The California State University
Office of the Chancellor
401 Golden Shore
Long Beach, CA 90802-4210
(562) 951-4411

Date: May 22, 2000

To: CSU Presidents

From: Jackie R. McClain
Vice Chancellor
Human Resources

Subject: New and Revised Classification and Qualification Standards for Skilled Trades (Unit 6)

Human Resources is pleased to distribute both the new and revised classifications and qualification standards for Skilled Trades (Unit 6) classifications. The classification standards were updated to better reflect the actual work performed on campuses and to acknowledge the integration of technology into these classifications. In addition, seven new classifications have been added as listed below:

<table>
<thead>
<tr>
<th>New Class Code</th>
<th>New Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6250</td>
<td>Facilities Worker I</td>
</tr>
<tr>
<td>6251</td>
<td>Facilities Worker II</td>
</tr>
<tr>
<td>6265</td>
<td>Facilities Project Supervisor</td>
</tr>
<tr>
<td>6270</td>
<td>Automotive/Equipment Mechanic</td>
</tr>
<tr>
<td>6260</td>
<td>Facilities Control Specialist</td>
</tr>
<tr>
<td>6280</td>
<td>Metal Worker I</td>
</tr>
<tr>
<td>6281</td>
<td>Metal Worker II</td>
</tr>
</tbody>
</table>

The new classifications will be available for campus use effective July 1, 2000.

The new and revised Skilled Trades classifications will be implemented according to the attached Implementation Road Map. These changes will be effective July 1, 2000. Implementation instructions will be sent in a future technical memorandum.

The following attachments are provided for your reference:
- Skilled Trades Classification Study Implementation Road Map (Attachment A)
- Updated Classification Standards for the Skilled Trades Series (Attachment B)

A review of the apprentice classifications will be conducted in the future to ensure consistency with the new and revised Skilled Trades classifications.

This memorandum can also be found on Human Resources Administrations' web site at: http://www.calstate.edu/hr/hr-Adm/memos.html. Questions regarding these classification standards can be directed to Gina Caywood at (562) 951-4416. Thank you.

JRMcC/gc

Distribution: (All with Attachments)
Vice Presidents, Administration
Associate Vice Presidents/Deans of Faculty
Human Resources Directors
Employee Relations Designees
Plant Directors
## Skilled Trades (Unit 6) Classification Study
### Standard Trade Classifications
#### IMPLEMENTATION ROAD MAP

<table>
<thead>
<tr>
<th>CURRENT CLASSIFICATIONS &amp; SALARY RANGES (ranges effective 7/1/99)</th>
<th>NEW CLASSIFICATIONS (effective 7/1/00)</th>
</tr>
</thead>
</table>
| 6533 – Electrician I  
Salary Range: $3,765 - $4,613 | ➡️ Electrician* |
| 6532 – Electrician II  
Salary Range: $3,976 - $4,873 | ➡️ Lead Electrician* |
| 6534 – Supervising Electrician  
Salary Range: $4,160 - $5,098 | ➡️ Supervising Electrician* |
| 6549 – Plumber I  
Salary Range: $3,765 - $4,613 | ➡️ Plumber* |
| 6548 – Plumber II  
Salary Range: $3,976 - $4,873 | ➡️ Lead Plumber* |
| 6547 – Supervising Plumber  
Salary Range: $4,160 - $5,098 | ➡️ Supervising Plumber* |
| 6476 – Carpenter I  
Salary Range: $3,647 - $4,376 | ➡️ Carpenter* |
| 6475 – Carpenter II  
Salary Range: $3,765 - $4,614 | ➡️ Lead Carpenter* |
| 6474 – Supervising Carpenter  
Salary Range: $3,976 - $4,873 | ➡️ Supervising Carpenter* |

* Classification code not changing; however, the title and/or classification standard have been updated.

Prepared by HR Administration
CSU Office of the Chancellor
<table>
<thead>
<tr>
<th>CURRENT CLASSIFICATIONS &amp; SALARY RANGES</th>
<th>NEW CLASSIFICATIONS (effective 7/1/00)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6526 – Painter I</td>
<td>Painter*</td>
</tr>
<tr>
<td>Salary Range: $3,647 - $4,376</td>
<td></td>
</tr>
<tr>
<td>6525 – Painter II</td>
<td>Lead Painter*</td>
</tr>
<tr>
<td>Salary Range: $3,765 - $4,614</td>
<td></td>
</tr>
<tr>
<td>6524 – Supervising Painter</td>
<td>Supervising Painter*</td>
</tr>
<tr>
<td>Salary Range: $3,976 - $4,873</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LOCKSMITH SERIES</td>
</tr>
<tr>
<td>6642 – Locksmith I</td>
<td>Locksmith*</td>
</tr>
<tr>
<td>Salary Range: $3,647 - $4,376</td>
<td></td>
</tr>
<tr>
<td>6643 – Locksmith II</td>
<td>Lead Locksmith*</td>
</tr>
<tr>
<td>Salary Range: $3,765 - $4,645</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MASON CLASSIFICATION</td>
</tr>
<tr>
<td>6616 – Mason</td>
<td>Mason*</td>
</tr>
<tr>
<td>Salary Range: $3,647 - $4,376</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BLACKSMITH CLASSIFICATION</td>
</tr>
<tr>
<td>6575 – Blacksmith</td>
<td>Blacksmith*</td>
</tr>
<tr>
<td>Salary Range: $3,647 - $4,376</td>
<td></td>
</tr>
</tbody>
</table>

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Prepared by HR Administration
CSU Office of the Chancellor
### Skilled Trades (Unit 6) Classification Study
#### Broad Trade Classifications

**IMPLEMENTATION ROAD MAP**

<table>
<thead>
<tr>
<th>CURRENT CLASSIFICATIONS &amp; SALARY RANGES</th>
<th>NEW CLASSIFICATIONS (effective 7/1/00)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(ranges effective 7/1/99)</strong></td>
<td></td>
</tr>
<tr>
<td>6212 – Skilled Laborer</td>
<td>Facilities Worker I</td>
</tr>
<tr>
<td>Salary Range: $2,993 - $3,638</td>
<td>New Class Code: 6250</td>
</tr>
<tr>
<td>6215 – Building Maintenance Worker</td>
<td>Campus-level transaction required for conversion</td>
</tr>
<tr>
<td>Salary Range: $2,993 - $3,638</td>
<td></td>
</tr>
<tr>
<td>New – No employees will convert to this classification. Campus reclassification review required.</td>
<td>Facilities Worker II</td>
</tr>
<tr>
<td></td>
<td>New Class Code: 6251</td>
</tr>
<tr>
<td>6940 – Maintenance Mechanic</td>
<td>Facilities Maintenance Mechanic*</td>
</tr>
<tr>
<td>Salary Range: $3,647 - $4,428</td>
<td></td>
</tr>
<tr>
<td>6941 – Farm Maintenance Mechanic</td>
<td>Farm Maintenance Mechanic*</td>
</tr>
<tr>
<td>Salary Range: $3,765 - $4,650</td>
<td></td>
</tr>
<tr>
<td><strong>NEW SUPERVISORY CLASS</strong></td>
<td></td>
</tr>
<tr>
<td>New – No employees will convert to this classification.</td>
<td>Facilities Project Supervisor</td>
</tr>
<tr>
<td></td>
<td>New Class Code: 6265</td>
</tr>
<tr>
<td><strong>EQUIPMENT MECHANIC SERIES</strong></td>
<td></td>
</tr>
<tr>
<td>6837 – Mechanics Helper</td>
<td>Mechanics Helper*</td>
</tr>
<tr>
<td>Salary Range: $2,993 - $3,638</td>
<td></td>
</tr>
<tr>
<td>6851 – Automobile Mechanic</td>
<td>Automotive/Equipment Mechanic</td>
</tr>
<tr>
<td>Salary Range: $3,647 - $4,376</td>
<td>New Class Code: 6270</td>
</tr>
<tr>
<td>6834 – Heavy Equipment Mechanic</td>
<td>Campus-level transaction required for conversion</td>
</tr>
<tr>
<td>Salary Range: $3,647 - $4,426</td>
<td></td>
</tr>
<tr>
<td>6852 – Lead Auto/Equipment Mech</td>
<td>Lead Automotive/Equipment Mechanic*</td>
</tr>
<tr>
<td>Salary Range: $3,765 - $4,613</td>
<td></td>
</tr>
</tbody>
</table>

* Classification code not changing; however, the title and/or classification standard have been updated.

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CSU Office of the Chancellor
## Skilled Trades (Unit 6) Classification Study
### Broad Trade Classifications

#### IMPLEMENTATION ROAD MAP

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<tr>
<th>CURRENT CLASSIFICATIONS &amp; SALARY RANGES</th>
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<tbody>
<tr>
<td>(ranges effective 7/1/99)</td>
<td></td>
</tr>
<tr>
<td><strong>HVAC SERVICES SERIES</strong></td>
<td></td>
</tr>
<tr>
<td>6703 – Operating Engineer</td>
<td>Operating Engineer*</td>
</tr>
<tr>
<td>Salary Range: $3,647 - $4,428</td>
<td></td>
</tr>
<tr>
<td>6702 – Building Service Engineer</td>
<td>Building Service Engineer*</td>
</tr>
<tr>
<td>Salary Range: $3,765 - $4,613</td>
<td></td>
</tr>
<tr>
<td>6699 – Refrigeration Mechanic</td>
<td>Air Conditioning/Refrigeration Mechanic*</td>
</tr>
<tr>
<td>Salary Range: $3,976 - $4,914</td>
<td></td>
</tr>
<tr>
<td>New – No employees will convert to this classification.</td>
<td>Facilities Control Specialist New Class Code: 6260</td>
</tr>
<tr>
<td>6700 – Supervising Bldg Svc Engineer</td>
<td>Supervising Building Service Engineer*</td>
</tr>
<tr>
<td>Salary Range: $4,160 - $5,098</td>
<td></td>
</tr>
<tr>
<td>6685 – Power Plant Operator</td>
<td>Power Plant Operator Classification will be eliminated when vacated. Incumbents will be grandfathered.</td>
</tr>
<tr>
<td>Salary Range: $3,647 - $4,522</td>
<td></td>
</tr>
<tr>
<td><strong>METAL WORKER SERIES</strong></td>
<td></td>
</tr>
<tr>
<td>6584 – Sheet Metal Worker</td>
<td>Metal Worker I New Class Code: 6280</td>
</tr>
<tr>
<td>Salary Range: $3,765 - $4,613</td>
<td>Campus-level transaction required for conversion</td>
</tr>
<tr>
<td>6805 – Machinist</td>
<td>Metal Worker II New Class Code: 6281</td>
</tr>
<tr>
<td>Salary Range: $3,765 - $4,561</td>
<td>Campus-level transaction required for conversion</td>
</tr>
<tr>
<td>6583 – Materials Fabrication Specialist</td>
<td>Supervising Metal Worker*</td>
</tr>
<tr>
<td>Salary Range: $3,976 - $4,873</td>
<td></td>
</tr>
<tr>
<td>6596 – Fusion Welder</td>
<td></td>
</tr>
<tr>
<td>Salary Range: $3,765 - $4,518</td>
<td></td>
</tr>
<tr>
<td>6587 – Supervising Mat Fab Specialist</td>
<td></td>
</tr>
<tr>
<td>Salary Range: $4,160 - $5,098</td>
<td></td>
</tr>
</tbody>
</table>

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Classification and Qualification

ELECTRICIAN SERIES

<table>
<thead>
<tr>
<th>Classification Title</th>
<th>Class Code</th>
<th>Date Established</th>
<th>Date Revised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrician</td>
<td>6533</td>
<td>1931</td>
<td>July 1, 2000</td>
</tr>
<tr>
<td>Lead Electrician</td>
<td>6532</td>
<td>December 19, 1958</td>
<td>July 1, 2000</td>
</tr>
<tr>
<td>Supervising Electrician</td>
<td>6534</td>
<td>October 1, 1974</td>
<td>July 1, 2000</td>
</tr>
</tbody>
</table>

SERIES OVERVIEW:
Electricians as defined in this series are journey-level skilled trades workers responsible for the full range of skilled electrical work including the installation, maintenance, modification and repair of electrical apparatuses, equipment and systems. Incumbents inspect, isolate, troubleshoot and repair electrical malfunctions using various test instruments; operate electrical power-generating plants and other electrical equipment and systems; maintain and repair low voltage systems including fire, alarm and access systems; test electrical equipment for safety and efficiency; plan the layout and wiring of new or remodeled installations; fabricate electrical parts; perform incidental welding as necessary to complete electrical work; advise in the selection and storage of electrical equipment; inspect completed work for conformance with specifications, requirements and compliance with applicable building and safety codes and regulations; inspect related work performed by contractors; estimate cost, time and materials for electrical projects; participate in the maintenance and operations of an electrical shop; clean, maintain and service tools and equipment used in the performance of duties; perform all work in accordance with established safety procedures; maintain a safe and clean work environment; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; and consult and work with other trades workers. Work may involve exposure to hazardous materials. Incumbents typically hold a license or applicable certification.

Three progressive classifications are defined within this series, each performing the full range of skilled electrical work; however, the supervisory, project planning and coordination responsibilities vary depending on the classification. Examples of typical activities are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

ELECTRICIAN

Under general supervision, incumbents in this classification perform the full range of skilled journey-level electrical and related work as outlined in the series overview. Incumbents in this classification also may provide instruction and lead direction to unskilled and semi-skilled assistants.

TYPICAL QUALIFICATIONS:

Knowledge - Work requires thorough knowledge of electrical theory and the methods, materials, tools and equipment used in the electrical trade for the installation, maintenance and repair of electrical apparatuses, equipment and systems; and a thorough knowledge of applicable state and federal codes and regulations pertaining to the electrical trade, including the National Electric Code and Electrical Safety Orders of the Division of Industrial Safety of the State of California.
Abilities - Must be able to assemble, install, maintain and repair electrical apparatuses; operate all applicable tools and equipment necessary to perform skilled electrical work; read, interpret and work from blueprints, plans, drawings, and specifications; make rough sketches; estimate the cost, time and materials of electrical work; maintain records and retrieve data related to work performed using manual and computerized record-keeping systems; prepare standard reports; provide instruction to unskilled and semi-skilled assistants; analyze and respond appropriately to emergency situations; read and write at a level appropriate to the position; and perform arithmetic calculations as required by the position. Incumbents may be required to possess a California Driver’s License valid for the operation of any vehicle or equipment they are required to maintain and operate.

Experience - These abilities normally would be acquired through any combination of progressively responsible training and experience which demonstrates achievement of journey-level skills equivalent to that acquired through completion of a standard electrician’s apprenticeship program.

LEAD ELECTRICIAN

Under general supervision, the Lead Electrician works with and is in charge of a small group or crew of skilled Electricians and semi-skilled assistants involved in completing the work outlined in the series overview. The work of the Lead Electrician is distinguished from the Electrician by the additional responsibilities of providing lead work direction to several journey-level crafts workers and semi-skilled assistants, laying out and coordinating the work flow for jobs, and preparing materials lists and ordering supplies for jobs. Unlike the Supervising Electrician, the Lead Electrician spends the majority of time working as a skilled electrician, but has ancillary lead work and project planning responsibilities.

Incumbents typically lay out, direct, and assist with the full range of skilled electrical work outlined in the series overview; supervise, instruct and work with a small group or crew of Electricians and assistants; instruct others in safety rules and ensure that they are observed; select and prepare lists of materials for jobs; maintain stock and materials in the warehouse; inspect electrical work to ensure it meets quality requirements and specifications; draw diagrams and sketches of work to be performed; maintain manual and/or computerized work records and maintenance management systems; prepare manual and/or computerized reports; and may supervise the maintenance of an electrical shop. On specific projects, may coordinate the work of other skilled crafts workers.

TYPICAL QUALIFICATIONS:

Knowledge - In addition to the knowledge required of the Electrician, the Lead Electrician must possess a working knowledge of effective supervisory practices and techniques.

Abilities - In addition to the abilities required of the Electrician, the Lead Electrician must be able to lead, instruct and coordinate the work of a small group or crew of skilled and semi-skilled workers; accurately estimate costs, supplies and materials needed for jobs; prepare lists of materials; ensure work is performed in sequence; maintain records; and prepare more complex reports.

Experience - In addition to the experience required of the Electrician, the abilities of a Lead Electrician normally would be acquired through one to two years of experience as a journey-level electrician that included work coordination responsibilities.

SUPERVISING ELECTRICIAN

Under general supervision, the Supervising Electrician primarily is responsible for supervising and working with one or more groups or crews of skilled journey-level electricians and their semi-skilled assistants in the performance of general electrical maintenance work outlined in the series overview. The Supervising Electrician is distinguished from the Lead Electrician by the scope of supervisory, project planning and coordination duties as well as the greater amount of time devoted to these activities.
Incumbents typically prioritize and coordinate the work of multiple crews or projects; assign work to qualified crew members; provide work and safety instructions; provide on-the-job training and instructions to less skilled workers in trade and safety practices; provide input on performance evaluations; monitor work in progress; inspect completed work to ensure it is in compliance with specifications, special instructions and sound trade practices; develop and maintain manual and/or computerized work record-keeping and/or maintenance management systems; prepare reports; and oversee an electrical shop.

Work on new construction and remodels requires: collaborating with engineering and design departments; interpreting complicated plans and drawings; coordinating work schedules and work assignments to meet the overall construction/modification objectives; sequencing of work; ensuring the availability of required materials and equipment; analyzing operations; preparing cost and time estimates; and providing a high level of inspection to ensure appropriate building and safety codes are met. Incumbents also may design minor tenant improvements and coordinate and supervise the work of related trades workers on specific projects.

**TYPICAL QUALIFICATIONS:**

**Knowledge** - In addition to the knowledge required of the Lead Electrician, the Supervising Electrician must possess a more thorough knowledge of effective supervisory practices and techniques and a working knowledge of job design and work sequencing related to construction projects.

**Abilities** - In addition to the abilities required of the Lead Electrician, the Supervising Electrician must be able to plan and direct the work of skilled crafts workers and their semi-skilled assistants; determine and coordinate staffing, material and equipment needs for multiple jobs and projects; ensure accuracy and maintenance of assigned record-keeping systems; and perform basic design work for electrical systems.

**Experience** - In addition to the experience required of the Lead Electrician, the abilities of the Supervising Electrician normally would be acquired through two or more years of experience as a journey-level electrician, including one to two years in a lead/supervisory capacity.
## PLUMBER SERIES

<table>
<thead>
<tr>
<th>Classification Title</th>
<th>Class Code</th>
<th>Date Established</th>
<th>Date Revised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plumber</td>
<td>6549</td>
<td>1931</td>
<td>July 1, 2000</td>
</tr>
<tr>
<td>Lead Plumber</td>
<td>6548</td>
<td>December 19, 1958</td>
<td>July 1, 2000</td>
</tr>
<tr>
<td>Supervising Plumber</td>
<td>6547</td>
<td>October 1, 1971</td>
<td>July 1, 2000</td>
</tr>
</tbody>
</table>

### SERIES OVERVIEW:
Plumbers as defined in this series are journey-level skilled trades workers responsible for the full range of skilled plumbing work including the installation, maintenance, inspection, modification, remodel and repair of mechanical plumbing equipment and fixtures for water, gas, oil, steam, sewage, fire sprinkler/prevention, and refrigeration-related plumbing systems, including automated plumbing systems. Incumbents typically maintain, troubleshoot and test plumbing systems, including backflow prevention devices; assemble, install and repair pumps, pipes, fittings, and fixtures; cut, thread and weld pipes; assemble and install valves, pipe fittings and pipes composed of a variety of metals and materials; maintain campus swimming pools; manage lab utilities; advise on the selection, ordering and storage of plumbing equipment and supplies; inspect completed work for conformance with specifications, requirements and compliance with applicable building and safety codes and regulations; inspect related work performed by contractors; estimate cost, time and materials for plumbing projects; participate in the maintenance and operations of a plumbing shop; maintain and service tools and equipment used in the performance of duties; perform all work in accordance with established safety procedures; maintain a safe and clean work environment; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; and consult and work with other trades workers. Work may involve exposure to hazardous materials.

Some positions may be assigned water treatment duties that involve monitoring, testing and chemically treating potable and/or non-potable water systems. This work requires the incumbent to possess the applicable water treatment certification.

Three progressive classifications are defined within this series, each performing the full range of skilled plumbing work; however, the supervisory, project planning and coordination responsibilities vary depending on the classification. Examples of typical activities are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

### PLUMBER
Under general supervision, incumbents in this classification perform the full range of skilled journey-level plumbing work as outlined in the series overview. Incumbents in this classification also may provide instruction and lead direction to unskilled and semi-skilled assistants.

### TYPICAL QUALIFICATIONS:
*Knowledge* - Work requires thorough knowledge of the methods, materials, tools and equipment used in the plumbing trade; a base knowledge of the operation of building automation systems; and a thorough knowledge of applicable state and federal health and safety orders and regulations pertaining to the plumbing trade, including the California State Safety Orders of the Division of Industrial Safety and the California State Plumbing codes.
**Abilities** - Must be able to perform skilled plumbing work on all applicable equipment and systems; perform applicable welding work; obtain necessary backflow prevention licenses; make rough sketches of plumbing installations; read and work from blueprints, plans, drawings and specifications; estimate materials and labor cost of standard plumbing maintenance and repair work; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; provide instruction to unskilled and semi-skilled assistants; analyze and respond appropriately to emergency situations; prepare standard reports; read and write at the level appropriate to the position; and perform arithmetic calculations as required by the position. Incumbents may be required to possess a California Driver’s License valid for the operation of any vehicle or equipment they are required to maintain and operate.

**Experience** - These abilities normally would be acquired through any combination of progressively responsible training and experience which demonstrates achievement journey-level skills equivalent to that acquired through completion of a standard plumber’s apprenticeship program.

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**LEAD PLUMBER**

Under general supervision, the Lead Plumber works with and is in charge of a small group or crew of skilled Plumbers and semi-skilled assistants involved in completing the work outlined in the series overview. The work of the Lead Plumber is distinguished from the Plumber by the additional responsibilities of providing lead work direction to several journey-level crafts workers and semi-skilled assistants, laying out and coordinating the work flow for jobs, and preparing materials lists and ordering supplies for jobs. Unlike the Supervising Plumber, the Lead Plumber spends the majority of time working as a skilled plumber, but has ancillary lead work and project planning responsibilities.

Incumbents typically lay out, direct, and assist with the full range of plumbing work outlined in the series overview; supervise, instruct and work with a small group or crew of Plumbers and assistants; instruct others in safety rules and ensure they are observed; select and prepare lists of materials for jobs; maintain stock and materials in the warehouse; draw diagrams and sketches of work to be performed; may assist in the design of plumbing systems; maintain manual and/or computerized work records and maintenance management systems; prepare manual and/or computerized reports; and may supervise the maintenance of a plumbing shop. On specific projects, may coordinate the work of other skilled crafts workers.

**TYPICAL QUALIFICATIONS:**

**Knowledge** - In addition to the knowledge required of the Plumber, the Lead Plumber must possess a working knowledge of effective supervisory practices and techniques.

**Abilities** - In addition to the abilities required of the Plumber, the Lead Plumber must be able to lead, instruct and coordinate the work of a small group or crew of skilled and semi-skilled workers; accurately estimate costs, supplies and materials needed for jobs; prepare lists of materials; ensure work is performed in sequence; maintain records; and prepare more complex reports.

**Experience** - In addition to the experience required of the Plumber, the abilities of a Lead Plumber normally would be acquired through one to two years of experience as a journey-level plumber that included work coordination responsibilities.

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**SUPERVISING PLUMBER**

Under general supervision, the Supervising Plumber primarily is responsible for supervising and working with one or more groups or crews of skilled journey-level plumbers and their semi-skilled assistants in the performance of general plumbing maintenance and repair work outlined in the series overview. Incumbents may also be responsible for overseeing the design and installation of plumbing equipment and systems for new construction and/or major modification projects. The Supervising Plumber is distinguished from the Lead Plumber by the scope of supervisory, project planning and coordination duties as well as the greater amount of time devoted to these activities.
Incumbents typically prioritize and coordinate the work of multiple crews or projects; assign work to qualified crew members; provide work and safety instructions; provide on-the-job training and instructions to less skilled workers in trade and safety practices; provide input on performance evaluations; monitor work in progress; inspect completed work to ensure it is in compliance with specifications, special instructions and sound trade practices; develop and maintain manual and/or computerized work record-keeping and/or maintenance management systems; prepare reports; and oversee a plumbing shop.

Work on new construction and remodels requires: collaborating with engineering and design departments; interpreting complicated plans and drawings; coordinating work schedules and work assignments to meet the overall construction/modification objectives; sequencing of work; ensuring the availability of required materials and equipment; analyzing operations; preparing cost and time estimates; and providing a high level of inspection to ensure appropriate building and safety codes are met. Incumbents also may design minor tenant improvements and coordinate and supervise the work of related trades workers on specific projects.

TYPICAL QUALIFICATIONS:

**Knowledge** - In addition to the knowledge required of the Lead Plumber, the Supervising Plumber must possess a more thorough knowledge of effective supervisory practices and techniques and a working knowledge of job design and work sequencing related to construction projects.

**Abilities** - In addition to the abilities required of the Lead Plumber, the Supervising Plumber must be able to plan and direct the work of skilled crafts workers and their semi-skilled assistants; determine and coordinate staffing, material and equipment needs for multiple jobs and projects; ensure accuracy and maintenance of assigned record-keeping systems; and perform design work for plumbing systems.

**Experience** - In addition to the experience required of the Lead Plumber, the abilities of a Supervising Plumber normally would be acquired through two or more years of experience as a journey-level plumber including one to two years in a lead/supervisory capacity.
### CARPENTER SERIES

<table>
<thead>
<tr>
<th>Classification Title</th>
<th>Class Code</th>
<th>Date Established</th>
<th>Date Revised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpenter</td>
<td>6476</td>
<td>1931</td>
<td>July 1, 2000</td>
</tr>
<tr>
<td>Lead Carpenter</td>
<td>6475</td>
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<td>July 1, 2000</td>
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<tr>
<td>Supervising Carpenter</td>
<td>6474</td>
<td>October 1, 1971</td>
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**SERIES OVERVIEW:**

Carpenters as defined in this series are journey-level skilled trades workers responsible for the full range of rough and finished skilled carpentry work. Incumbents work from blueprints, specifications, drawings and instructions to build, remodel, maintain and repair various types of facilities, buildings, offices, classrooms, restrooms, sheds, scaffolds, forms, frames, fences, and other structures; install, build and repair internal and external structures; install and repair dry wall, ceiling and floor tiles, and roofs; make cabinets, counters, shelves, benches, partitions, floors, and door and window frames; hang doors and install windows; assist in making concrete molds and structures; make rough sketches of repair work; may install and repair modular furniture; advise in the selection and storage of building materials; inspect completed work for conformance with specifications, requirements and compliance with applicable building and safety codes and regulations; inspect related work performed by contractors; estimate cost, time and materials for carpentry projects; participate in the maintenance and operations of a carpentry shop; clean, maintain and service tools and equipment used in the performance of duties; perform all work in accordance with established safety procedures; maintain a safe and clean work environment; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; and consult and work with other trades workers. Work may involve exposure to hazardous materials such as lead and asbestos.

Three progressive classifications are defined within this series, each performing the full range of skilled carpentry work; however, the supervisory, project planning and coordination responsibilities vary depending on the classification. Examples of typical activities are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

**CARPENTER**

Under general supervision, incumbents in this classification perform the full range of skilled journey-level carpentry and related work as outlined in the series overview. Incumbents in this classification also may provide instruction and lead direction to unskilled and semi-skilled assistants.

**TYPICAL QUALIFICATIONS:**

- **Knowledge** - Work requires thorough knowledge of methods, materials, tools and equipment used in both rough and finished carpentry; various types and grades of lumber; hand and power carpentry tools; and applicable state safety codes and regulations pertaining to the carpentry trade, including the Safety Orders of the Division of Industrial Safety for the State of California and California State Building Codes.

- **Abilities** - Must be able to build, install and repair structural woodwork, flooring, ceilings and cabinetry;
operate and maintain hand and power carpentry tools; read, interpret and work from blueprints, plans, drawings, and specifications; recognize and select appropriate lumber types and grades; make rough sketches; estimate the cost, time and materials of carpentry projects; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; provide instruction to unskilled and semi-skilled assistants; analyze and respond appropriately to emergency situations; read and write at a level appropriate to the position; and perform arithmetic calculations as required by the position. Incumbents may be required to possess a California Driver’s License valid for the operation of any vehicle or equipment they are required to maintain and operate.

Experience - These abilities normally would be acquired through any combination of progressively responsible training and experience which demonstrates achievement of journey-level skills equivalent to that acquired through the completion of a carpenter’s apprenticeship program.

LEAD CARPENTER

Under general supervision, the Lead Carpenter works with and is in charge of a small group or crew of skilled Carpenters and semi-skilled assistants involved in completing the work outlined in the series overview. The work of the Lead Carpenter is distinguished from the Carpenter by the additional responsibilities of providing lead work direction to several journey-level crafts workers and semi-skilled assistants, laying out and coordinating the work flow for jobs, and preparing materials lists and ordering supplies for jobs. Unlike the Supervising Carpenter, the Lead Carpenter spends the majority of time working as a skilled carpenter but has ancillary lead work and project planning responsibilities.

Incumbents typically lay out, direct, and assist with the full range of skilled carpentry work as outlined in the series overview; supervise, instruct and work with a small group or crew of Carpenters and assistants; instruct others in safety rules and ensure that rules are observed; select and prepare lists of materials for jobs; maintain stock materials in the warehouse; inspect carpentry work to ensure it meets quality requirements and specifications; maintain manual and/or computerized work records and maintenance management systems; prepare manual and/or computerized reports; and may supervise the maintenance of a carpentry shop. On specific projects, may coordinate the work of other skilled crafts workers.

TYPICAL QUALIFICATIONS:

Knowledge - In addition to the knowledge required of the Carpenter, the Lead Carpenter must possess a working knowledge of effective supervisory practices and techniques.

Abilities - In addition to the abilities required of the Carpenter, the Lead Carpenter must be able to lead, instruct and coordinate the work of a small group or crew of skilled and semi-skilled workers; accurately estimate costs, supplies and materials needed for jobs; prepare lists of materials; ensure work is performed in sequence; maintain records; and prepare more complex reports.

Experience - In addition to the experience required of the Carpenter, the abilities of a Lead Carpenter normally would be acquired through one to two years of experience as a journey-level carpenter that included work coordination responsibilities.

SUPERVISING CARPENTER

Under general supervision, the Supervising Carpenter primarily is responsible for supervising and working with one or more groups or crews of skilled journey-level carpenters and semi-skilled assistants in the performance of general carpentry maintenance work and/or new construction and major remodeling projects as outlined in the series overview. The Supervising Carpenter is distinguished from the Lead Carpenter by the scope of supervisory, project planning and coordination duties and the greater amount of time devoted to these activities.

Incumbents typically prioritize and coordinate the work of multiple crews or projects; assign work to qualified
crew members; provide work and safety instructions; provide on-the-job training and instructions to less skilled workers in trade and safety practices; provide input on performance evaluations; monitor work in progress; inspect completed work to ensure it is in compliance with specifications, special instructions and sound trade practices; maintain and develop manual and/or computerized record-keeping and/or maintenance management systems; prepare reports; and oversee a carpentry shop.

Work on new construction and remodels requires: collaborating with engineering and design departments; interpreting complicated plans and drawings; coordinating work schedules and work assignments to meet the overall construction/modification objectives; sequencing of work; ensuring the availability of required materials and equipment; analyzing operations; preparing cost and time estimates; and providing a high level of inspection to ensure appropriate building and safety codes are met. Incumbents also may design minor tenant improvements and coordinate and supervise the work of related trades workers on specific projects.

TYPICAL QUALIFICATIONS:

**Knowledge** - In addition to the knowledge required of the Lead Carpenter, the Supervising Carpenter must possess a more thorough knowledge of effective supervisory practices and techniques and a working knowledge of job design and work sequencing related to construction projects.

**Abilities** - In addition to the abilities required of the Lead Carpenter, the Supervising Carpenter must be able to plan and direct the work of skilled crafts workers and their semi-skilled assistants; determine and coordinate staffing, material and equipment needs for multiple jobs and projects; and ensure accuracy and maintenance of assigned record-keeping systems. Incumbents also must be skilled in carpentry design.

**Experience** - In addition to the experience required of the Lead Carpenter, the abilities of the Supervising Carpenter normally would be acquired through two or more years of experience as a journey-level carpenter, including one to two years in a lead/supervisory capacity.
# Painter Series

<table>
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<td>6524</td>
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## Series Overview:

Painters as defined this series are journey-level skilled trades workers responsible for the performance of the full range of skilled work in the painting, finishing and maintaining of a wide variety of interior and exterior surfaces and structures. Incumbents prepare surfaces for painting and finishing; apply under coats and finish coats using the full range of application methods including brush, roll, spray and electro-static spray; hang paper; mix and match paints and finishes; perform sand and water blasting; erect scaffolding and/or hang rigging from electronic staging for painting projects; paint signs and parking lot/roadway markings; advise in the selection and storage of painting materials; inspect completed work for conformance with specifications, requirements and compliance with applicable building and safety codes and regulations; inspect related work performed by contractors; estimate cost, time and materials for painting projects; participate in the maintenance and operations of a paint shop; clean and maintain painting and finishing materials, tools and equipment used in the performance of duties; perform all work in accordance with established safety procedures; maintain a safe and clean work environment; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; and consult and work with other trades workers. Work may involve exposure to hazardous materials such as paint thinners, lead and asbestos.

Three progressive classifications are defined within this series, each performing the full range of skilled painting work; however, the supervisory, project planning and coordination responsibilities vary depending on the classification. Examples of typical activities are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

## Painter

Under general supervision, incumbents in this classification perform the full range of skilled journey-level painting, finishing and related work as outlined in the series overview. Incumbents in this classification also may provide instruction and lead direction to unskilled and semi-skilled assistants.

## Typical Qualifications:

**Knowledge** - Work requires thorough knowledge of the methods, materials, tools and equipment used in the painting trade including painting, finishing, drywall, and paperhanging; and a thorough knowledge of the applicable state codes and regulations, including the Safety Orders of the Division of Industrial Safety of the State of California.
**Abilities** - Must be able to apply paints and finishes neatly and accurately; mix paints and finishes and match colors; erect and work from scaffolds, rigging and ladders; select the most appropriate materials; read, interpret and work from blueprints, plans, drawings, and specifications; make rough sketches; estimate cost, time and materials of painting work; maintain records and retrieve data using manual and/or computerized record-keeping systems; prepare standard reports; provide instruction to unskilled and semi-skilled assistants; analyze and respond appropriately to emergency situations; read and write at a level appropriate to the position; and perform arithmetic calculations as required by the position. Incumbents may be required to possess a California Driver’s License valid for the operation of any vehicle or equipment they are required to operate.

**Experience** - These abilities normally would be acquired through any combination of progressively responsible training and experience which demonstrates achievement of journey-level skills equivalent to that acquired through completion of a standard painter’s apprenticeship program.

### LEAD PAINTER

Under general supervision, the Lead Painter works with and is in charge of a small group or crew of skilled Painters and semi-skilled assistants involved in completing the work outlined in the series overview. The work of the Lead Painter is distinguished from the Painter by the additional responsibilities of providing lead work direction to several journey-level crafts workers and semi-skilled assistants, laying out and coordinating the work flow for jobs, preparing materials lists and ordering supplies for jobs. Unlike the Supervising Painter, the Lead Painter primarily works as a skilled painter, but has ancillary lead work and project planning responsibilities.

Incumbents typically lay out, direct, and assist with the full range of skilled painting work outlined in the series overview; supervise and instruct a small group or crew of Painters and assistants; instruct others in safety rules and ensure that they are observed; select and prepare lists of materials for jobs; maintain stock and materials in the warehouse; inspect paint jobs to ensure they meet quality requirements and specifications; maintain manual and/or computerized work records and maintenance management systems; prepare manual and/or computerized reports; and may supervise the maintenance of a paint shop. On specific projects, may coordinate the work of other skilled crafts workers.

**TYPICAL QUALIFICATIONS:**

**Knowledge** - In addition to the knowledge required of the Painter, the Lead Painter must possess a working knowledge of effective supervisory practices and techniques.

**Abilities** - In addition to the abilities required of the Painter, the Lead Painter must be able to lead, instruct and coordinate the work of a small group or crew of skilled and semi-skilled workers; accurately estimate costs, supplies and materials needed for jobs; prepare list of materials; ensure work is performed in sequence; maintain records; and prepare more complex reports.

**Experience** - In addition to the experience required of the Painter, the abilities of the Lead Painter normally would be acquired through one to two years of experience as a journey-level painter that included work coordination responsibilities.

### SUPERVISING PAINTER

Under general supervision, the Supervising Painter primarily is responsible for supervising and working with one or more groups or crews of skilled journey-level painters and their semi-skilled assistants in the performance of general painting work outlined in the series overview. The Supervising Painter is distinguished from the Lead Painter by the scope of supervisory, project planning and coordination duties as well as the greater amount of time devoted to these activities.

Incumbents typically prioritize and coordinate the work of multiple crews or projects; assign work to qualified crew members; provide work and safety instructions; provide on-the-job training and instructions to less skilled workers in trade and safety practices; provide input on performance evaluations; monitor work in progress; inspect completed work to ensure it is in compliance with specifications, special instructions and sound trade
practices; develop and maintain manual and/or computerized work record-keeping and/or maintenance management systems; prepare reports; and oversee a paint shop.

Work on new construction and remodels requires: collaborating with engineering and design departments; interpreting complicated plans and drawings; coordinating work schedules and work assignments to meet the overall construction/modification objectives; sequencing of work; ensuring the availability of required materials and equipment; analyzing operations; preparing cost and time estimates; and providing a high level of inspection to ensure appropriate building and safety codes are met. Incumbents also may design minor tenant improvements and coordinate and supervise the work of related trades workers on specific projects.

**TYPICAL QUALIFICATIONS:**

*Knowledge* - In addition to the knowledge required of the Lead Painter, the Supervising Painter must possess a more thorough knowledge of effective supervisory practices and techniques and a working knowledge of job design and work sequencing related to construction projects.

*Abilities* - In addition to the abilities required of the Lead Painter, the Supervising Painter must be able to plan and direct the work of skilled crafts workers and their semi-skilled assistants; determine and coordinate staffing, material and equipment needs for multiple jobs and projects; and ensure accuracy and maintenance of assigned record-keeping systems.

*Experience* - In addition to the experience required of the Lead Painter, the abilities of the Supervising Painter normally would be acquired through two or more years of experience as a journey-level painter, including one to two years in a lead/supervisory capacity.
## LOCKSMITH SERIES

<table>
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<th>Classification Title</th>
<th>Class Code</th>
<th>Date Established</th>
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<td>6642</td>
<td>March 1, 1972</td>
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<td>6643</td>
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### SERIES OVERVIEW:
Locksmiths as defined in this series are journey-level skilled trades workers responsible for the full range of skilled locksmith work including the installation, repair, remodel and maintenance of manual and automated locks, locking systems and security devices; low voltage computerized access control systems; and door openers, closers and hardware. Incumbents install, maintain, repair and adjust all types of locks and their components for campus buildings, rooms, furniture and vehicles; cut and issue keys; may program and issue key cards; implement, troubleshoot, repair and program computerized access control systems; upgrade, troubleshoot and maintain security systems including those interfacing with locking and other building systems; maintain and repair automatic door openers, door closing units, and control gates; service and maintain safes; purchase, store and maintain lock systems, hardware and materials; inspect completed work for conformance with specifications, requirements and compliance with applicable building and safety codes and regulations; inspect related work performed by contractors; estimate cost, time and materials for locksmith projects; participate in the maintenance and operations of a locksmith shop; clean, maintain and service tools and equipment used in the performance of duties; perform all work in accordance with established safety procedures; maintain a safe and clean work environment; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; and consult and work with other trades workers. Incumbents typically hold a license or applicable certification. Work may involve exposure to hazardous materials.

Two progressive classifications are defined within this series, each performing the full range of skilled locksmith work; however, the second level has lead and master key system design responsibilities. Examples of typical activities are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

### LOCKSMITH
Under general supervision, incumbents in this classification perform the full range of skilled journey-level locksmith work as outlined in the series overview. Incumbents in this classification assist in the development of master key systems and the design of special security devices and are independently responsible for the implementation and maintenance of these programs. Incumbents in this classification may also provide instruction and lead direction to unskilled and semi-skilled assistants.

### TYPICAL QUALIFICATIONS:

**Knowledge** - Work requires thorough knowledge of the methods, materials, tools and equipment used in the locksmith trade, including complex access and control systems; a thorough knowledge of all types of locks, fastening devices and related hardware; working knowledge of electrical locking and security systems and devices; and a thorough knowledge of applicable state codes pertaining to the locksmith trade including those related to fire exits, door hardware and fastening devices.
**Abilities** - Must be able to perform journey-level locksmith work; use features of applicable access control systems; read, interpret and work from shop blueprints, plans, drawings and specifications; maintain computerized inventory and master locking systems records; prepare standard reports; provide instruction to unskilled and semi-skilled assistants; read and write at a level appropriate to the position; and perform arithmetic calculations as required by the position. Incumbents may be required to possess a California Driver’s License valid for the operation of any vehicle or equipment they are required to maintain and operate.

**Experience** - These abilities normally would be acquired through any combination of progressively responsible training and experience which demonstrates achievement of journey-level skills equivalent to that acquired through completion of a locksmith’s apprenticeship program.

**Special Requirements** - Incumbents typically hold a license or certification as a locksmith and are required to successfully complete a background check.

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**LEAD LOCKSMITH**

In addition to performing skilled locksmith work, the Lead Locksmith is responsible for providing lead work direction to a small group or crew of skilled Locksmiths, other skilled crafts workers and their assistants as well as the planning, design and oversight of the implementation and maintenance of a campus-wide master lock and key program. Incumbents typically supervise and work with a small group or crew performing locksmith or related work; plan, schedule and assign work; determine material, equipment and staffing needs for projects; monitor work in progress; inspect work to ensure it meets quality requirements and specifications; provide input on performance evaluations; oversee a locksmith shop; serve as the campus expert on all matters pertaining to locks, locking systems and fastening devices; and consult with campus administrators on the types of systems and devices most appropriate for new facilities and major replacements, as well as on the development of a key and access control policy.

**TYPICAL QUALIFICATIONS:**

**Knowledge** - In addition to the knowledge required of the Locksmith, the Lead Locksmith must possess a comprehensive knowledge of master key systems and a working knowledge of effective supervisory practices and techniques.

**Abilities** - In addition to the abilities required of the Locksmith, the Lead Locksmith must be able to develop and implement a master key system; lead, instruct and coordinate the work of a small group or crew of skilled and semi-skilled assistants; determine staffing, material and equipment needs; estimate costs for new locking systems or for replacement systems; analyze and respond appropriately to emergency situations; and maintain more complex manual and/or computerized record-keeping systems.

**Experience** - In addition to the experience required of the Locksmith, the abilities of a Lead Locksmith normally would be acquired through one to two years of experience as a journey-level locksmith that included lead work coordination responsibilities and training in master key systems.
Classification and Qualification

MASON

Class Code: 6616
Date Established: June 30, 1974
Date Revised: July 1, 2000

CLASSIFICATION OVERVIEW:
Masons as defined in this classification are journey-level skilled trades workers responsible for the performance of the full range of skilled masonry work, such as bricklaying, plastering and cement finishing in the alteration, repair, maintenance and renovation of the campus buildings, facilities, equipment and grounds. Examples of typical activities are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

TYPICAL ACTIVITIES:
Under general supervision, incumbents in this classification construct, maintain and repair foundations, pavements, and walks; build retaining walls, planters and shower stalls; cut, set and repair stone, tile and marble; lay brick; reline furnaces; make repairs to plaster and concrete pipelines; advise in the selection and storage of masonry materials and equipment; inspect completed work for conformance with specifications, requirements and compliance with applicable building and safety codes and regulations; inspect related work performed by contractors; estimate cost, time and materials for masonry projects; maintain and service tools and equipment used in the performance of duties; perform all work in accordance with established safety procedures; maintain a safe and clean work environment; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; consult and work with other trades workers; and may provide instruction and lead direction to unskilled and semi-skilled assistants. Work may involve exposure to hazardous materials.

TYPICAL QUALIFICATIONS:

Knowledge - Work requires thorough knowledge of the methods, materials, tools, and equipment used in masonry work; and a thorough knowledge of applicable state safety codes and regulations pertaining to masonry.

Abilities - Must be able to cut, set and repair masonry work; mix and temper lime and cement mortar; line furnaces; cut, drill, and set marble; operate all hand and power tools; determine proper foundation conditions and materials to be used; prepare rough sketches; estimate cost, time and materials of electrical work; maintain records and retrieve data related to work performed using manual and computerized record-keeping systems; prepare standard reports; provide instruction to unskilled and semi-skilled assistants; analyze and respond to emergency situations; read and write at a level appropriate to the position; and perform arithmetic calculations as required by the position. Incumbents may be required to possess a California Driver's License valid for the operation of any vehicle or equipment they are required to maintain and operate.

Experience - These abilities normally would be acquired through any combination of progressively responsible training and experience which demonstrates achievement of journey-level skills equivalent to that acquired through completion of a standard mason's apprenticeship program.
BLACKSMITH
Class Code: 6575
Date Established: May 24, 1973
Date Revised: July 1, 2000

CLASSIFICATION OVERVIEW:
Blacksmiths as defined in this classification are journey-level skilled trades workers responsible for the performance of the full range of skilled blacksmith and metal fabrication work in direct support of various instructional programs and campus maintenance efforts. Examples of typical activities are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

TYPICAL ACTIVITIES:
Under general supervision, incumbents in this classification forge, weld, sharpen, temper, and repair tools and equipment; shoe horses and mules; rivet and cut common metals; maintain a blacksmith shop; advise in the selection, ordering and storing of blacksmithing supplies and equipment; inspect completed work for conformance with specifications, requirements and compliance with applicable building and safety codes and regulations; inspect related work performed by contractors; estimate cost, time and materials for blacksmith projects; clean, maintain and service tools and equipment used in the performance of duties; make rough sketches; perform all work in accordance with established safety procedures; maintain a safe and clean work environment; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; consult and work with other trades workers; and may provide instruction and lead direction to semi-skilled and unskilled assistants. Work may involve exposure to hazardous materials.

TYPICAL QUALIFICATIONS:
Knowledge - Work requires thorough knowledge of the blacksmith trade including tools, equipment and processes; tool and metal tempering, hardening and sharpening; recognized safety practices used in blacksmithing; and applicable state safety codes and regulations.

Abilities - Must be able to operate large capacity steam and air hammers; make minor repairs on metal and iron equipment; establish and maintain cooperative working relationships with students, farm employees and faculty; read, interpret and work from blueprints, plans, drawings, and specifications; make rough sketches; estimate cost, time and materials for blacksmith projects; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; provide instruction to unskilled and semi-skilled assistants; analyze and respond to emergency situations; read and write at a level appropriate to the position; and perform arithmetic calculations as required by the position. Incumbents may be required to possess a California Driver's License valid for the operation of any vehicle or equipment they are required to maintain and operate.

Experience - These abilities normally would be acquired through any combination of progressively responsible training and experience which demonstrates achievement of journey-level skills equivalent to that acquired through completion of a standard blacksmith's apprenticeship program.
FACILITIES SERVICES SERIES

<table>
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<td>Facilities Worker II</td>
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<td>Facilities Maintenance Mechanic</td>
<td>6940</td>
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<td>Farm Maintenance Mechanic</td>
<td>6941</td>
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SERIES OVERVIEW:
The Facilities Services series is comprised of four classifications with varying levels of responsibility for the maintenance, repair, construction and renovation of general and preventive facilities and systems. Work in this series ranges from semi-skilled to skilled, journey-level generalist work in the electro-mechanical and building trades. Assignments typically fall into one or more trade areas involving the installation, maintenance and repair of facilities and mechanical systems and/or construction and facilities renovation. Positions requiring skilled journey-level work with duties primarily falling within one specific trade are not appropriate for this series.

All incumbents clean and maintain materials, tools and equipment used in the performance of duties; perform all work in accordance with established safety procedures; maintain a safe and clean work environment; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; and consult and work with other trades workers. Work may involve exposure to hazardous materials. Incumbents may be required to possess a California Driver’s License valid for the operation of any vehicle or equipment they are required to maintain and operate.

Examples of typical activities for each classification are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

FACILITIES WORKER I

The Facilities Worker I is a semi-skilled general facilities maintenance classification. Incumbents in this classification perform a variety of general and preventive maintenance and repair work that does not require journey-level skills. Incumbents independently perform a variety of semi-skilled facilities and systems maintenance functions or may work under the direction of journey-level crafts worker on complex assignments.

Incumbents typically respond to daily service calls; perform routine preventive maintenance functions for facilities and systems; set up jobs and perform the manual labor preparation; clean, maintain and repair fixtures, equipment and appliances; assist in the installation of facility and systems materials, fixtures and mechanical equipment; assist in electrical work; assist in maintenance and repair of electrical lines and fixtures; assist in the installation, maintenance and repair of plumbing and HVAC systems; assist in facilities renovations and new construction; assist in painting buildings and equipment; participate in construction site/remodel tear down and set up; make simple interior and exterior repairs; make standard furniture and carpet repairs; and perform related facilities and systems support functions.
TYPICAL QUALIFICATIONS:

**Knowledge** - Work requires working knowledge of the common terminology, methods, practices, tools and procedures related to building and facilities services, maintenance and repair and/or a base knowledge of a building/construction or mechanical trade.

**Abilities** - Must be able to perform proficiently a variety of semi-skilled facilities maintenance and repair tasks; operate all applicable tools, equipment and systems; follow standard written instructions and procedures; read and write at a level appropriate to the position; perform simple arithmetic calculations as required by the position; and demonstrate the ability to learn maintenance and repair functions. All positions require the performance of strenuous manual labor.

**Experience** - These abilities normally would be acquired through any combination of experience and training equivalent to six months of experience as a trades assistant or laborer, or six months of hands-on experience in general facilities and systems maintenance and repair work.

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**FACILITIES WORKER II**

Under general supervision, the Facilities Worker II independently performs a wider range of more complex semi-skilled and basic skilled facilities and systems maintenance, repair and renovation work; however, the work of a Facilities Worker II does not require full journey-level skills. In addition to the work performed by the Facilities Worker I, incumbents must be able to perform basic trade work in three or more trades; analyze and troubleshoot problems across multiple trade functions; and perform necessary repairs independently. Compared to the Facilities Worker I, the Facilities Worker II is trained in specific trade tasks which require a broader knowledge in several trades and a basic knowledge of theories, codes, procedures and general trade practices in applicable trade areas. Incumbents work under the direction of a skilled crafts worker on the more complex, trade-related assignments.

Examples of work activities in basic trade areas for this classification may include installing faucets, flush valves and other basic plumbing devices; running DWV piping, soldering pipe and clearing drains; installing outlets and switches; replacing ballasts and fixtures (non-energized systems); pulling wire; installing and adjusting door hardware; installing venetian blinds and fasteners; building basic formwork; installing and replacing windows; sanding, patching, masking and clean-up; setting and pouring concrete; performing basic painting; performing skilled laborer work; and performing routine mechanical maintenance.

TYPICAL QUALIFICATIONS:

**Knowledge** - In addition to knowledge required of the Facilities Worker I, the Facilities Worker II must possess a more comprehensive knowledge of specific methods, practices and tools related to facilities and systems maintenance and repair in areas such as plumbing, HVAC, electrical, carpentry, painting and mechanical systems; semi-skilled and basic skilled knowledge across multiple trades; general knowledge of applicable trade safety practices; working knowledge of building codes; and basic knowledge of electrical theory and mechanical principles.

**Abilities** - In addition to the abilities required of the Facilities Worker I, the Facilities Worker II must demonstrate semi-skilled and basic trade proficiency in multiple trade and maintenance tasks.

**Experience** - In addition to the experience required of the Facilities Worker I, the abilities of the Facilities Worker II normally would be acquired through any combination of experience and training equivalent to three years of hands-on experience in general facilities and systems maintenance and repair, or comparable experience as a trades assistant or laborer with demonstrated proficiency in the required duties.
FACILITIES MAINTENANCE MECHANIC

The Facilities Maintenance Mechanic is a skilled generalist, performing at a journey-level in one trade with strong skills in other trades. Incumbents independently perform a variety of skilled preventive and general maintenance, repair, construction, and renovation work on facilities and systems. The Facilities Maintenance Mechanic is distinguished from the Facilities Worker classifications by the independent performance of skilled, journey-level trade work, particularly in the electro-mechanical trades.

Incumbents typically operate, test, install, repair and perform corrective and preventive maintenance on mechanical facilities equipment and systems including HVAC and plumbing systems; perform electrical maintenance and repair work including work on low voltage control systems; use computerized maintenance systems to ensure preventive maintenance program objectives are met; perform a wide range of facilities renovation, maintenance, and repair work; estimate costs of materials and labor; determine the priority for requisitioning materials and supplies; may perform welding to make repairs and fabricate and construct parts; may monitor contractor performance and work progress; respond to routine maintenance and service requests; and provide instruction and direction to unskilled and semi-skilled assistants.

TYPICAL QUALIFICATIONS:

Knowledge - Work requires thorough knowledge of the methods, materials, equipment and tools used in one skilled trade area; working knowledge of materials, methods, equipment and tools in related trade areas pertaining to facilities, systems, construction and renovation; thorough knowledge of generally accepted trade practices in trade specialty; working knowledge of computerized maintenance and building automation systems; working knowledge of applicable building and safety codes and regulations related to facilities, systems and renovations.

Abilities - Must be able to demonstrate journey-level skill in one trade and strong skills in other applicable trades; operate construction and related equipment; use considerable judgment and discretion in performing duties; read, interpret and work from blueprints, plans, drawings, and specifications; make rough sketches; estimate cost, time and materials of maintenance, repair and renovation work; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; provide instruction to unskilled and semi-skilled assistants; analyze and respond to emergency situations; read and write at a level appropriate to the position; and perform arithmetic calculations as required by the position.

Experience - These abilities normally would be acquired through four years of increasingly responsible experience leading to journey-level skills in a mechanical or facilities/building trade, or any equivalent combination of training and experience as a facilities and systems mechanic which demonstrates the achievement of journey-level skills equivalent to that acquired through completion of an applicable apprenticeship program.

FARM MAINTENANCE MECHANIC

The work of the Farm Maintenance Mechanic is distinguished from the Facilities Maintenance Mechanic by the complexity of the facilities and utility systems maintained. Incumbents are skilled generalists, capable of independently performing at a journey-level in one or more mechanical trades and/or at a senior trade level in the maintenance, modification, design and repair of mechanical equipment, machinery, utility systems, buildings and facilities found on a diversified farm. Incumbents typically perform general and preventive facilities and systems maintenance, repair, and renovation work required for farm facilities. Work typically includes renovating classrooms; surveying ground sites; directing the construction of forms and pouring of cement; maintaining, servicing and repairing of irrigation, domestic pressure, and animal waste lift pumps; maintaining, servicing and repairing of HVAC and plumbing systems; and performing all electric and gas welding and cutting. Additionally, incumbents develop job specifications, material requests and cost estimates for assigned jobs; maintain inventory of parts and materials; recommend purchase and storage of parts and equipment; instruct others in safety rules
and ensure they are observed; maintain and prepare work records; supervise a maintenance shop; and may work with students assigned to the farm or similar maintenance and construction projects.

Incumbents also may be assigned lead responsibilities for other journey-level crafts workers and/or semi-skilled assistants. Lead work direction involves making work assignments, laying out and coordinating the work flow for jobs, and preparing materials lists and supplies for jobs.

**TYPICAL QUALIFICATIONS:**

**Knowledge** - In addition to the knowledge required of the Facilities Maintenance Mechanic, the Farm Maintenance Mechanic requires a more thorough and specialized knowledge of the methods, materials, tools and equipment involved in facility systems and mechanical maintenance, construction and renovation; thorough and comprehensive knowledge of building construction principles, methods and techniques including foundations, framing, maintenance and repair; and a more comprehensive knowledge of applicable state and federal codes and regulations pertaining to facilities, plumbing systems, HVAC systems, electrical systems, and concrete and structural aspects of buildings.

**Abilities** - In addition to the abilities required of the Facilities Maintenance Mechanic, the Farm Maintenance Mechanic must be able to demonstrate journey-level skill in a mechanical or related trade; develop construction and renovation plans; develop job specifications, material requests and cost estimates for assigned jobs; perform skilled to highly skilled repair, maintenance and modification work; maintain records; and prepare more complex reports.

**Experience** - In addition to the experience required of the Facilities Maintenance Mechanic, the abilities of the Farm Maintenance Mechanic normally would be acquired through two years of journey-level experience as a skilled crafts worker focused on mechanical maintenance, repair and renovation of more complex facilities and systems.
FACILITIES PROJECT SUPERVISOR
Class Code: 6265
Date Established July 1, 2000

CLASSIFICATION OVERVIEW:
The Facilities Project Supervisor classification is designed for positions responsible for supervising and coordinating the work of one or more small groups or crews consisting of skilled multi-trade crafts workers and assistants. Incumbents are working supervisors who are skilled in one or more trades and coordinate and supervise the work of one or more small groups or crews involved in the maintenance, repair, construction and renovation of various facilities and structures. Incumbents also provide comprehensive technical project leadership; act as key liaisons with customers; coordinate job estimates; and ensure supplies and materials are available for jobs. Examples of typical activities are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

DISTINGUISHING CHARACTERISTICS:
Unlike other supervising classifications, the Facilities Project Supervisor is responsible for supervising one or more small groups or crews comprised of semi-skilled and skilled journey-level crafts workers from more than one trade. The small groups or crews are typically engaged in performing maintenance, repair, construction and/or renovation work.

TYPICAL ACTIVITIES:
Incumbents typically prioritize and coordinate the work of one or more groups or crews or projects; assign work to qualified crew members; provide work and safety instructions; provide on-the-job training and instructions to less skilled workers in trade and safety practices; provide input on performance evaluations; monitor work in progress; inspect completed work to ensure it is in compliance with specifications, special instructions and sound trade practices; develop and maintain manual and/or computerized work record-keeping and/or maintenance management systems.

Work on new construction and remodels requires: collaborating with engineering and design departments; interpreting complicated plans and drawings; coordinating work schedules and work assignments to meet the overall construction/modification objectives; sequencing of work; ensuring the availability of required materials and equipment; analyzing operations; coordinating with other leads and supervisors in scheduling specific trade workers and sequencing of work on projects; preparing cost and time estimates; ensuring accuracy and currency of computerized record-keeping and/or maintenance management systems; and providing a high level of inspection to ensure appropriate building and safety codes are met. Incumbents also may design minor tenant improvements.

TYPICAL QUALIFICATIONS:
Knowledge - Work requires thorough knowledge of methods, materials, tools and equipment used in the building and construction trades; effective supervisory practices and techniques; job design and work sequencing related to construction projects; and applicable state and federal safety, building and construction codes and regulations.
Abilities - Must possess journey-level skill in a building or construction trade. Must be able to operate all applicable building tools and equipment; plan and direct the work of skilled crafts workers and their assistants; determine and coordinate staffing, material and equipment needs for multiple jobs and projects; perform basic design work; read blueprints; work from plans and specifications; prepare rough sketches; analyze and respond appropriately to emergency situations; ensure accuracy and maintenance of assigned record-keeping systems; prepare reports; read and write at a level appropriate for the position; and perform arithmetic calculations as required by the position. Incumbents may be required to possess a California Driver’s License valid for the operation of any vehicle or equipment they are required to maintain and operate.

Experience - These abilities normally would be acquired through two years of experience working as a journey-level crafts worker in one or more building trades including one year in a lead/supervisory capacity. Must have demonstrated achievement of journey-level skills equivalent to those acquired through the completion of an applicable apprenticeship program.
EQUIPMENT MECHANIC SERIES

<table>
<thead>
<tr>
<th>Classification Title</th>
<th>Class Code</th>
<th>Date Established</th>
<th>Date Revised</th>
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<tr>
<td>Mechanics Helper</td>
<td>6837</td>
<td>1931</td>
<td>July 1, 2000</td>
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<tr>
<td>Automotive/Equipment Mechanic</td>
<td>6270</td>
<td>July 1, 2000</td>
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<td>Lead Automotive/Equipment Mechanic</td>
<td>6852</td>
<td>April 1, 1978</td>
<td>July 1, 2000</td>
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SERIES OVERVIEW:
Classifications in this series are distinguished by their focus on the preventive maintenance, repair and modification of automotive, maintenance, construction and/or other power-driven equipment.

Three progressive classifications are defined within the series. All incumbents clean and maintain materials, tools and equipment used in the performance of duties; perform all work in accordance with established safety procedures; maintain a safe and clean work environment; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; and consult and work with other trades workers. Work may involve exposure to hazardous materials. Incumbents are required to possess a California Driver’s License valid for the operation of any vehicle or equipment they are required to maintain and operate.

Examples of typical activities for each classification are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

MECHANICS HELPER

Under supervision, the Mechanics Helper is involved in the servicing, maintaining and repairing of automotive, maintenance and/or construction equipment. This classification is distinguished from the Automotive/Equipment Mechanic by the fact that the work performed independently does not require journey-level mechanic skills. Incumbents may assist in overhauling, repairing or adjusting engines, transmissions, ignition, electrical, fuel and cooling systems, and related component systems. Incumbents may also operate automotive and other equipment and assist in directing less skilled workers.

TYPICAL QUALIFICATIONS:

Knowledge - Work requires general knowledge of the names of automotive parts, machine parts and automotive and heavy equipment; working knowledge of materials, machines and hand tools, and equipment and procedures used in the maintenance and repair of these parts and equipment; and working knowledge of applicable safety practices and regulations.

Abilities - Must be able to identify automotive, equipment and machine parts; perform the less skilled tasks involved in repairing and servicing automotive and heavy mechanical equipment; read and write at a level appropriate to the position; and perform simple arithmetic calculations as required by the position.

Experience - These abilities normally would be acquired through a combination of experience and vocational/trade schooling such as completion of a recognized vocational course in automotive or heavy construction equipment technology and/or equivalent experience in the duties outlined above.
AUTOMOTIVE/EQUIPMENT MECHANIC

Under general supervision, the Automotive/Equipment Mechanic performs skilled work in the overhaul, repair, maintenance, service and adjustment of campus automotive, heavy maintenance, heavy construction and farm equipment. The work of the Automotive/Equipment Mechanic is distinguished from the Mechanics Helper by the independent performance of skilled, journey-level automotive and/or heavy equipment mechanical work.

Incumbents typically inspect automotive, maintenance, construction and/or farm equipment to determine necessary corrective action; perform diagnostic tests using engine analyzers; make minor-to-major repairs to automotive and/or equipment; fabricate, construct and/or modify new or special equipment, mechanical, engine and body parts; install and repair special equipment; operate and maintain tools, machinery and computerized systems used in the maintenance, repair and fabrication of automotive, maintenance and/or construction equipment; troubleshoot and repair all systems and components; perform smog tests; respond to emergency calls; may repair pump and compressor engines; perform minor welding and brazing work; estimate the cost of materials and labor for maintenance and repairs; inspect completed work to ensure compliance with standard trade practices; maintain vehicle inspection, maintenance and repair records using manual and/or computerized record-keeping systems; prepare standard reports; provide instruction and lead direction to semi-skilled and unskilled assistants; and may serve as the campus vehicle inspector.

TYPICAL QUALIFICATIONS:

Knowledge - Work requires thorough knowledge of automotive and/or equipment mechanics including electrical systems and brake and engine overhaul; thorough knowledge of methods, tools, materials, equipment and computerized systems used in the maintenance, adjustment and repair of engines, equipment and accessories; working knowledge of wiring and electrical theory and engine principles; working knowledge of hydraulic systems; and working knowledge of applicable state and federal regulations pertaining to automotive and other power-driven equipment, including applicable smog regulations.

Abilities - Must be able to make skilled repairs to applicable automotive, maintenance and/or construction equipment; diagnose mechanical and electrical malfunctions; perform a variety of skilled repairs on equipment; work from blueprints, drawings and sketches to fabricate parts; perform required welding; inspect vehicles and equipment and determine extent of repairs; estimate cost, time and materials of mechanical work and repairs; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; provide instruction to unskilled and semi-skilled assistants; analyze and respond appropriately to emergency situations; read and write at a level appropriate to the position; and perform arithmetic calculations as required by the position.

Experience - These abilities normally would be acquired through any combination of progressively responsible training and experience as an automotive and/or equipment mechanic which demonstrates achievement of journey-level skills equivalent to that acquired through completion of a standard apprenticeship program.

LEAD AUTOMOTIVE/EQUIPMENT MECHANIC

Under general supervision, the Lead Automotive/Equipment Mechanic works with and is in charge of a small group or crew of skilled automotive or equipment mechanics and semi-skilled assistants. The work of the Lead Automotive/Equipment Mechanic is distinguished from the Automotive/Equipment Mechanic by the performance of lead duties and/or a wider variety of highly skilled work in the maintenance, repair, design and modification of automotive, maintenance and construction equipment, machinery and tools.

Incumbents typically lay out, direct, and assist with the full range of skilled mechanic work outlined in the series overview; supervise, instruct and work with a small group or crew of Automotive/Equipment Mechanics and assistants; establish priorities for automotive and equipment repair and maintenance; instruct mechanics and equipment operators in the proper operation and servicing of their equipment; recommend specialized jobs to
be contracted out; ensure preventive maintenance program is accomplished and that manufacturer obligations are met; serve as the liaison with customers and vendors; instruct others in safety rules and ensure that they are observed; select and prepare lists of materials for jobs; maintain inventory of parts and materials; recommend purchase and storage of parts and equipment; inspect completed work for conformance with specifications, requirements and compliance with applicable safety codes and regulations; inspect related work performed by contractors; draw diagrams and sketches of work to be performed; maintain manual and/or computerized work records and systems; prepare manual and/or computerized reports; and may supervise the maintenance of an automotive/equipment maintenance shop. On specific projects, may coordinate the work of other skilled crafts workers.

TYPICAL QUALIFICATIONS:

Knowledge - In addition to the knowledge required of the Automotive/Equipment Mechanic, the Lead Automotive/Equipment Mechanic must possess a working knowledge of effective supervisory practices and techniques.

Abilities - In addition to the abilities required of the Automotive/Equipment Mechanic, the Lead Automotive/Equipment Mechanic must be able to lead, instruct and coordinate the work of a small group or crew of skilled and semi-skilled workers; perform skilled to highly skilled repair, maintenance and modification work; accurately estimate costs, supplies and materials needed; maintain records; and prepare more complex reports.

Experience - In addition to the experience required of an Automotive/Equipment Mechanic, the abilities of the Lead Automotive/Equipment Mechanic normally would be acquired through one to two years of experience as a journey-level automotive or equipment mechanic that included work coordination responsibilities.
## HVAC SERIES

<table>
<thead>
<tr>
<th>Classification Title</th>
<th>Class Code</th>
<th>Date Established</th>
<th>Date Revised</th>
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<tr>
<td>Operating Engineer</td>
<td>6703</td>
<td>November 15, 1957</td>
<td>July 1, 2000</td>
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<td>Building Service Engineer</td>
<td>6702</td>
<td>June 30, 1974</td>
<td>July 1, 2000</td>
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<tr>
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<td>6699</td>
<td>June 30, 1974</td>
<td>July 1, 2000</td>
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<td>Facilities Control Specialist</td>
<td>6260</td>
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<tr>
<td>Supervising Building Service Engineer</td>
<td>6700</td>
<td>October 1, 1971</td>
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## SERIES OVERVIEW:

The Heating, Ventilating and Air Conditioning (HVAC) series is comprised of five classifications with varying levels of responsibility for the operation, maintenance and repair of HVAC and refrigeration equipment/systems and related building automation systems. Incumbents in this series also maintain, service, inspect and repair the mechanical, electrical, electronic and digital controls associated with these systems, either in a centralized plant or in decentralized centers across a campus.

All incumbents must be able to proficiently use building automation systems to diagnose and troubleshoot problems; estimate cost, time and materials for projects; participate in the maintenance and operations of applicable heating and air conditioning systems and equipment; maintain and service tools and equipment used in the performance of duties; perform all work in accordance with established safety procedures and maintain a safe and clean work environment; maintain records and logs; retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; and consult and work with other trades workers. Work may involve exposure to hazardous materials and some positions will require EPA approved certification in refrigerant recovery.

Examples of typical activities for each classification are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

### OPERATING ENGINEER

The Operating Engineer primarily is responsible for the operation, maintenance and repair of boilers and chillers for the heating and cooling systems on a campus or major facility. Incumbents also may be responsible for the operation, service and repair of power plants involving low, medium or high speed revolution cogeneration equipment. The Operating Engineer is distinguished from the Building Service Engineer in that the Operating Engineer typically works with stationary or more central equipment, while the Building Service Engineer must service a wider range of HVAC systems and equipment.

Under general supervision, incumbents monitor, operate, and maintain boiler and chiller systems and their components (including underground components), power plant equipment (such as reciprocating engines), and fire and secure high pressure boilers; respond to calls; manipulate features of building automation systems to adjust space temperatures and air intake to optimize comfort while conserving energy; affect building automation programming schedules for the heating and cooling of campus facilities; conduct chemical analyses for water treatment for both chillers and boilers; switch plant to manual operation in case of a power failure; perform some soldering and welding on plant equipment and pipelines; and may provide work direction to semi-skilled and unskilled assistants.
TYPICAL QUALIFICATIONS:

Knowledge - Work requires thorough knowledge of high and low pressure boiler and chiller systems, electrical distribution and transfer systems and equipment, and auxiliary equipment; thorough knowledge of the methods, materials and tools used in the operation of applicable systems; working knowledge of system water testing and treatment procedures; and working knowledge of applicable building automation systems and interfaces.

Abilities - Must be able to operate boilers and chillers safely and efficiently; quickly identify and correct malfunctions; monitor energy consumption and adjust equipment and system features; operate computer-based energy management systems and interfaces with main building automation system; read, interpret and work from blueprints, manuals, diagrams and operating procedures; estimate cost, time and materials of projects; maintain logs and records; retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; provide instruction to unskilled assistants; analyze and respond appropriately to emergency situations; read and write at a level appropriate to the position; and perform arithmetic calculations as required by the position.

Experience - These abilities normally would be acquired through the equivalent to two years of hands-on experience in the operation, maintenance and repair of boiler and chiller systems, cogeneration systems, and related mechanical equipment. Completion of a certificate or other vocational training may be substituted for hands-on experience.

BUILDING SERVICE ENGINEER

The Building Service Engineer is distinguished from an Operating Engineer by the independent and on-going performance of maintenance and repair work on a wider range of heating, ventilating, plumbing, electrical, mechanical, refrigeration, air conditioning, and water systems. Compared to the Air Conditioning/Refrigeration Mechanic, the Building Service Engineer performs less sophisticated and comprehensive work on complex refrigeration and air conditioning systems. The work of an Air Conditioning/Refrigeration Mechanic requires a more comprehensive knowledge of these systems and the applicable regulations.

Under general supervision, incumbents operate, maintain, repair and inspect heating, ventilating, air conditioning, refrigeration and water systems and equipment; test, adjust, and calibrate boiler and air conditioning machinery and mechanical, electrical, pneumatic, and/or microprocessor control instruments; test and chemically treat boiler, condenser, and cooling tower water and water from other systems; maintain, inspect, diagnose and make emergency repairs to steam, natural gas, water, refrigerant, air and oil distribution systems; regularly use features of building automation systems to diagnose and troubleshoot problems in the HVAC systems while optimizing energy usage; monitor building automation systems data and adjust system accordingly; respond to service requests to adjust air flow, temperature and humidity balances for individual rooms, building areas or buildings; maintain swimming pools; troubleshoot basic elevator problems; maintain logs of maintenance and repairs using manual and computerized record-keeping systems; and may instruct and lead semi-skilled or unskilled assistants. Incumbents also repair and replace bearings, shafts, seals, rings and electrical wiring and install central system parts, gauges, valves and pipes which requires the application of journey-level skills in one or more of the applicable trades. Additionally, incumbents may rotate through various shift assignments at stations either in a central plant or in the utilities centers of individual buildings or campus centers for the operation, service and repair of low, medium or high-speed revolution cogeneration equipment.

TYPICAL QUALIFICATIONS:

Knowledge - Work requires thorough knowledge of high and low pressure boilers, and heating, pneumatic, ventilating, air conditioning, refrigeration and other mechanical equipment; thorough knowledge of the methods, tools and materials used in the operation, maintenance and repair of such equipment; general knowledge of ventilation principles, thermal dynamics, and closed water systems; and working knowledge of energy management systems including the ability to understand and use system features.
Abilities - Must be able to install, operate and repair HVAC equipment and systems; demonstrate a high degree of mechanical skill equivalent to journey-level in one or more related trades such as plumbing, pipe fitting, electrical, or air conditioning; read, interpret and work from blueprints, plans, drawings and specifications; make rough sketches; estimate cost, time and materials of mechanical work; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; provide instruction to unskilled and semi-skilled assistants; analyze and respond appropriately to emergency situations; read and write at a level appropriate to the position; and perform arithmetic calculations as required by the position.

Experience - These abilities normally would be acquired through two years of journey-level experience in the operation, maintenance and repair of boiler, heating, ventilating, refrigeration and air conditioning equipment and systems or the equivalent combination of formal course work in mechanical technology and hands-on experience.

AIR CONDITIONING/REFRIGERATION MECHANIC

The Air Conditioning/Refrigeration Mechanic is distinguished from other classifications in the series by responsibility for the full range of service, maintenance and repair on more complex refrigeration and associated HVAC systems and equipment. The work of an Air Conditioning/Refrigeration Mechanic requires a more comprehensive knowledge of refrigeration and air conditioning systems than the refrigeration and air conditioning work performed by the Building Service Engineer. Incumbents in this classification must be thoroughly familiar with all safety codes and regulations related to the installation and operation of refrigeration and air conditioning systems. Positions in this classification require certification from the Environmental Protection Agency in the use and disposal of compressed refrigerants.

Under general direction, incumbents install, troubleshoot, calibrate, service, repair and maintain refrigeration and HVAC systems, equipment, instruments and controls using electrical, electronic, pneumatic or digitally controlled systems; oil, clean, adjust, overhaul, and repair motors, condensers, compressors, oil and vacuum pumps, and similar equipment; perform major overhauls involving disassembly and inspection of all parts, replacement of defective and worn parts, reassembly of equipment instruments and/or controls, and the testing of equipment to ensure proper functioning; locate and diagnose malfunctions using a wide variety of test equipment and instruments; analyze the efficiency of campus refrigeration and air conditioning systems and recommend action for improvement; respond to service requests; diagnose problems in the distribution of air to individual rooms and buildings and make necessary adjustments; use building automation system to diagnose and troubleshoot problems in HVAC and refrigeration systems; maintain inventory and records; order parts and supplies; and train and provide work direction to skilled and semi-skilled workers.

TYPICAL QUALIFICATIONS:

Knowledge - Work requires thorough knowledge of the theory and operation of major types of refrigeration and air conditioning equipment and of the materials, equipment and techniques used in the repair and maintenance of such equipment; and working knowledge of electrical voltage, plumbing refrigeration, electrical and plumbing codes, thermodynamics and automated energy/environmental management systems.

Abilities - In addition to the abilities required of a Building Service Engineer, the Air Conditioning/Refrigeration Mechanic must be able to use judgment and discretion in determining the methods and priorities of work orders; perform skilled electrical and plumbing work; diagnose and repair major malfunctions in the complex multi-zone air conditioning systems; devise and control air distribution efficiently with maximum comfort; and diagnose and repair the full range of refrigeration equipment including centrifugal and absorber equipment and/or screw, scroll and reciprocating refrigeration equipment.
Experience - These abilities normally would be acquired through progressively responsible experience in the installation, adjustment, maintenance and repair of commercial and domestic refrigeration and air conditioning systems involving modulatory and safety controls, thermostats, humidifiers and duct stats as well as one year of experience in the installation and repair of central multi-zone air conditioning systems. In addition, journey-level skill equivalent to that acquired through the completion of a refrigeration or air conditioning mechanic’s apprenticeship program is required.

Special Requirements - Incumbents typically must possess certification in the use of refrigerants.

FACILITIES CONTROL SPECIALIST

This classification is designed for those positions primarily responsible for the installation, maintenance, adjustment and repair of electric, electronic, pneumatic and digitally controlled building automation systems which manage the most complex HVAC and refrigeration systems. Incumbents monitor, troubleshoot, design, modify, calibrate and program system features; and respond to technical and mechanical problems, either remotely or on-site. Incumbents must be thoroughly conversant in the software operation of the applicable building automation system and have journey-level skills and experience to allow them to diagnose, repair and maintain complex HVAC systems and their components. The Facilities Control Specialist is distinguished from the Building Service Engineer and Air Conditioning/Refrigeration Mechanic in that the primary focus of this classification is on the monitoring and maintenance of building automation systems rather than on the operation, maintenance and repair of these systems. While some manual repairs and adjustments may be performed directly on HVAC and refrigeration systems and equipment, these are ancillary rather than primary duties for the Facilities Control Specialist.

Under limited supervision, incumbents install, modify and adjust computer-based heating, ventilation and air conditioning equipment and systems; fabricate and implement programs or building control strategies for digitally controlled or global supervisory controlled systems; troubleshoot, design and modify programs for building automation systems; repair and maintain individual hardware and software components of applicable systems; perform major-to-minor overhauls which include disassembling and inspecting of all parts, replacing worn and defective parts, reassembling of all equipment and controls, and testing to ensure proper function; perform major-to-minor repairs of microprocessor-based automation system that monitors and controls building environments; respond to requests for service; diagnose and troubleshoot system problems and correct as necessary; may serve as the department specialist on building automation systems; and train others on the troubleshooting, overhaul, repair, calibration, and testing of controls to facilitate the maintenance of systems.

TYPICAL QUALIFICATIONS:

Knowledge - In addition to the knowledge requirements of the Building Service Engineer and/or Air Conditioning/Refrigeration Mechanic, the Facilities Control Specialist must possess a thorough understanding of electric, electronic, pneumatic and digitally controlled building automation systems, including a thorough knowledge of assigned building automation systems.

Abilities - In addition to the abilities of the Building Service Engineer and/or Air Conditioning/Refrigeration Mechanic, the Facilities Control Specialist must be able to use of the building automation system’s programming features to design, modify and implement programs to achieve facilities management’s goals, as well as to perform remote and hands-on troubleshooting, intervention and repair, as needed.

Experience – In addition to the experience required of the Building Service Engineer and/or Air Conditioning/Refrigeration Mechanic, the abilities of a Facilities Control Specialist normally would be acquired through four or more years of experience in the following areas:

a) Progressively responsible skilled journey-level experience diagnosing, repairing and maintaining large, complex and sophisticated heating, ventilation, refrigeration and air conditioning and water treatment systems.

b) Experience installing, inspecting, servicing, repairing, replacing and calibrating building automation and control systems.

c) Experience using programming features of building automation systems.
SUPERVISING BUILDING SERVICE ENGINEER

Under general supervision, the Supervising Building Service Engineer primarily is responsible for supervising and working with one or more small groups or crews of skilled and semi-skilled workers involved in the installation, operation, maintenance, and repair of mechanical systems including heating, ventilating, refrigeration, air conditioning, power, water and sewer systems and equipment throughout a campus. The Supervising Building Service Engineer is distinguished from other classifications in this series by the scope of supervisory, project planning and coordination duties and the greater amount of time devoted to these activities.

Incumbents typically prioritize and coordinate the work of multiple crews or projects; assign work to qualified crew members; provide overall technical leadership; determine necessary materials, supplies, equipment and staffing to meet work orders and preventive maintenance schedule; provide work and safety instructions; provide on-the-job training and instructions to less skilled workers in trade and safety practices; provide input on performance evaluations; monitor work in progress; inspect completed work to ensure it is in compliance with specifications, special instructions and sound trade practices; develop and maintain manual and/or computerized work record-keeping and/or maintenance management systems; and prepare reports.

Work on new construction and remolds requires: collaborating with engineering and design departments; interpreting complicated plans and drawings; coordinating work schedules and work assignments to meet the overall construction/modification objectives; sequencing of work; ensuring the availability of required materials and equipment; analyzing operations; preparing cost and time estimates; and providing a high level of inspection to ensure appropriate building and safety codes are met. Incumbents also may design minor tenant improvements and coordinate and supervise the work of related trades workers on specific projects.

TYPICAL QUALIFICATIONS:

Knowledge – In addition to the knowledge required of the Building Service Engineer, the Supervising Building Service Engineer must possess a thorough knowledge of effective supervisory practices and techniques; working knowledge of job design and work sequencing related to renovation and installation projects; and thorough knowledge of the applicable state and federal safety codes and regulations pertaining to mechanical and HVAC systems.

Abilities – In addition to the abilities required of the Building Service Engineer, the Supervising Building Service Engineer must possess journey-level skills in a mechanical and/or HVAC trade. Also, must be able to maintain currency in applicable industrial safety orders and regulations pertaining to facilities, HVAC and related equipment; plan and direct the work of skilled crafts workers and semi-skilled workers; determine and coordinate staffing, material and equipment needs for multiple jobs and projects; perform basic design work; read blueprints and work from plans and specifications; prepare rough sketches; read and interpret complex operating manuals; analyze and respond appropriately to emergency situations; ensure accuracy and maintenance of assigned record-keeping systems; prepare more complex reports; read and write at a level appropriate to the position; and perform arithmetic calculations as required by the position.

Experience – In addition to the experience required of the Building Service Engineer, the abilities of the Supervising Building Service Engineer normally would be acquired through two or more years of experience working as a journey-level crafts worker in one or more applicable mechanical or related trades, including one to two years in a lead/supervisory capacity.
Power Plant Operator

Class Code 6685
Date Established 01-01-88
Occupation Index Reference B-5

DEFINITION:

Under general direction, incumbents of positions in the class operate, service and perform maintenance activities following appropriate safety procedures on various mechanical equipment such as gas turbines, generators, gas compressors, air emission systems and water purifiers in a campus power plant. Incumbents of positions operate and perform maintenance on other related power plant equipment such as boilers, diesel or gas reciprocating engines, and other mechanical auxiliary equipment. Incumbents of positions monitor instrumentation gauges for operating problems; operate and monitor the power plant’s computer-based management system as it interfaces with the Energy Management System (EMS); endeavor to coordinate the operation of power plant equipment in order to produce the optimum amount of energy in the most cost-effective manner; and perform other related duties as required.

DISTINGUISHING CHARACTERISTICS:

The Power Plant Operator class encompasses positions that operate, service and render repairs following appropriate safety procedures to mechanical equipment in campus power plants. The Power Plant Operator class is distinguished from the Operating Engineer by: the type of mechanical equipment that is operated and serviced; the additional training and knowledge that is required to operate and service such equipment: the degree of independence and responsibility that the position has in ensuring that the optimum amount of energy is produced in the most cost-effective manner; the fact that such positions function in power plants which typically produce at least 500 kilowatts of electricity, and where the steam pressure is greater than 15 pounds per square inch (PSI) or the hot water temperature is greater than 250° Fahrenheit (F).

The Power Plant Operator class differs from the Building Service Engineer class by the fact that the Power Plant Operator specializes in the operating, servicing and maintaining of high speed revolution cogeneration, system equipment. The Building Service Engineer, on the other hand, works with a wider range of equipment in maintaining, servicing, repairing and inspecting heating, ventilating, plumbing, electrical, mechanical and air conditioning systems. The Power Plant Operator, however, must be particularly aware of safety precautions, as such high speed revolution equipment produces at least 500 kilowatts of electricity with steam pressures over 15 PSI or water temperatures over 250° F.
Unlike the Operating or Building Service Engineer, the Power Plant Operator spends a majority (50%) of time on operating, servicing and rendering repairs to gas turbines and auxiliary mechanical equipment such as compressors, generators, water purifiers and air emission systems. The performance of these duties requires additional classroom and hands-on training. Although the Power Plant Operator may also operate, service and render repairs to other mechanical equipment such as boilers or gas/diesel reciprocating engines, these duties usually do not occupy a majority of the position’s time, nor do they require as extensive training or knowledge. An exception to this rule may be when positions are located in power plants that produce more than 500 kilowatts of electricity or where the steam pressure is greater than 15 PSI or the hot water temperature is greater than 250° F. Incumbents in positions that spend a majority of time operating, servicing and rendering repairs to gas or diesel reciprocating engines in a power plant producing less than 500 kilowatts of electricity or lower steam pressures and hot water temperatures are more appropriately classified as Operating Engineers.

Examples of Typical Activities:
Incumbents of positions in this class are responsible for operating, maintaining, repairing, inspecting, monitoring and documenting, as necessary, mechanical equipment such as gas turbine engines, gas compressors, waste heat boilers with economizers, package or built-up water tube boilers with or without economizers, diesel/natural gas reciprocating engines, boiler feed and condensate water systems, cooling towers and systems, deaerating feed water tanks, boiler feed and condensate pumps, boiler feed water and condensate return systems, 12-volt starter battery packs, electrical switch gears, reverse osmosis water purification systems, deionized NOx water systems, automatic water softeners, fuel oil supply and transfer systems, air compressors and systems and similar apparatus; and perform preventive and corrective maintenance on such equipment.

Incumbents assist in the operation, maintenance, repair and inspection of heating, air conditioning, refrigeration, ventilation and water treatment equipment as it pertains to cogeneration or power systems; examples include: hot water boilers, chillers, condensers, compressors, circulating water pumps, blower fans, valves, ducting, gauges and manhole covers; and may also render emergency repairs to steam, natural gas, water and air systems and oil distribution systems. Incumbents are also responsible for proper distribution of the electrical system and the electricity produced by the power plant, plus the proper transfer from on-station usage to alternate users.

Incumbents may repair and replace bearings, shafts, seals, rings and electrical wiring in the installation of central system parts, gauges, valves and pipes which require the application of appropriate specialized skills and knowledge.

Incumbents monitor instrumentation gauges for natural gas leaks, turbine and generation bearing temperatures, turbine and generator vibration, resistivity of deionized water and liquid/gas fuel valve positions; test, adjust and calibrate boiler and turbine control systems; make sophisticated balance and vibration checks on gas turbine engine, diesel engine and gas compressor; operate, calibrate and maintain the oxygen trim systems on package boilers; monitor and check natural gas pressures from the main distribution system; monitor electrical loads; and follow established safety procedures in performing all duties.

Incumbents sample and treat fuel oil by introducing additives as prescribed by dosage charts; make visual observations of turbine exhaust in order to evaluate and correct exhaust to maintain acceptable emission levels.

Incumbents operate the power plant’s computer-based management system as it interfaces with the main Energy Management System (EMS); monitor computer functions to start, stop and control the kilowatt output of the generator through electrical control systems; and interpret input/output energy calculations and equipment efficiency calculations.

Incumbents may rotate through various shift assignments in the central power plant or be required to tend package power plants located at various sites within the campus.
MINIMUM QUALIFICATIONS:

Knowledge and Abilities:
General knowledge of high and low pressure boilers, gas turbines, reciprocating engines, electrical distribution and transfer equipment, reverse osmosis water systems, computer-based management and energy management systems, fuel oil test equipment, boiler feed water test equipment, electrical/electronic pneumatic and hydraulic control systems, air quality control equipment, ventilation, heating and air conditioning systems; and the methods, safety procedures, tools, materials and equipment used in the operation, maintenance and repair of such equipment.

Ability to: operate, repair and maintain the above identified equipment following appropriate safety procedures; repair and replace bearings, shafts, seals, rings and electrical wiring in the installation of central system parts, gauges, valves and pipes; ensure that all safety factors are met while operating equipment and tools; follow emergency procedures during a utility outage in order to return power back successfully; interpret and work from blueprints, manuals, diagrams and operating procedures; interpret pressure, compound vacuum and temperature gauges, monitor and interpret data transmitted through the power plant control and energy management computer printouts; operate power plant’s computer-based management system as it interfaces with the Energy Management System (EMS); analyze situations accurately and take prompt action during emergencies; interpret input/output energy calculations and equipment efficiency calculations; and read and write at a level appropriate to the duties of the position.

Experience:
Equivalent to successful completion of an on-the-job training program in the operation, maintenance and minor repair of gas turbines, generators, gas compressors, air emission systems and water purifiers in a power plant and cogeneration system. Experience and/or training in the operation of a power plant’s computer-based management system is desirable.

Equivalent to two years experience in the operation, maintenance and repair of boilers, diesel or gas reciprocating engines and other related mechanical equipment.

Completion of a terminal degree/certificate program from a recognized educational institution in mechanical technology which included the actual operation of boilers, gas or reciprocating engines may substitute for up-to-one year of the required experience.

Prospective applicants who have not had the experience listed may be considered eligible based on other equivalent evidence of meeting the above minimum qualifications.

Work Week Group: 1
Premium O/T: Yes
Shift Differential: Yes
Employee Category: Non-Academic
METAL WORKER SERIES

<table>
<thead>
<tr>
<th>Classification Title</th>
<th>Class Code</th>
<th>Date Established</th>
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<td>6280</td>
<td>July 1, 2000</td>
<td>N/A</td>
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<td>Metal Worker II</td>
<td>6281</td>
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<tr>
<td>Supervising Metal Worker</td>
<td>6587</td>
<td>June 1, 1979</td>
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SERIES OVERVIEW:
Metal Workers as defined in this series are journey-level skilled trades workers responsible for the full range of skilled welding, sheet metal, materials fabrication and other metal work in support of facilities and systems preventive maintenance and renovation. Three progressive classifications are defined in this series with work falling into the core areas of HVAC ductwork fabrication and installation; architectural metal work; piping systems fabrication and installation; architectural and structural fabrication; and machine shop work.

All incumbents participate in the maintenance of a metal working/machine shop; advise in the selecting, ordering, and storing of metal working, machining and fabrications materials, supplies and equipment; layout, position and complete projects from blueprints, sketches and verbal instructions; make sketches; estimate costs of metal and/or machine work; inspect completed work for conformance with specifications, requirements and compliance with applicable building and safety codes and regulations; inspect related work performed by contractors; clean, maintain and service tools and equipment used in the performance of duties; perform all work in accordance with established safety procedures; maintain a safe and clean work environment; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; and consult and work with other trades workers. Work may involve exposure to hazardous materials.

Examples of typical activities are not meant to be all inclusive or restrictive; incumbents may perform related work activities.

METAL WORKER I

Under general supervision, the Metal Worker I classification is responsible for the full range of skilled journey-level metal work as outlined in the series overview. Incumbents in this classification may also provide instruction and lead direction to unskilled and semi-skilled assistants. Incumbents perform a variety of metal and machine work for preventive maintenance on facilities, systems, equipment, structures and fixtures. Work for positions in this classification typically falls into one or more of the following core areas:

**HVAC Ductwork Fabrication and Installation** - Involves sizing and selecting ductwork and fittings based on CFM, velocity and static pressure requirements; the layout and fabrication of custom fittings; and the fabrication and installation of sheet metal components.

**Sheet Metal Construction and Repair for Architectural and Non-Structural Metal Work** - Involves using triangulation, radial parallel and shop mathematics to develop patterns, shapes and parts; cutting, welding, brazing, and soldering of sheet metals; installing, maintaining, inspecting and repairing sheet metal parts; and developing, forming and fashioning sheet metals into various sheet metal objects such as gutters and downsputs, air handling equipment, roof flashing, hand rails and related non-structural equipment and fixtures.
Machine Shop Work - Involves operating and maintaining machine tools used in the construction and repair of parts, tools, equipment and fixtures.

TYPICAL QUALIFICATIONS:

Knowledge - Work requires thorough knowledge of the methods, materials, tools and equipment used in a wide variety of metal and machine work including cutting, welding, brazing, soldering, layout, sheet metal brake, and/or machine shop work; thorough knowledge of the composition, characteristics and uses of ferrous metals, nonferrous metals and alloys and/or various sheet metals; thorough knowledge of installation standards for low, medium, and high pressure ductwork; and working knowledge of state safety orders applicable to metal work, including Safety Orders of the Division of Industrial Safety of the State of California. Positions involved in HVAC ductwork fabrication and installation require a thorough understanding of SMACNA duct construction and installation standards for low, medium and high pressure ductwork. Some positions may require an understanding of seismic bracing and vibration isolation.

Abilities - Must be able to lay out, develop and perform welding and sheet metal work; operate welding and fabricating equipment and perform arc and acetylene welding and brazing; size and select ductwork fittings; operate machine tools and equipment; make rough sketches and estimate the costs of materials and labor; interpret and read blueprints and work from plans and specifications; analyze and respond appropriately to emergency situations; maintain records and retrieve data related to work performed using manual and/or computerized record-keeping systems; prepare standard reports; provide instruction to unskilled and semi-skilled assistants; use mathematics and geometry in metal working calculations; and write at a level appropriate for the duties of the position.

Experience - These abilities normally would be acquired through any combination of progressively responsible training and experience as a welder, sheet metal worker or machinist which demonstrates achievement of journey-level skills equivalent to that acquired through completion of an applicable apprenticeship program.

Special Requirements - May be required to possess applicable certification for metal or welding work performed.

METAL WORKER II

Under general supervision, the Metal Worker II is responsible for highly skilled architectural and structural fabrication and/or for the layout, fabrication and installation of piping systems. The work of a Metal Worker II is distinguished from the Metal Worker I by required level of skill in a wider variety of fabrications and assembly, using materials and composites beyond standard metals and sheet metal. Additionally, incumbents in this classification must hold a certification in welding. Incumbents may also provide lead work direction and instruction to semi-skilled and skilled workers involved in metal, machine shop and related work. Assignments for positions in this classification typically fall into the following core areas:

Architectural and Structural Fabrication and Installation - Involve designing, laying out, fabricating, installing and repairing for more complicated structural components, fixtures, equipment and machinery, using a wide variety of materials such as sheet metals, structural metals, glass, and plexiglass; operating of welding, fabrication and machine shop equipment; using triangulation, radial parallel and shop mathematics to develop patterns, shapes and parts; determining of appropriate materials; and designing, developing and implementing solutions to resolve problems that arise in construction and repair.

Pipefitting Fabrication and Installation - Involves the welding, butt welding, soldering, brazing and using other methods to connect piping made of various metal and materials for HVAC, plumbing, sewage, water and related facility piping systems.
TYPICAL QUALIFICATIONS:

Knowledge - In addition to the knowledge required of the Metal Worker I, the Metal Worker II must possess a thorough knowledge of the methods, materials, tools and equipment used in metal, composite and other fabrication work; a working knowledge of piping accessories and the installation and applications requirements related to fluid, pressure, drainage, venting, and related issues; a thorough knowledge of allowable loads, deflection characteristics, and connection methods for a variety of structural shapes; and a more thorough knowledge of applicable federal and state safety orders related to metal work and materials fabrication.

Abilities - In addition to the abilities required of the Metal Worker I, the Metal Worker II must be able to design, lay out and develop all types of fabrication work; perform highly skilled welding including arc, heli-arc, and acetylene welding and brazing with a wide variety of materials and composites beyond standard metals; identify and select structural shapes, materials and connection methods appropriate for jobs; work with common piping materials; affect all pipe connection methods; read plans, schematics and isometric drawings; lead, instruct and coordinate the work of a small group or crew of semi-skilled and skilled workers.

Experience - In addition to the experience required of the Metal Worker I, the abilities of the Metal Worker II normally would be acquired through two years of experience as a journey-level sheet metal worker and fabrications specialist, including one year of experience in the fabrication, assembly or repair of objects containing glass, plexiglass, wrought iron, and/or other composites.

Special Requirements - Incumbents must possess applicable certification for metal or welding work performed.

SUPERVISING METAL WORKER

Under general supervision, the Supervising Metal Worker primarily is responsible for supervising and working with one or more small groups or crews of skilled journey-level metal workers and their semi-skilled assistants in the performance of metal work and materials fabrication duties as outlined in the series overview. Work crews may be involved in HVAC duct work fabrication and installation, sheet metal construction and installation, pipelifiting and installation, and/or architectural and structural fabrication and installation.

Incumbents typically prioritize and coordinate the work of multiple crews or projects; assign work to qualified crew members; provide work and safety instructions; provide on-the-job training and instructions to less skilled workers in trade and safety practices; provide input on performance evaluations; monitor work in progress; inspect completed work to ensure compliance with specifications, special instructions and sound trade practices; develop and maintain manual and/or computerized record-keeping and/or maintenance management systems; prepare reports; and oversee a metal or machine shop.

Work on new construction and remodels requires: collaborating with engineering and design departments; interpreting complicated plans and drawings; coordinating work schedules and work assignments to meet the overall construction/modification objectives; sequencing of work; ensuring the availability of required materials and equipment; analyzing operations; preparing cost and time estimates; and providing a high level of inspection to ensure appropriate building and safety codes are met. Incumbents may also design minor tenant improvements and coordinate and supervise the work of related trades workers on specific projects. Incumbents also may coordinate the work of outside contractors and vendors.

TYPICAL QUALIFICATIONS:

Knowledge - In addition to the knowledge required of the Metal Worker II, the Supervising Metal Worker must have a thorough knowledge of effective supervisory practices and techniques; and a working knowledge of job design and work sequencing related to maintenance, repair, renovation, and installation projects.

Abilities - In addition to the abilities required for the Metal Worker II, the Supervising Metal Worker must be able to plan and direct the work of skilled crafts workers and their semi-skilled assistants; determine and coordinate staffing, material and equipment needs for multiple jobs and projects; ensure accuracy and maintenance of assigned record-keeping systems; and perform design work.
Experience - In addition to the experience required of the Metal Worker II, the abilities of the Supervising Metal Worker normally would be acquired through two or more years of experience as a journey-level metal worker, including one to two years in a lead/supervisory capacity.