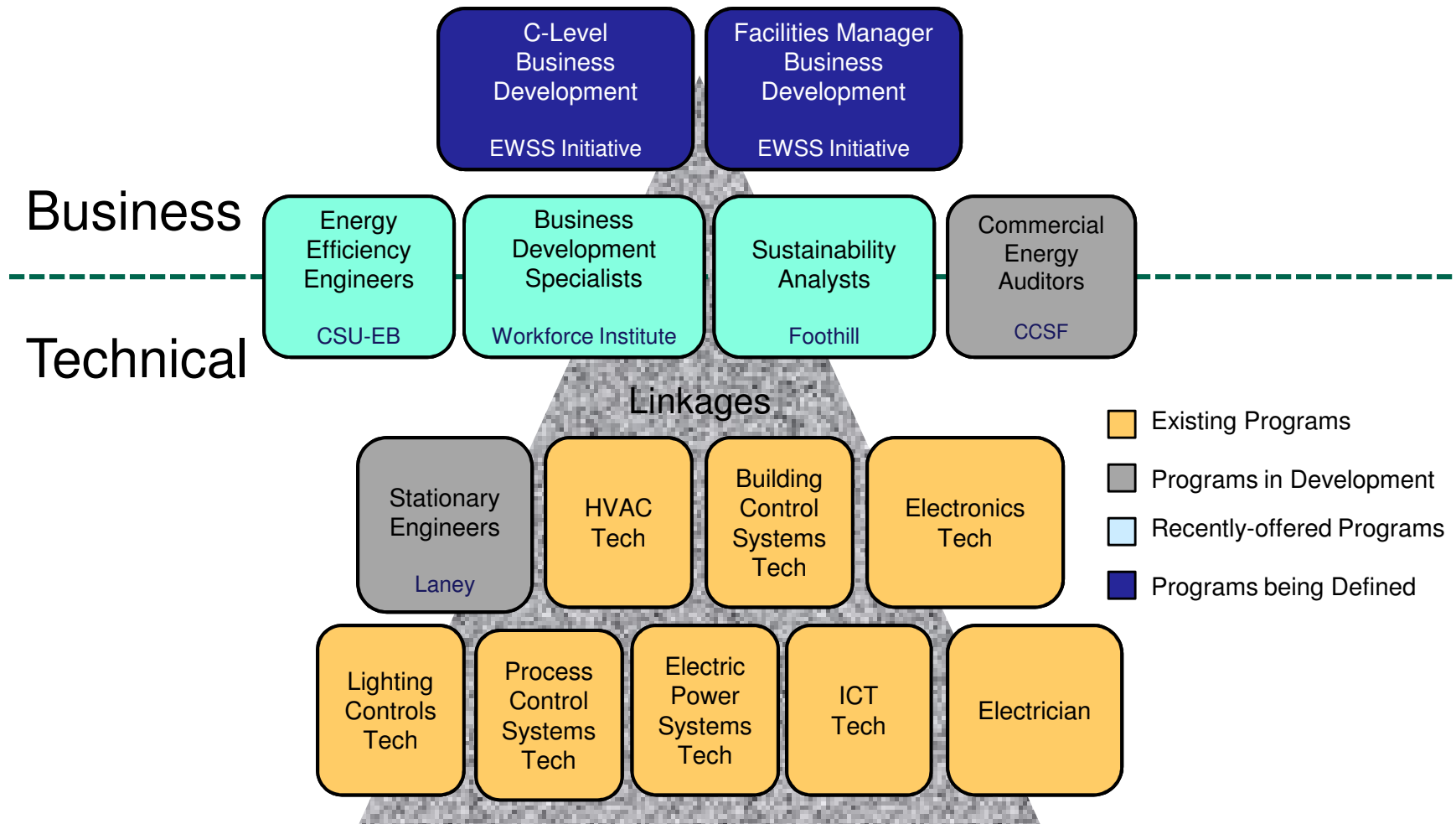
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- Architecture

## Fresno City College

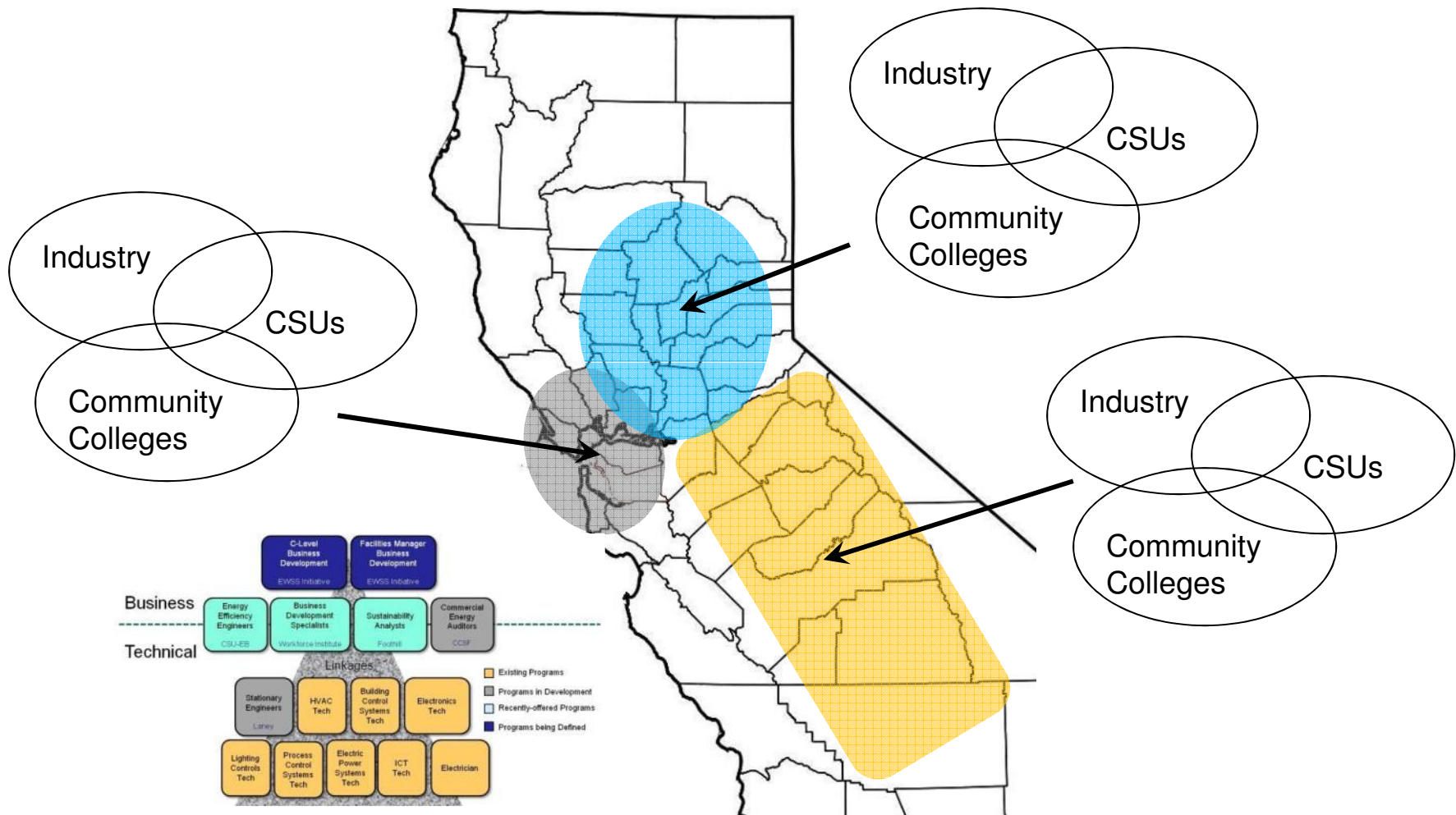
- General Construction
- Architecture
- Energy/HVAC Technology



# 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



## Professional Categories

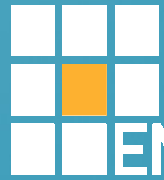
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Economic Modeling Specialists Inc., 2012





# 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 Employer 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

[Home](#)

[About](#)

[News](#)

[Employers](#)

[Portal Resources](#)

[Training Resources](#)

[Industry Resources](#)

[Contact](#)



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



SACRAMENTO STATE

My Sac State Contact Directories

Go

ABOUT ACADEMICS ADMISSIONS ATHLETICS MAKE A GIFT

QUICK LINKS

## DEPARTMENT OF CIVIL ENGINEERING

# DEPARTMENT OF CIVIL ENGINEERING

Celebrating **50** Years of Excellence!

### Civil Engineering Home

- Mission Statement
- What is Civil Engineering?
- Why Sacramento State?
- CE Connection Newsletter
- Academic Programs
- Student Resources
- Faculty & Staff
- Employment Opportunities
- Advisory Committees
- Industry Sponsors
- Individual Support
- Support The Department
- Contact Us
- More

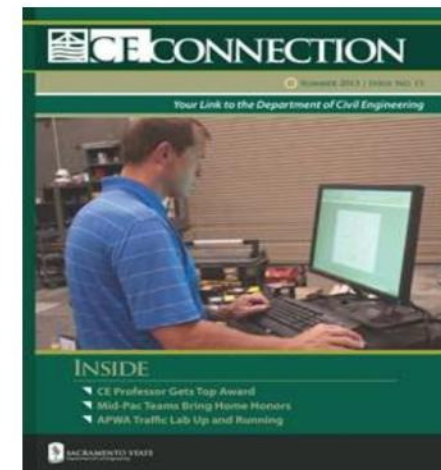
### WELCOME TO THE DEPARTMENT OF CIVIL ENGINEERING AT SACRAMENTO STATE!

At Sacramento State, courses of study lead to Bachelor of Science (B.S.) and Master of Science (M.S.) degrees in Civil Engineering. The program is accredited by the national engineering program accreditation agency, ABET, and graduates are prepared to enter the profession as civil engineers.

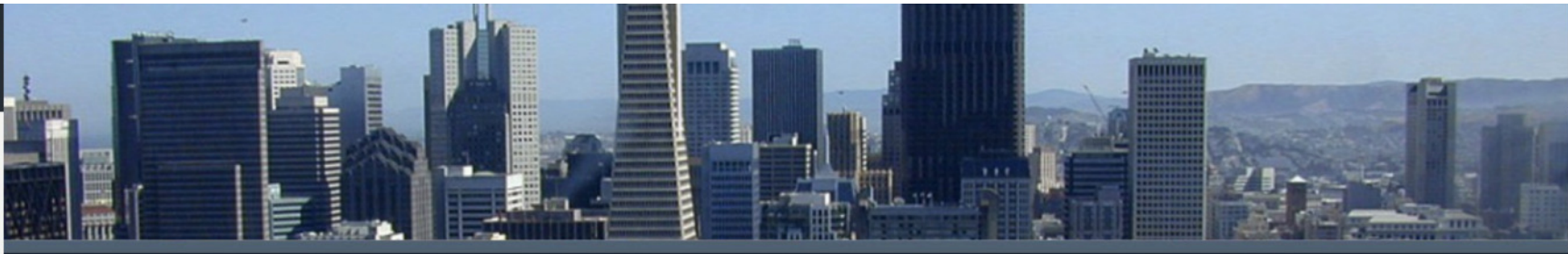
The programs feature close contact between faculty and students and offer an education that prepares students for the challenges they will face in the engineering profession. Students at Sacramento State build upon a solid background in math and science and are provided with an understanding of all core disciplines of civil engineering. In addition, students can choose areas of interest for their elective courses for more in depth study in a particular discipline if desired.

### News and Events

- [Dr. Fell scheduled to speak at free community STEM Lecture - Sept 26 at 6 pm](#) (Center for STEM Excellence)
- [Sacramento State Engineering Ranks #17 Nationally in Return-On-Investment](#) (Affordable Colleges Online)







## Northern Region College Programs

Click on a Northern Region college to see all the programs, majors, and candidates 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.

**Butte College**



**Construction & Building Inspectors**

**Chico State University**



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

**Cosumnes River College**



**Architects**  
**Construction Managers, Supervisors**

**Sacramento State**



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



## Sacramento State

Located in the capital of the nation's most populous and diverse state, [California State University, Sacramento](#) is dedicated to advancing the many social, economic, political, and scientific issues affecting the region and the state. The University's curricular and co-curricular programs continue to focus on these issues through undergraduate and post-baccalaureate programs that prepare graduates for successful careers. Sacramento State is home to the [California Smart Grid Center \(CSGC\)](#). The CSGC is dedicated to improving the state's electric grid by performing various research projects to train workers, inform the public, and collaborate with utilities.

### Career Center 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 budge 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.

##### Mechanical Engineer

#### Program Information

- **BS in Civil Engineering (Curriculum Flowchart)**
- **MS in Civil Engineering (Concentrations in Environmental, Geotechnical, Structural, Transportation, or Water Resources Engineering)**

Additional information including courses, prerequisites, and contact information at the [Department of Civil Engineering](#) web site.

#### Department of Construction Management

- **BS in Electrical & Electronic Engineering**
- **MS in Electrical & Electronic Engineering**

Additional information including courses, prerequisites, and contact information at the [Department of Electrical & Electronic Engineering](#) web site.

- **BS in Mechanical Engineering (Course**

## § CAREER CENTER



PEMSA DIVISION — Where Students Come First

- Career Center Home
- About Us
- Students
- Students By Major
- Employers
- Alumni And Community Services
- Faculty And Staff
- Community Services
- Events Calendar
- Office Of The Senior Vice President For Planning, Enrollment Managment & Student Affairs
- First Year Experience And Learning Communities

§ CONTACT US  
Lesson Hall 1013

### EXPLORE

Explore career options and how to implement an effective strategy to attain your desired career.



STUDENTS

EMPLOYERS

CAREER PLANNING  
PROCESS

SERVICES

### § FALL 2013 EVENTS

#### Resume Makeover and Speed Interviews

September 17, 2013 / Noon - 3 pm / University Union Ballroom

#### Career Fair

September 25, 2013 / 10 am - 2 pm / University Union Ballroom

#### FBI & CIA Information Session

October 7, 2013 / 4:30 - 6:30 pm / University Union Redwood Room

### § PROGRAMS & RESOURCES

#### Capital Fellows Programs

#### Career Connection

Career Connection is Sacramento State Career Center's online job board. Register today or log-in to search for part-time, full-time, volunteer, internship positions, and much more!



# Cosumnes River College

As an institution serving a diverse community, **Cosumnes River College** strives to support student success, promote educational equity, and offer programs that empower students to contribute to a just and democratic society as global citizens. CRC provides students with access to high-quality services that enhance their learning and facilitate their transition to careers or further their educational opportunities. CRC's instructional programs meet the changing needs of industry and the economy, as well as provide multiple opportunities for student learning outside the classroom.

## Career Center Contact Info for Employers

### Jobs

#### Architect

Architects plan and design structures, such as private residences, office buildings, theaters, factories, and other structural property.

#### Construction Manager, Supervisor

Construction Managers and subordinate supervisory personnel plan, direct, coordinate, or budge 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.

### Program Information

#### AS in Architecture

- **Certificate of Achievement (Architectural Technology)**
- **Certificate of Proficiency (Green Buildings: Environmental Design, Energy Management and Performance Based Construction)**

Additional information including courses, prerequisites, and contact information at the [Department of Architecture](#) web site.

- **AS in Construction Management Technology (32-33 units in discipline; 60 total for degree)**
- **Certificate of Achievement in Construction Management Technology (23 units)**

Additional information including courses, prerequisites, and contact information at the [Construction Management Technology Program](#) catalog.



# COLLEGE CATALOG 2013-14

## COLLEGE CATALOG HOME

General Information  
Academic Programs of Study  
Download  
PSLO

Home > Table of Contents > Academic Programs of Study > Construction Management Technology > Certificates

## CONSTRUCTION MANAGEMENT TECHNOLOGY

Degrees Certificates Course Descriptions

### Certificates

#### CERTIFICATE OF ACHIEVEMENT Construction Management Technology

Code #1080

This program prepares students for entry into the building and construction industry as a general tradesperson; and prepares students currently working within the industry for advancement.

REQUIRED PROGRAM	UNITS
ADT 310 Architectural Computer-Aided Drawing I	3
CISC 302 or JOUR 330 Computer Familiarization	2
CMT 112 Construction Estimating	3
CMT 120 Legal Aspects of Construction	3
CMT 134 Construction Scheduling and Critical Path Method	3
CMT 300 Introduction to Construction Plans and Specifications or BIT 102 Reading and Non-Structural Plan Review	3
CMT 310 Materials of Construction	3
CMT 313 Computer Estimating for Construction	3
<b>TOTAL UNITS REQUIRED</b>	<b>23</b>

**COLLEGE CATALOG HOME**

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- PSLO

# CONSTRUCTION MANAGEMENT TECHNOLOGY

- Degrees
- Certificates
- Course Descriptions

## Construction Management Tech Course Descriptions

### **CMT 102**

#### **Introduction to Construction Practices**

2 Units

*Prerequisite: None*

*Hours: 36 hours LEC; 18 hours LAB*

This course is an introduction to construction practices and the construction trades with an emphasis on safe working procedures along with proper use of tools and equipment. Students who have received credit for CONST 102 will not receive credit for CMT 102. See Cross-Referenced Courses in the catalog.

### **CMT 112**

#### **Construction Estimating**

3 Units

*Prerequisite: None.*

*Advisory: CMT 310*

*Hours: 54 hours LEC*

This course covers construction quantity survey and estimating practices for residential, light commercial and green building projects.

### **CMT 120**

#### **Legal Aspects of Construction**

3 Units

*Prerequisite: None.*

*Hours: 54 hours LEC*

This course is a summary of the legal implications of licensing, contracts, specifications and their interpretations. Emphasis on the laws of liability, workers compensation, social security, Cal-OSHA, lien laws, and federal laws affecting construction and compliance problems.

### **CMT 134**

#### **Construction Scheduling and Critical Path Method**

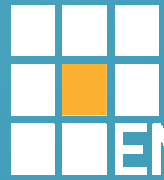
3 Units

*Prerequisite: None.*

# 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](mailto:webmaster@eesectorstrategy.com)



# ENERGY WORKFORCE **SECTOR STRATEGY**



## Open Discussion

# Given These Drivers ....

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# And This Workforce Growth Pattern ...



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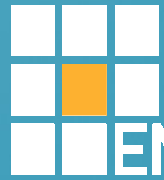
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Economic Modeling Specialists Inc., 2012

# 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

Lisa Shell, PG&E Workforce Development, Team Leader  
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916-397-6410, jd@empoweradvisors.com

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

[www.EESectorStrategy.com](http://www.EESectorStrategy.com)