Laboratory Technician – Electricity/Electronics

Classified Range: 38

Board Approved: 04/11/2019 P. 1|3

*Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are **not** intended to reflect all duties performed within the job; however, any additional duties will be reasonably related to this class*.

SUMMARY DESCRIPTION

Under the direction of the Dean, working with minimal supervision, performs a variety of skilled and semi-skilled activities related in the Electricity/Electronics Program; orders, issues, prepares, and maintains laboratory materials, supplies, and associated equipment.

Positions in the Laboratory Technician class are assigned duties requiring considerable technical knowledge and ability in the assigned field of specialization. Incumbents are expected to exercise independent judgment in the performance of duties and are responsible for supervising and maintaining all laboratory supplies, materials, equipment, and records. Positions in this class specialize in the assigned subject area.

REPRESENTATIVE DUTIES

The following duties are typical for this classification.

1. Sets up and prepares class demonstrations and experiments working from knowledge of the subject area, reference materials, course outline, and without specific instructions.
2. Conducts inventories, orders, receives, and stocks materials, supplies, and equipment for laboratory use.
3. Issues and maintains records on materials loaned to students, instructors, and other departments; issues and maintains records on lockers.
4. Performs duties following customary safety regulations, including the usage of equipment and materials, and shop safety practices.
5. Demonstrates the safe and effective operation, and use of laboratory tools and equipment.
6. Explains tool room procedures, and responds to students' questions regarding the nomenclature, use, and availability of tools, materials, and supplies.
7. May calibrate, maintain, and perform repairs on electrical equipment and supplies.
8. May assist faculty in assembling printed class materials.
9. May supervise and assign work of student assistants.
10. May maintain expenditure records and provide data for budget estimates.
11. Performs other duties as required, related to the primary job duties.

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QUALIFICATIONS

The following generally describes the knowledge and ability required to enter the job and/or be learned within a short period of time in order to successfully perform the assigned duties.

Knowledge of:

- Methods and procedures of preparing instructional materials used in appropriate laboratory.
- Sufficient human relation skills to guide students and student workers, and to convey technical concepts.
- Operational characteristics of laboratory apparatus, equipment, and materials pertaining to assigned laboratory and subject area.
- Safety factors necessary in operating and working with laboratory equipment, apparatus, and materials.
- Customary test equipment including, but not limited to oscilloscopes, signal generators, spectrum analyzers, logic analyzers, digital multi-meters (DMM's), etc.
- Knowledge of oscilloscopes, signal generators, spectrum analyzers, logic analyzers, digital multi-meters (DMM's).
- Automation systems and Programmable Logic Controller (PLC) and Programmable Automation Controller (PAC) systems to include wiring and testing and troubleshooting techniques.
- Principles and procedures of record keeping and filing. Basic inventory and purchasing processes and procedures. English usage, spelling, grammar, and punctuation.

Ability to:

- Set up, modify, service, adjust, and make minor repairs to laboratory apparatus and equipment. Prepare instructional equipment for laboratory exercises.
- Maintain the lab and equipment in a safe and organized manner including the handling of hazardous or dangerous materials and equipment as required for some labs.
- Read and understand technical manuals and schematics electrical and electronic (blue print and schematic).
- Demonstrate to students the use of laboratory tools and equipment.
- Listen actively and effectively, identify and solve problems, and facilitate problem solving.
- Operate office equipment including computers and supporting word processing
- Perform routine record keeping and report writing duties.
- Work independently and collaboratively.
- Plan and organize work to meet changing priorities and deadlines. Communicate clearly and concisely, both orally and in writing.
- Establish and maintain effective working relationships with those contacted in the course of work.

Education and Experience Guidelines - *Any combination of education and experience that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:*

Education/Training:

Completion of thirty (30) semester units from an accredited institution supplemented by specialized training in the electrical and electronic fields of automation, including communication, computers, or electrical wiring.

Completion of twelfth grade or equivalent and four (4) years of experience can be used in the absence of the thirty (30) semester units.

Experience:

Two (2) years of experience in the electricity/electronics field.

License or Certificate:

Possession of any certification within the electronic fields such as, but not limited to:

Federal Communications Commission (FCC)

General Radiotelephone Operator License (GROL)

National Electrical Manufacturers Association (NEMA) Solar Installation Certification

Electronics Technician Association (ETA) certification

Desirable Experience:

Experience in wiring and troubleshooting of control systems such as Programmable Logic Controllers (PLC), relays, contactors, motors (Direct Current and Alternate Current), single and three phase motors, data wiring, cabling, fiber optic splicing, Time-Domain Reflectometry (TDR) usage, Closed Circuit Television (CCTV) audio/video installations, as well as solar system installation. Some mechanical and pneumatic actuator knowledge as it applies to robotics and mechatronics.

PHYSICAL DEMANDS AND WORKING ENVIRONMENT

The conditions herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.

Environment: Work is performed primarily in a laboratory setting; exposure to dusts, fumes, noise; work with laboratory and mechanical equipment and apparatus.

Physical: Primary functions require sufficient physical ability and mobility to work in a laboratory setting; to stand or sit for prolonged periods of time; to occasionally stoop, bend, kneel, crouch, reach, and twist; to lift, carry, push, and/or pull light to heavy amounts of weight; to operate laboratory, mechanical and electronic shop equipment requiring repetitive hand movement and fine coordination including use of a computer keyboard; and to verbally communicate to exchange information; requires the wearing of personal protective equipment including safety glasses or goggles, lab coats, rubber or plastic gloves, respirators, or face shields.

Vision: See in the normal visual range with or without correction; vision sufficient to read computer screens and printed documents; and to operate assigned equipment.

Hearing: Hear in the normal audio range with or without correction.