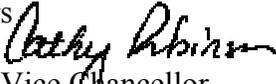


The California State University  
Office of the Chancellor  
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**Date:** June 9, 2003

**Code:** TECHNICAL LETTER  
HR/PCOS 2003-04

**To:** Human Resources Directors   
**From:** Cathy Robinson, Assistant Vice Chancellor  
Human Resources Administration

**Response Due By:**  
July 18, 2003

**Subject:** Draft Classification Standards for Certified Apprentices – Skilled Crafts (Unit 6)

Human Resources Administration developed draft classification standards for four certified apprentices in Skilled Crafts (Unit 6). Although the classification codes have been in existence for some time, classification standards have not yet been developed. In addition, classification titles will be updated, consistent with the Unit 6 classification standards implemented in July 2000. Draft classification standards are provided in Attachment A. Campus review and feedback are requested as they are critical to the development of the final classification standards. Affected classifications include:

Class Code	Current Title	Proposed Title
6692	Refrigeration Mechanic Apprentice	Air Conditioning/Refrigeration Mechanic Apprentice
6838	Automobile Mechanic Apprentice	Equipment Mechanic Apprentice
6641	Locksmith Apprentice	Same
6585	Sheet Metal Worker Apprentice	Metal Work Apprentice

We ask that Facilities/Plant and Human Resources management coordinate their response and submit one feedback document per campus. Please send feedback to Gina Caywood via e-mail to [gcaywood@calstate.edu](mailto:gcaywood@calstate.edu) or via fax at (562) 951-4954 **by Friday, July 18, 2003**. Thank you.

This technical letter also is available on Human Resources Web site at: <http://www.calstate.edu/HRAdm/memos.shtml>. Thank you.

CR/ac

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**Distribution:**

CSU Presidents  
Vice Chancellor, Human Resources

Employee Relations Designees  
Facilities/Plant Directors



## Air Conditioning/Refrigeration Mechanic Apprentice

*Class Code: 6692*

*Date Established: 07-01-95*

*Date Revised: XX-XX-XX*

### **OVERVIEW:**

Under immediate supervision in a trainee capacity, the Air Conditioning/Refrigeration Mechanic Apprentice performs a variety of progressively more complex duties involved in the air conditioning/refrigeration mechanic trade which include performing the full range of service, maintenance and repair work on complex air conditioning and refrigeration systems and their associated HVAC systems and equipment.

### **DISTINGUISHING CHARACTERISTICS:**

The apprentice classification is distinguished from the Air Conditioning/Refrigeration Mechanic by the trainee nature of the work, which is performed under the immediate supervision of a journey-level or higher Mechanic. Incumbents follow a formal training plan with established objectives and are not solely responsible or accountable for the completion of journey-level tasks on a continuing basis.

The apprentice classification is designed for the employment of minimally qualified individuals with little or no skilled work experience, who are at least 18 years of age, and who demonstrate an aptitude and desire to learn the air conditioning/refrigeration mechanic trade. This classification will be used in conjunction with a formal training program of on-the-job training and supplemental education which outlines the training objectives and provides a method for the evaluation of performance while working to achieve those objectives. As this is a four-year training classification and not intended for the employment of journey-level Air Conditioning/Refrigeration Mechanics, incumbents generally are not appointed to this classification for more than four years. Upon certification of journey-level capability, incumbents will become eligible for appointment or transition to the Air Conditioning/Refrigeration Mechanic classification.

### **TYPICAL ACTIVITIES:**

Incumbents in this apprentice classification are instructed in and learn to install, troubleshoot, calibrate, service, repair and maintain refrigeration, heating, ventilation and air conditioning 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 operating efficiency of campus refrigeration and air conditioning systems and recommend actions for improvements; respond to comfort complaints; diagnose problems in the distribution of air to individual rooms and buildings and making necessary adjustments and balances in air conditioning systems; use building automation system to diagnose and troubleshoot problems in HVAC and refrigeration systems; maintain inventory and records and order parts and supplies; and maintain records of progression through the work processes outlined in the training program.

In addition, incumbents learn to and perform the following activities: use building automation systems to diag-

nose and troubleshoot problems; estimate cost, time and materials for projects; perform all work in accordance with established safety procedures and maintain a safe and clean work environment; maintain records and logs and retrieve data related to work performed using manual and computerized record keeping systems; prepare standard reports; and consult and work with other trades workers. Work may involve exposure to hazardous materials.

**TYPICAL QUALIFICATIONS:**

Entry to this apprentice classification requires the possession of a high school diploma or equivalent. Incumbents must be able to follow oral and written instructions; read, write and perform such tasks at a level appropriate for the duties; establish and maintain cooperative working relationships; perform basic arithmetic computations; develop a knowledge of electrical voltage, plumbing refrigeration, electrical and plumbing codes, thermodynamics and automated energy/environmental management systems; accurately distinguish colors; learn the theories behind 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 learn all legal and safety codes and regulations related to the installation and operation of refrigeration and air conditioning systems to ensure campus compliance.

Incumbents must be able to work in a trainee capacity, demonstrating continued progress and improvement in performing skilled air conditioning/refrigeration work; identifying and using the tools and materials of the trade; and developing work habits, knowledge and abilities pertinent to the trade.

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## Equipment Mechanic Apprentice

*Class Code: 6838*

*Date Established: 07-01-95*

*Date Revised: XX-XX-XX*

### **OVERVIEW:**

Under immediate supervision in a trainee capacity, the Equipment Mechanic Apprentice performs a variety of progressively more complex duties related to the automotive/equipment mechanic trade such as performing preventive maintenance, repair and modification of automotive, maintenance, construction and/or other power driven equipment.

### **DISTINGUISHING CHARACTERISTICS:**

The apprentice classification is distinguished from the Automotive/Equipment Mechanic by the trainee nature of the work, which is performed under the immediate supervision of a journey-level or higher Mechanic. Unlike the Mechanics Helper, incumbents follow a formal training plan with established objectives and are not solely responsible or accountable for the completion of journey-level tasks on a continuing basis.

The apprentice classification is designed for the employment of minimally qualified individuals with little or no skilled work experience, who are at least 18 years of age, and who demonstrate an aptitude and desire to learn the automotive/equipment mechanics trade. This classification will be used in conjunction with a formal training program of on-the-job training and supplemental education which outlines the training objectives and provides a method for the evaluation of performance while working to achieve those objectives. As this is a training classification, and not intended for the employment of journey-level mechanics, incumbents generally are not appointed to this classification for more than four years. Upon certification of journey-level capability, incumbents will become eligible for appointment or transition to the Automotive/Equipment Mechanic classification.

### **TYPICAL ACTIVITIES:**

Incumbents in this apprentice classification are instructed in and learn to inspect automotive, maintenance, construction and/or farm equipment to determine corrective action necessary; 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 and engine parts, 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 break downs and 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; and maintain a record of their progression through the work processes listed in the training guidelines performed, as well as records of progression through work processes listed in training guidelines.

**TYPICAL QUALIFICATIONS:**

Entry to this apprentice classification requires the possession of a high school diploma or equivalent. Incumbents must be able to follow oral and written instructions; read, write and perform such tasks at a level appropriate for the duties; establish and maintain cooperative working relationships; perform basic arithmetic computations; and learn the methods, materials, tools and equipment used in the automotive/equipment mechanics trade, including the computerized systems used in the maintenance, adjustment and repair of engines, equipment and accessories.

Incumbents must be able to work in a trainee capacity, demonstrating continued progress and improvement in making skilled repairs to applicable automotive, maintenance and/or construction equipment; diagnosing mechanical and electrical malfunctions; working from blueprints, drawings and sketches to fabricate parts; inspecting vehicles and equipment to determine extent of repairs; identifying and using the tools and materials of the trade; and developing work habits, knowledge and abilities pertinent to the trade.

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## Locksmith Apprentice

*Class Code: 6641*

*Date Established: 07-01-89*

*Date Revised: XX-XX-XX*

### **OVERVIEW:**

Under immediate supervision in a trainee capacity, the Locksmith Apprentice performs a variety of progressively more complex duties related to the locksmith trade such as installing, repairing, remodeling and maintaining manual and automated locks and locking systems.

### **DISTINGUISHING CHARACTERISTICS:**

The apprentice classification is distinguished from the Locksmith I by the trainee nature of the work, which is performed under the immediate supervision of a journey-level or higher Locksmith. Incumbents follow a formal training plan with established objectives and are not solely responsible or accountable for the completion of journey-level tasks on a continuing basis.

The apprentice classification is designed for the employment of minimally qualified individuals with little or no skilled work experience, who are at least 18 years of age, and who demonstrate an aptitude and desire to learn the locksmith trade. This classification will be used in conjunction with a formal training program of on-the-job training and supplemental education which outlines the training objectives and provides a method for the evaluation of performance while working to achieve those objectives. As this is a training classification, and not intended for the employment of journey-level locksmiths, incumbents are generally not appointed to this classification for more than two years. Upon certification of journey-level capability, incumbents will become eligible for appointment or transition to the Locksmith I classification.

### **TYPICAL ACTIVITIES:**

Incumbents in this apprentice classification are instructed in and learn to install, repair, remodel and maintain manual and automated locks, locking systems and security devices, including mechanical and electrical systems and devices, low voltage computerized access control systems, and door opener, closers and hardware; learn to install, maintain, repair and adjust all types of locks and their components for campus buildings, rooms, furniture and vehicles; cut and issue keys and may program and issue key cards; implement, troubleshoot, repair and program computerized access control systems to meet campus facilities access and security needs; 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; estimate cost, time and materials for locksmith projects; participate in the maintenance and operations of a locksmith shop; purchase, store and maintain lock systems, hardware and materials; maintain and service tools equipment used in the performance of duties; inspect completed work for conformance with specifications and requirements and compliance with applicable regulations, including work performed by contractors; perform all work in accordance with established safety procedures and maintain a safe and clean work environment; maintain records and retrieve data related to work performed, as well as records of progression through work processes listed in training guidelines; prepare standard reports; and consult and work with other trades workers.

**TYPICAL QUALIFICATIONS:**

Entry to this apprentice classification requires the possession of a high school diploma or equivalent including one year of high school algebra with a grade of "C" or better. Incumbents must be able to follow oral and written instructions; read, write and perform such tasks at a level appropriate for the duties; establish and maintain cooperative working relationships.

Incumbents also must be able to learn the methods, materials, tools and equipment used in the locksmith trade which includes a variety of access and control systems; all types of locks, fastening devices and related hardware; electrical locking and security systems and devices; and applicable state codes pertaining to the locksmith trade including specifics related to fire exits, door hardware and fastening devices.

Incumbents must be able to work in a trainee capacity, demonstrating continued progress and improvement in the installation, repair, remodeling and maintenance of manual and automated locks and locking systems; identifying and using the tools and materials of the trade; and developing work habits, knowledge and abilities pertinent to the trade.

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## Metal Worker Apprentice

*Class Code: 6585*

*Date Established: 07-01-95*

*Date Revised: XX-XX-XX*

### **OVERVIEW:**

Under immediate supervision, in a trainee capacity, the Metal Worker Apprentice performs a variety of progressively more complex duties involved in the metal work trade which may include welding, sheet metal work, materials fabrication and/or machine shop work in support of facilities and systems preventive maintenance and renovations in accordance with specific training objectives.

### **DISTINGUISHING CHARACTERISTICS:**

The apprentice classification is distinguished from the Metal Worker I classification by the trainee nature of the work, which is performed under the immediate supervision of a journey-level or higher Metal Worker. Incumbents follow a formal training plan with established objectives and are not solely responsible or accountable for the completion of journey-level tasks on a continuing basis.

The apprentice classification is designed for the employment of minimally qualified individuals with little or no skilled work experience, who are at least 18 years of age, and who demonstrate an aptitude and desire to learn the metal working trade. This classification will be used in conjunction with a formal training program of on-the-job training and supplemental education which outlines the training objectives and provides a method for the evaluation of performance while working to achieve those objectives. As this is a four-year training classification, and not intended for the employment of journey-level metal workers, incumbents generally are not appointed to this classification for more than four years. Upon certification of journey-level capability, incumbents will become eligible for appointment or transition to the Metal Worker I classification.

### **TYPICAL ACTIVITIES:**

Incumbents in this apprentice classification are instructed in and learn to assist in the maintenance of a metal working/machine shop including advising in the selection, ordering, and storing of metal working, machining, and fabrications materials, supplies and equipment; lay out, position, and complete projects from blueprints, sketches and verbal instructions; make sketches and estimate costs of metal and/or machine work; inspect assemblies and work performed by contractors to ensure they conform to specifications, requirements and sound trade practices; maintain and service tools and equipment used in the performance of duties; maintain records and retrieve data related to work performed using manual and/or computerized record keeping systems; prepare standard reports; perform all work in accordance with established safety procedures and maintain a safe and clean work environment; consult and work with other trades workers; and maintain records of progression through work processes as outlined in the training program. Work may involve exposure to hazardous materials. Metal work at the campus typically falls into one or more of the following core areas. The Apprentice may specialize in one or more areas. This will be outlined in the training plan.

- ◆ 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 of sheet metal parts; and developing, forming and fashioning sheet metals into various sheet metal objects such as gutters and downspouts, air handling equipment, roof flashings; hand rails and related non-structural equipment and fixtures.
- ◆ Machine shop work involves operating and maintaining of machine tools used in the construction and repairing parts, tools, equipment and fixtures.

### **TYPICAL QUALIFICATIONS:**

Entry to this apprentice classification requires the possession of a high school diploma or equivalent including one year of high school algebra with a grade of "C" or better. Incumbents must be able to follow oral and written instructions; read, write and perform such tasks at a level appropriate for the duties; establish and maintain cooperative working relationships; learn 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; learn the composition, characteristics and uses of ferrous metals, nonferrous metals and alloys and/or various sheets metals; learn the installation standards for low, medium, and high pressure ductwork; and learn state safety orders applicable to metal work, including Safety Orders of the Division of Industrial Safety of the State of California.

Incumbents must be able to work in a trainee capacity, demonstrating continued progress and improvement in performing skilled metal and machine work for preventative maintenance on facilities, systems, equipment, structures and fixtures; identifying and using the tools and materials of the trade; and developing work habits, knowledge and abilities pertinent to the trade.

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