COLLEGE OF THE CANYONS
Santa Clarita Community College District
26455 Rockwell Canyon, Santa Clarita, CA  91355

Office of Institutional Development and Technology

Insurance Certificate Program
Needs Assessment – Spring 2009

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May 2009
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**Introduction**

The Office of Institutional Development and Technology and the Vice President of Academic Affairs, facilitated an insurance program meeting with representatives from the insurance industry and obtained labor market data from Economic Modeling Specialists, Inc. (EMSI) as part of the needs assessment for the College’s new insurance certificate program in the Spring 2009 semester. The California Community College Chancellor’s Office requires community colleges to gather information from industry representatives when conducting needs assessments for new programs. The focus group was intended to assess the entry-level insurance graduate needs within the insurance industry and to obtain additional information necessary for informing decisions for the insurance certificate program. This needs assessment intended to answer questions in three areas:

1. **Employment Projections from EMSI:**
   - Average number of job openings (both new and replacement) for insurance sales agents and customer service representatives annually for the next five years.
   - Number of new and replacement customer service representative and insurance sales agent jobs expected by 2012.

2. **Salary from EMSI:**
   - *Median Hourly Earnings* for customer service representatives and insurance sales agents.

3. **Industry Needs from Focus Group with Insurance Industry Representatives:**
   - What are the employment needs for the insurance industry in the Santa Clarita Valley?
   - What knowledge and / or skills valued most by insurance industry representatives need to be incorporated into the insurance certificate program at College of the Canyons?

The resulting information is intended to be used to inform decisions regarding the development and offering of an insurance certificate program at College of the Canyons. In addition, the information will be used to complete the application packet required by the South Central Regional Consortium.
Methods

Seven insurance representatives from three private and two national firms attended an insurance program meeting on April 21, 2009 at College of the Canyons. The purpose of this meeting was to obtain information on the employee needs for the insurance industry within the District’s service area and to get input on the knowledge and skills needed for graduates of an insurance certificate program. Representatives reviewed the sample curriculum and provided input on curriculum that should be omitted and courses that need to be included in the certificate program.

Labor market data including employment projections and median hourly earnings were obtained from the Economic Modeling Specialists, Inc. (EMSI).

To perform the analyses, data were analyzed using Excel (2007).
Results

Employment Projections and Salary from EMSI. The first area of inquiry was related to the employment demand and salaries for insurance agents/brokers and customer service representatives. Specifically, employment demand and salary information was obtained by asking the following questions:

- What is the average number of job openings (both new and replacement) projected annually for the next five years for insurance agents/brokers and customer service representatives?
- What is the total number of jobs (both new and replacement) for insurance agents/brokers and customer service representatives projected by 2012?
- What are the median hourly earnings for insurance agents/brokers and customer sales representatives?

Employment Projections. The total number of new and replacement jobs expected over the next five years in the Santa Clarita Community College District service area is 272 customer service representatives and 42 insurance sales agents. The average annual openings expected in 2007-2012 are 54 customer service representatives and 8 insurance sales agents according to EMSI data.

Median Hourly Earnings. According to EMSI, the median hourly earnings for customer service representatives and insurance sales agents are $16.53 and $22.02, respectively.

Focus Group Input from Insurance Industry Representatives

Employment Needs. Industry representatives present at the focus group indicated that the types of employees they need include insurance agents/brokers, sales persons (a.k.a. producers or solicitors), and customer service representatives.

Exam Preparation. Graduates of the insurance certificate program at College of the Canyons need to be prepared to take the Life / Health and Property & Casualty exams. Focus group representatives indicated that these two exams are needed for agents/brokers in the industry.

Advanced Training. After basic insurance training, agents might pursue Life Underwriting Training Council (LUTC), Chartered Life Underwriter (CLU), and Chartered Financial Consultant (ChFC) certifications from The American College. A lower division program
would be well served to prepare students for these advanced programs. If possible, articulation agreements in which the lower division courses can be counted towards the requirements would be desirable.

There is an increasing overlap with financial products. Insurance agents in advanced training may become Certified Financial Planners (CFPs), with Series 6 (mutual funds and annuities) and Series 7 (stocks) licenses as well as a real estate license.

Other advanced certificate programs include Registered Financial Consultant (RFC), Registered Employee Benefits (REBS), and Certified Risk Manager (CRM).

Curriculum Needs. The insurance representatives who participated in the focus group reviewed sample curriculum for the insurance certificate program. Based on their input, the curriculum for College of the Canyons insurance certificate program should be modified as follows:

Deletions:

- BUS-174: Principles of Property and Liability Insurance should be deleted.

 Modifications:

- BUS-176: Personal Insurance should be split into two courses: 1) Life/Health/Disability and 2) Property/Casualty.
- BUS-178: Commercial Insurance should be split into two courses. One course could cover advanced life and health topics focused on business needs. The other could focus on employee benefits including annuities, and unqualified and qualified deferred compensation.
- The Small Business Management class should be an elective.
- Bus-201 (Principles of Accounting I), BUS-211 (Business Law), BUS-100 (Introduction to Business), CIT-101 (Introduction to Computers), CIT-116 (Business Communications), CIT-155 (Microsoft Excel I), and CWEXP-188 should be electives.

Additions:

- An additional course should be developed for insurance sales techniques. This could be a primer for LUTC.
- Consider adding a goal setting component in one of the courses (possible sales course).
Other Suggestions:

- It would be extremely helpful if the BUS-179 (Insurance Code and Ethics) course could meet the state’s 12 hour requirement for Business Ethics.

- There is a need for a basic insurance program, focusing on producers. This program could be expanded to include customer service and other training needs of Home Offices (like Mercury locally).

- Internship opportunities should be incorporated.

Employment Needs:

Specific needs expressed by focus group representatives included producers and agents. Specifically, one private firm needs producers in four to five different areas. One national firm has needs for agents and generally looks for agents with a bachelor’s degree. This national firm also indicated that they are asking agents to pursue financial products and CFP licensures.

Other information provided with regards to the industry was that with some brokerages, people increasingly work with teams, with each member specializing in specific areas. There might be several representatives and a single agent on the team.
**Recommendations**

Generally, there is a need for the insurance certificate program. Upon review of the data from EMSI and input gathered from the focus group with insurance representatives, the following recommendations should be taken into consideration for the insurance certificate program at College of the Canyons:

- The College should consider starting with the basic insurance program, focusing on producers. Then, the College can branch out into other areas, including customer service, and address other needs of Home Offices (like Mercury locally).

- The suggestions made by insurance representatives for the insurance certificate curriculum should be taken into consideration. Specifically, the following suggestions should be considered:
  - Delete BUS-174;
  - Split BUS-176 into two courses focusing on Life/Health/Disability and Property & Casualty in separate courses;
  - Split BUS-178 into two courses focusing on advanced life and health topics focused on business needs and employee benefits in separate courses;
  - Add a course focused on insurance sales techniques;
  - Add a goal setting component to one of the courses (possibly the sales course);
  - Small Business Management, Bus-201 (Principles of Accounting I), BUS-211 (Business Law), BUS-100 (Introduction to Business), CIT-101 (Introduction to Computers), CIT-116 (Business Communications), CIT-155 (Microsoft Excel I), and CWEXP-188 should not be required but can be included as electives;
  - Work with the State to see if BUS-179 (Insurance Code and Ethics) course could meet the state’s 12 hour requirement for Business Ethics.
**Action Implications**

- Adjustments to the Insurance Certificate curriculum will be made as recommended. Specific adjustments include:
  - Deleting BUS-174;
  - Splitting BUS-176 into two courses focusing on Life/Health/Disability and Property & Casualty in separate courses;
  - Splitting BUS-178 into two courses focusing on advanced life and health topics focused on business needs and employee benefits in separate courses;
  - Adding a course focused on insurance sales techniques;
  - Adding a goal setting component to one of the courses (possibly the sales course);
  - Offer Small Business Management, Bus-201 (Principles of Accounting I), BUS-211 (Business Law), BUS-100 (Introduction to Business), CIT-101 (Introduction to Computers), CIT-116 (Business Communications), CIT-155 (Microsoft Excel I), and CWEXP-188 as electives and not required courses;
  - Work with the State to see if BUS-179 (Insurance Code and Ethics) course could meet the state’s 12 hour requirement for Business Ethics.

- The Office of Academic Affairs will make further adjustments to the curriculum based on conversations with American College to integrate their Life Underwriter Training Council Fellow (LUTCF) and Financial Services Specialist (FSS) programs with College of the Canyons’ Insurance Certificate program.
Plumbing Program Needs Assessment – Fall 2009

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October 2009
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Introduction

The Office of Institutional Development and Technology and the Founding Dean of the Canyon Country Campus, with input from the Associate Vice President of Academic Affairs, facilitated a plumbing program focus group with representatives from the plumbing industry as part of the needs assessment for the College’s new plumbing program. In addition, labor market data was obtained from Economic Modeling Specialists, Inc. (EMSI) to assess the labor market demand and wages for the plumbing industry in the Santa Clarita Valley. The California Community College Chancellor’s Office requires community colleges to gather information from industry representatives when conducting needs assessments for new programs. The focus group was intended to assess the entry-level skills needed by entry-level plumbers and to obtain additional information necessary for informing decisions for the plumbing program. This needs assessment intended to answer questions in three areas:

1. **Employment Projections:**
   - What is the average number of job openings (both new and replacement) for plumbers annually for the next five years?
   - What are the numbers of new and replacement plumber jobs expected by 2012?

2. **Salary:**
   - What is the median hourly wage for plumbers?

3. **Knowledge and Skill Sets Needed in the Plumbing Industry:**
   - What knowledge and / or skills valued most by plumbing industry representatives need to be incorporated into the plumbing program at College of the Canyons?

The resulting information is intended to be used to inform decisions regarding the development and offering of a plumbing program at College of the Canyons. In addition, the information will be used to complete the application packet required by the South Central Regional Consortium.
Methods

Four representatives from local plumbing companies attended a plumbing program focus group on September 22, 2009 at College of the Canyons’ Canyon Country Campus. The purpose of this meeting was to obtain information on the employee needs for the plumbing industry within the District’s service area and to get input on the knowledge and skills needed for graduates of a plumbing program. Representatives reviewed the sample curriculum and provided input on curriculum that should be omitted and courses that need to be included in the program.

Labor market data including employment projections and median hourly earnings were obtained from the Economic Modeling Specialists, Inc. (EMSI).

To perform the analyses, data were analyzed using Excel (2007).
**Results**

**Employment Projections and Salary.** The first area of inquiry was related to the employment demand and salaries for plumbers. Specifically, employment demand and salary information was obtained by asking the following questions:

- What is the average number of job openings (both new and replacement) projected annually for the next five years for plumbers?
- What are the total numbers of jobs (both new and replacement) for plumbers projected by 2012?
- What are the median hourly earnings for plumbers?

**Employment Projections.** The total number of new and replacement jobs expected over the next five years in the Santa Clarita Community College District service area is 122 plumbers. The average annual openings expected in 2007-2012 are 24 plumbers according to EMSI data. One representative from the plumbing industry indicated that he could hire 2 to 3 plumbers a year.

**Median Hourly Earnings.** According to EMSI, the median hourly wage for plumbers is $21.35.

**Focus Group Input from Insurance Industry Representatives**

**Employment Needs.** Industry representatives present at the focus group indicated that the types of employees they need are service plumbers but encouraged the College to consider a general plumbing program with two tracks: 1) Service Plumbing and 2) New Construction.

**Exam Preparation.** Graduates of the plumbing certificate program at College of the Canyons do not need to take any specific license exam to work in the Santa Clarita Valley. For example, only 3 or 4 out of 10 plumbers at one local plumbing company represented at the meeting have a license. Licenses may be required to work in other cities outside of the Santa Clarita Valley.

**Curriculum Needs.** The plumbing representatives who participated in the focus group reviewed sample curriculum for the plumbing program. Participants suggested that the program begin with two or three common courses designed to provide an overview of the plumbing profession. Upon completion, students can then choose the service or new construction concentrations. Based on their input, the curriculum for College of the Canyons plumbing program should be modified as follows:
General Plumbing Curriculum: Focus group participants expressed the need for a short-term, intensive program that would prepare students for work after one or two semesters. General plumbing knowledge and program needs include the following:

- Hands-on training, especially early in the program is needed. One participant expressed an interest in being able to notify instructors of jobs that they could invite students to observe.
- Plumbing overview is good but use caution with how curriculum is presented. The program needs to recruit men and women into the profession but the presentation of Los Angeles Trade Tech College’s (LATTC) curriculum might discourage the type of plumbers needed in the Santa Clarita Valley.
- Internship and job shadow opportunities should be incorporated. This should include having students report out on their internship and job shadowing experiences.
- The program should coordinate internship opportunities with the CWEE program.
- Guest lectures by local plumbers to share stories, common problems, “tricks of the trade” and other relevant lectures regarding the plumbing industry should be incorporated on a regular basis.
- Guest lecturers should also include presentations from building inspectors.
- Field trips to local plumbing supply companies (e.g., Fergusons) should be incorporated.
- Customer service training should be incorporated into the certificate program.

Service Plumbing Curriculum Needs:

- Service Plumbing in the Santa Clarita Valley needs quality men and women and does not have the same needs as other areas, which have plumbers’ unions.
- LATTC Plumbing 111, 112 focuses on new construction and does not address the service area.
- Troubleshooting basics.
- Customer service training should be included in the curriculum.
- Knowledge of cast iron does not need to be included for service plumbing. Most uses of cast iron are in commercial applications. However, there is not much use.
- Knowledge of building and city codes should be included. For example, The City of Santa Clarita allows ABS in certain commercial applications (e.g., McDonalds), especially when soda is used.
- Incorporate the safety and tool information at the end of Plumbing 111 into the Service Plumbing curriculum.

- Need to build in knowledge of common issues that service plumbers encounter in a more explicit way. Examples include the following:
  - Knowledge of where a cut needs to be made on a repair.
  - Knowledge of pipe sizing.
  - History of the plumbing industry, especially changes in the Santa Clarita Valley and changes in materials (e.g., rolled copper and Korean galvanized piping).
  - Knowledge of drainage types needs to be included in the curriculum (e.g., septic and sewer).
  - Knowledge of pressure pipes versus sewer pipes.
  - Knowledge of backhoes, graders and DigAlert should be included. Companies can get fined up to $70,000 from OSHA if they do not have a competent person operating a backhoe. Most companies have backhoes.
  - Knowledge of septic tanks and related issues.
  - Diagnosis and repair of slab leaks needs.
  - Diagnosis and repair of pressure and volume problems (e.g., Friendly Valley).
  - Diagnosis, installation and repair of toilets.
  - Diagnosis, installation and repair of water heaters.
  - Diagnosis, installation and repair of house leaks.
  - Detection and treatment of mildew / mold.
  - Changing faucets and stems (e.g., knowing who manufactured the faucet).
  - Address aspects of customer retention that are important to the plumbing service area (e.g., knowledge of what is under warranty).
  - Inventory and organization skills such as tracking and storing parts.
  - Knowledge of proper care of tools and equipment.
  - Knowledge of and ability to solder copper using propane, including “sweating a joint and wiping it.”
  - Knowledge of trench lists and lining sewer lines.
Equipment:

- The College should explore ways to familiarize students with the service truck. Participants suggested asking local plumbing companies to bring their trucks to campus as an instructional tool.
- Obtain tools used by local plumbing companies for students to use in the program.
- The training building should replicate plumbing jobs so students get some initial experience and knowledge before going into the field, but most of the training should happen on the job site through the internship component.
- The College should consider inviting local plumbing supply companies to present the current equipment being used in the plumbing industry.
- Care and maintenance of tools needs to be incorporated in the training.

Other Training Needs:

- Reading and writing skills are essential to the plumbing service area. For example, service plumbers need to be able to write up the service invoice, including good penmanship and spelling. Also, they need to be able to read a map so they can locate the job site.
- Knowledge of basic math is needed, especially fractions. For example, service plumbers need to be able to read a tape measure.
- Communication and English skills are critical elements to include. Service plumbers need to be able communicate their diagnosis and repairs in layman terms.
- Code of conduct on the job site, such as appearance needs to be included.
- Graduates of the program need to know that right out of the program they are mostly going to be doing “grunt work” and need to understand hierarchy on the job site.
- Knowledge of PEX piping should be included (e.g., knowledge of tools used to repair it and how to repair it). There are companies that can be brought in to train students on this topic.
- Knowledge of current tools and applications should be included (e.g., Shark Bite)
- Subscription to trade magazines is needed to stay abreast of the new products coming out in the plumbing industry.
- Consider developing chunks of topics on equipment and knowledge sets needed such as drain cleaning (e.g., camera, public/private, hydrojetting, and snake); diagnosing blockages; and plumbing issues related post-tensioned concrete slabs).
**Recommendations**

Generally, there is a need for a short-term, intensive plumbing program with the option for students to specialize in Service and/or New Construction upon completion of the introductory program. Upon review of the data from EMSI and input gathered from the focus group with plumbing industry representatives, the following recommendations should be taken into consideration for the plumbing program at College of the Canyons:

- The College should consider starting with a short-term, intensive plumbing program that would cover basic knowledge and skills needed for entry-level employment in the plumbing industry. Then, the College can branch out into other areas, including service and new construction.

- The College should consider using courses in other departments to augment the plumbing program (e.g., English and Construction Management-building codes, city codes and blueprint reading).

- The suggestions made by plumbing industry representatives for the plumbing curriculum should be taken into consideration. Specifically, the following suggestions should be considered:
  - Embed hands-on training within the training.
  - Provide internship and job-shadow opportunities for students.
  - Coordinate internship opportunities with the CWEE program.
  - Incorporate guest lecturers from local plumbers and plumbing companies into the program.
  - Incorporate field trips to local plumbing supply companies into the program.
  - Incorporate customer service training.
  - Incorporate code of conduct on the job site into the program.
  - Include troubleshooting basics in the curriculum.
  - Include safety training, including proper use of tools.
  - Address common issues encountered by service plumbers such as:
    - Where cuts need to be made on a repair job,
    - Pipe sizing,
- History of the plumbing industry, especially changes in the Santa Clarita Valley and changes in materials,
- Drain types,
- Pressure pipes versus sewer pipes,
- Backhoes, graders and DigAlert,
- Slab leak diagnosis and repair,
- Pressure and volume problem diagnostics and repairs,
- Diagnosis, installation and repair of toilets, water heaters and house leaks.
- Identification of product warranties,
- Proper care of tools and equipment,
- Trench lists and lining sewer lines,
- Post-tension slabs,
- Soldering copper, and
- Current tools and applications.
**Action Implications**

Upon review of the focus group comments, the following recommendations should be taken into consideration:

**Recommendation:**
The College should consider starting with short-term, intensive plumbing program that would cover basic knowledge and skills needed for entry-level employment in the plumbing industry. Then, the College can branch out into other areas, including service and new construction.

**Action Implication:**
- The College secured the services of Mr. Peter Bellas, former CACT Director, to develop a two-track, intensive plumbing program (see attached). The Certificate of Achievement consists of 12 core units, plus 1 unit of Cooperative Work Experience Education. There are two areas of specialization following completion of the core 12 units: Construction Specialization (4 units) or Service & Repair Specialization (4 units).

**Recommendation:**
The College should consider using courses in other departments to augment the plumbing program.

**Action Implication:**
- Two courses in the proposed program are from other departments: CONST 122 Plumbing Codes (3 units) and ARCHT 140 (Materials and Methods of Construction (3 units). These courses, when added to two new courses for the Plumbing Program, made up the core classes in the program. Two additional new classes form the two areas of specialization.

**Recommendation:**
The College should consider the recommendations of plumbing industry representatives.

**Action Implication:**
- All suggestions made by the plumbing industry listed on pages 9-10 of the Ad Hoc Report are included in the courses in the plumbing program.
- The course outlines now need to be formatted and submitted to the College of the Canyons Curriculum Committee for approval. The course outlines were submitted to the Associate Vice President of Academic Affairs in March 2010.
Plumbing Technology Certificate of Achievement - 18 units

**Construction Specialization**

- **Construction Practices & Installation (4)**
  - Installing, fabricating & testing of fixtures & accessories, both residential & commercial
  - Plan Interpretation & Application
  - Plumbing Specifications
  - (Lecture/Lab)

**Co-listed**

- **CONST 122**
  - Plumbing codes (3)
  - Introduces to the Uniform Plumbing code. Review of provisions of the Code and interpretation of construction documents, construction and inspection procedures (Lecture)

**Principles & Practices (3)**

- **Codes & Blueprints**
  - Fixtures & Appliances
  - Sizing, Flow & Mechanics Measurements & Calculations (Lecture/Lab)

**Co-listed**

- **ARCHT 140**
  - Materials and Methods of Construction (3)
  - Introduces principles, materials, methods, and processes of construction. Combines both theory and practical application (Lecture)

**Service & Repair Specialization**

- **Plumbing Service & Repair (4)**
  - Servicing, repair & replacement of plumbing fixtures & appliances
  - Repair & replacement of pressure & non-pressure piping systems
  - Customer Relations (Lecture/Lab)

**CWEE (1)**

- Cooperative Work Experience Education (Internship)
COLLEGE OF THE CANYONS
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Office of Institutional Development and Technology

Needs Assessments for the Solar Panel Installer and Energy Management Programs – Fall 2010

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February 2011
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## Tables

Table 1. Projected Job Openings in “Green” Technology Related Occupations and Median Hourly Earnings ......................................................................................................................... 7
Introduction

The Office of Institutional Development and Technology and the Dean of Career Technical Education, with input from a consultant in the solar industry, facilitated a solar panel installer and energy management program focus group with representatives from the solar industry as part of the needs assessment for the College’s new solar panel installer and energy management programs. In addition, labor market data was obtained from Economic Modeling Specialists, Inc. (EMSI) to assess the labor market demand and wages for the solar and energy management industries in the Santa Clarita Valley. The California Community College Chancellor’s Office requires community colleges to gather information from industry representatives when conducting needs assessments for new programs. The focus group was intended to assess the entry-level skills needed by entry-level solar panel installers and energy auditors and to obtain additional information necessary for informing decisions for the programs. This needs assessment intended to answer questions in three areas:

1. **Employment Projections:**
   - What is the average number of job openings (both new and replacement) for solar panel installers annually for the next five years?
   - What is the average number of job openings (both new and replacement) for energy auditors annually for the next five years?
   - What are the numbers of new and replacement solar panel installer jobs expected by 2015?
   - What are the numbers of new and replacement energy auditor jobs expected by 2015?

2. **Salary:**
   - What is the median hourly wage for solar panel installers?
   - What is the median hourly wage for energy auditors?

3. **Knowledge and Skill Sets Needed in the Solar and Energy Industries:**
   - What knowledge and / or skills valued most by solar industry representatives need to be incorporated into the solar panel installer program at College of the Canyons?
   - What knowledge and / or skills valued most by solar industry representatives need to be incorporated into the energy management program at College of the Canyons?

The resulting information is intended to be used to inform decisions regarding the development and offering of the solar panel installer and energy management programs at College of the Canyons. In addition, the information will be used to complete the application packet required by the South Central Regional Consortium.
Methods

Data were obtained from three sources:

1. Labor market data including employment projections and median hourly earnings were obtained from Economic Modeling Specialists, Inc. (EMSI).
2. Focus group participants provided input on employment needs, hourly wages and curriculum needs.
3. Regional and statewide data on “green” technology were obtained from the Centers for Excellence.

Focus Group

Six representatives from local companies specializing in “green” technology attended a solar panel installer and energy management program focus group on December 9, 2010 at College of the Canyons’ Valencia campus. For purposes of this report solar panel and energy management jobs are considered to be “green” technology which is defined as follows:

“…an occupation that 1) directly works with policies, information, materials, and/or technologies that contribute to minimizing environmental impact, and 2) requires specialized knowledge, skills, training, or experience in these areas” (Centers for Excellence, 2009, p. 9).

The purpose of this meeting was to obtain information on the employee needs for the solar panel installer and energy management industries within the District’s service area and to get input on the knowledge and skills needed for graduates of these programs. Representatives reviewed the sample curriculum and provided input on curriculum that should be omitted and courses that need to be included in the program.

Labor Market Data

The photovoltaic and solar thermal industry cluster includes firms engaged in development, manufacturing, installation and servicing of solar technology. Some of the current jobs that utilize skills needed to work in the solar thermal and PV fields fall under the following Standard Occupation Classification (SOC) codes and descriptions (EMSI, 2010):

- Electrical and electronic engineering technicians (SOC 17-3023)
- Construction laborers (SOC 47-2061)
- Operating engineers and other construction equipment operators (SOC 47-2073)
- Electricians (SOC 47-2111)
- Helpers, electricians (SOC 47-3013)
- Helpers, construction trades, all other (SOC 47-3019)
• Electrical and electronics repairers, commercial and industrial equipment (SOC 49-2094)
• Helpers--Installation, maintenance, and repair workers (SOC 49-9098)
• Installation, maintenance, and repair workers, all other (SOC 49-9099)
• Electrical and electronic equipment assemblers (SOC 51-2022)
• Electromechanical equipment assemblers (SOC 51-2023)
• Structural metal fabricators and fitters (SOC 51-2041)
• Welders, cutters, solderers, and brazers (SOC 51-4121)

Regional and Statewide Data

Industry demand and job outlook for occupations in “green” technology were obtained from the Centers for Excellence.

To perform the analyses, data were analyzed using Excel (2007).
Results

Employment Projections and Salary. The first area of inquiry was related to the employment demand and salaries for solar panel installers and energy auditors. Specifically, employment demand and salary information was obtained by asking the following questions:

- What is the average number of job openings (both new and replacement) for solar panel installers annually for the next five years?
- What is the average number of job openings (both new and replacement) for energy auditors annually for the next five years?
- What are the numbers of new and replacement solar panel installer jobs expected by 2015?
- What are the numbers of new and replacement energy auditor jobs expected by 2015?

Employment Projections. There was no direct information indicating the employment projections of solar panel installers or energy auditors. However, there is some information that provided some indication of the labor markets. The total number of new and replacement construction jobs over the next five years is projected to be 555, or an average of 111 jobs annually. Since the PV solar installers are a subset of construction, it is reasonable to assume that the number of solar installer jobs will be less than the 111 annually. Coupled with information from the focus group participants, the number will likely be a relatively small proportion of the 111 jobs annually in the Santa Clarita Valley.

There are no data indicating the number of energy auditor positions becoming available. However, focus group participants indicated that the requirement for energy audits for energy rebates is currently being met by the accepted self-audits.

While still in its infancy, the solar thermal and photovoltaic (PV) industry is expected to be one of the fastest growing industries in California and the nation over the next decade (Centers for Excellence, 2009). Of the companies that participated in the focus group they did not see a strong need for energy management. Initial expectations for the need for energy auditors are not being realized as a result of the acceptance of self-audits for energy rebates. If in the future, self-audits are not accepted for rebates then the need for energy auditors might be dramatically impacted.

The total number of new and replacement jobs expected over the next five years in the Santa Clarita Community College District service area for the SOC codes shown in Table 1 is 555 new and replacement positions (average of 111 positions per year). At this time a Standard Occupation Classification (SOC) Code does not exist for solar panel installers or energy auditors so it is
difficult to estimate exactly how many positions are needed. However, many energy industry reports for California and the nation indicate the need for training in these areas. As shown in Table 1, the average annual openings expected in 2010-2015 vary depending on the specific occupation with the “green” technology jobs.

**Median Hourly Earnings.** According to EMSI, the median hourly wage for the SOC codes listed in Table 1 is $18.21 but varies depending on the specific occupation. Representatives at the focus group indicated that the starting hourly wage for installers is $12.50 and can increase to $25-30 for installers who are responsible for managing a crew. Representatives also indicated that individuals employed in sales positions can earn approximately $50,000 after the first year and increase to six figures if they are willing to put in the hours needed to build their clientele.

Table 1. Projected Job Openings in “Green” Technology Related Occupations and Median Hourly Earnings

<table>
<thead>
<tr>
<th>SOC Code</th>
<th>Description</th>
<th>2010 Jobs</th>
<th>2015 Jobs</th>
<th>Openings (new and replacement)</th>
<th>2010 Median Hourly Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-3023</td>
<td>Electrical and electronic engineering technicians</td>
<td>87</td>
<td>84</td>
<td>9</td>
<td>$25.92</td>
</tr>
<tr>
<td>47-2061</td>
<td>Construction laborers</td>
<td>1,463</td>
<td>1,662</td>
<td>249</td>
<td>$18.42</td>
</tr>
<tr>
<td>47-2073</td>
<td>Operating engineers and other construction equipment operators</td>
<td>165</td>
<td>178</td>
<td>28</td>
<td>$31.99</td>
</tr>
<tr>
<td>47-2111</td>
<td>Electricians</td>
<td>378</td>
<td>385</td>
<td>53</td>
<td>$23.42</td>
</tr>
<tr>
<td>47-3013</td>
<td>Helpers, electricians</td>
<td>39</td>
<td>41</td>
<td>6</td>
<td>$14.99</td>
</tr>
<tr>
<td>47-3019</td>
<td>Helpers, construction trades, all other</td>
<td>13</td>
<td>14</td>
<td>3</td>
<td>$12.36</td>
</tr>
<tr>
<td>49-2094</td>
<td>Electrical and electronics repairers, commercial and industrial equipment</td>
<td>37</td>
<td>35</td>
<td>4</td>
<td>$26.31</td>
</tr>
<tr>
<td>49-9098</td>
<td>Helpers--Installation, maintenance, and repair workers</td>
<td>111</td>
<td>116</td>
<td>31</td>
<td>$12.08</td>
</tr>
<tr>
<td>49-9099</td>
<td>Installation, maintenance, and repair workers, all other</td>
<td>413</td>
<td>458</td>
<td>76</td>
<td>$11.60</td>
</tr>
<tr>
<td>51-2022</td>
<td>Electrical and electronic equipment assemblers</td>
<td>168</td>
<td>128</td>
<td>13</td>
<td>$12.31</td>
</tr>
<tr>
<td>51-2023</td>
<td>Electromechanical equipment assemblers</td>
<td>60</td>
<td>55</td>
<td>5</td>
<td>$11.53</td>
</tr>
<tr>
<td>51-2041</td>
<td>Structural metal fabricators and fitters</td>
<td>91</td>
<td>93</td>
<td>15</td>
<td>$18.08</td>
</tr>
<tr>
<td>51-4121</td>
<td>Welders, cutters, solderers, and brazers</td>
<td>273</td>
<td>287</td>
<td>65</td>
<td>$16.45</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>3,298</strong></td>
<td><strong>3,536</strong></td>
<td><strong>555</strong></td>
<td><strong>$18.21</strong></td>
</tr>
</tbody>
</table>

Source: EMSI Complete Employment - 4th Quarter 2010

**Focus Group Input from Solar and Energy Industry Representatives**

**Employment Needs.** Industry representatives present at the meeting did not provide any estimates for the number of solar panel installers that are needed over the next five years. In general, they expressed a need for individuals in sales, installers with roofing and electrical skills, generalists, marketing, experience with CAD and solar design, and repair technicians for solar panels. One representative indicated that installers represent about 25 percent of the solar industry workforce.
Focus group participants did not see a need for solar thermal in the District’s service area at this time. The size of the solar thermal industry in this region is not known. This could be an extra course in the plumbing program, rather than a separate program.

The industry representatives did not see an immediate need for a comprehensive Energy Management program. At this time they do not see the need in this region for residential. Right now utility companies require self-administered energy audits but the state of California may move in the direction of requiring homeowners to hire a professional company to conduct the audit. No employment needs in Energy Management were identified by participants.

Exam Preparation. While the North American Board of Certified Energy Practitioners (NABCEP) is not required for installer positions with companies represented at the focus group, one representative indicated that it would be valued in the hiring process. The NABCEP PV Technical Sales certificate may be valued in the industry, though the importance of this certificate is unknown as it is a relatively new certification.

Curriculum Needs. Focus group participants expressed the need for an Energy Technology program that would prepare students for work in the solar panel installation and repair. Input received from the participants supported the need for 2-3 stand alone courses. The solar and energy industry representatives who participated in the focus group reviewed sample curriculum for the solar and energy management programs. Overall, participants indicated that the Introduction to Energy (EE-I), Photovoltaics I (PV-I) were fine as presented. Suggested changes and recommendations were made for the PV-II, Solar Thermal I & II, Green Construction, and Weatherization and Energy Efficiency (EE-II) courses. Specific suggestions and recommendations were as follows:

Photovoltaics-II Curriculum Needs:

- Participants felt that the material proposed was a lot to cover in 16 weeks and might be too much for a lecture/lab format. They suggested a hybrid format.
- They strongly advised against an intensive format.

Solar Thermal I and II Curriculum Needs:

- Participants were not sure how big the market for solar thermal is in this area given that most people are on natural gas.
- Training in basic plumbing skills is all that is needed.
- Training in site assessment should be included.
Weatherization and Energy Efficiency (EE-II) Curriculum Needs:

- Participants’ interest was only in the basics of EE-II not a comprehensive audit program with the equipment that is needed for such programs.

Title 24 Energy Code, Advanced Energy Auditing and HERS Rater (EE-III) Curriculum Needs:

- Participants’ interest was only in the basics of energy auditing. They do not see a need for a comprehensive audit program with the equipment that is needed for such programs.

Green Construction Curriculum Needs:

- One participant suggested that the College obtain training materials from U.S. Green Business Council (USGBC) to inform curriculum development for green construction.

In addition, recommendations were made for incorporating other training and preparation into the program such as sales and marketing, continued education offerings, and resume workshops. Specific suggestions for equipment and other training needs were as follows:

Equipment:

- A suggestion was made for the College to visit SunPower Systems in Richmond, California to see their equipment.

Other Training Needs:

- Participants recommended offering parts of the curriculum as continuing education but not in an accelerated format.
- Hands-on training should be included in the programs.
- Internship opportunities should be provided to students. Two of the participants offer internships.
- Roofing and electrical skills need to be incorporated into the program.
**Recommendations**

At this time, there is no clear empirical support for developing energy auditor or solar panel installer programs. The number of local jobs is difficult to project, but reasonably can be assumed to be low. It is also important to note that the L.A. Trade Tech has a certificate in Solar Energy Systems Installation and Maintenance that is pending approval by the State. However, based on input from focus group participants, individual courses in energy audit and solar panel installer may be supported in electrical or plumbing programs. These courses could be complemented by courses in other instructional departments such as communication, sales & marketing, and construction management. The need should be regularly reassessed as legislative changes and demand could quickly impact the need for the programs.

- The suggestions made by solar and energy industry representatives for the energy technology curriculum should be taken into consideration. Specifically, the following suggestions should be considered:
  - Embed hands-on training within the programs.
  - Provide internship and job-shadow opportunities for students.
  - Coordinate internship opportunities with the Cooperative Work Education Experience program.
  - Incorporate training in communications and sales techniques.
  - Incorporate roofing and electrical training.
  - Incorporate principles of solar design.
  - Incorporate training in site assessment.
  - Avoid offering courses in an intensive / accelerated format.
  - Explore ways to ensure that course material planned for Photovoltaics II is able to be covered in a 16 week course. Participants expressed concern for the amount of material that is currently planned to be covered in a lecture/lab format.
  - Solar Thermal curriculum should focus on basic plumbing techniques.
  - Only the basics of EE-II are needed for the energy audit program, not a comprehensive audit program with the equipment that is needed for such programs.
  - Incorporate solar panel repair training.
  - Offer parts of the curriculum as continuing education but not in an intensive format.

**References**


Action Implications

Upon review of the Needs Assessments for the Solar Panel Installer and Energy Management Programs data, the following action implications will be explored:

- As the college hires full-time staff for the trades programs, adding qualifications for solar installation and repair and energy audit would be helpful.
- Work with regional solar and energy industry partners to monitor employment needs.
- Work with CREATE (NSF grant) consortium to monitor trends in alternative energy and energy management.