

**JOB TITLE:** Instructional Assistant - Physics and Engineering  
**PAY GRADE:** CL 20  
**LAST REVISED:** July 2025

*Job Descriptions/Class Specifications are intended to present a descriptive list of the range of duties performed by employees in the job and are **not** intended to reflect all duties performed within the job.*

Sierra College has a strong commitment to the achievement of equity and inclusion among its faculty, staff, and students and values the rich, diverse backgrounds that make up the campus community. A strong candidate for this position must have the understanding and ability to successfully support individuals with varying backgrounds. This includes persons with disabilities, various gender identities and sexual orientations, as well as individuals from historically underrepresented communities and other groups. Our District is committed to providing strategies for success and proactive student-centered practices and policies focused on eliminating equity gaps to ensure the District provides an inclusive educational and employment environment focused on strategies for success and equitable outcomes for all.

### **SUMMARY DESCRIPTION**

Under general supervision from assigned manager and in collaboration with instructional faculty, provides instructional support to the Physics and Engineering Departments, requiring in-depth knowledge of subject area and associated use of technology, computers, software, and equipment; provides technical and instructional assistance to support laboratory and classroom activities; and provides purchasing, inventory, and maintenance duties for laboratory and classroom supplies, materials, and equipment.

### **REPRESENTATIVE DUTIES**

*The following duties are typical for this classification. Incumbents may not perform all of the listed duties and/or may be required to perform additional or different duties from those set forth below to address business needs and changing business practices.*

1. Provides instructional support for Physics and Engineering Departments, including technical and instructional assistance to students with lab experiments and reports, homework, special projects, demonstrations, or other instructional activities in classroom and laboratory settings; proctors exams and quizzes; collaborates with faculty to set up demonstrations; assists with curriculum planning and coordination; assists with layout and production of instructional materials, including audio-visual and computer-based lab aids; researches, learns, and shares information regarding new techniques and methods with District staff; assists with class projects; provides ongoing times and locations for formal tutoring sessions (online or on-site); hosts additional lab time and tutoring sessions for student projects, examinations, and study, as needed.
2. Provides instructional support in online teaching environments, including Learning Management Systems (LMS).
3. Prepares, monitors, and cleans-up materials and supplies for classroom and laboratory activities; collects laboratory schedules from, interacts with, and coordinates laboratory preparation with department faculty; transports, sets up, and operates physics apparatus, equipment, and machinery; develops, tests, and modifies new experiments and writes corresponding procedures; reviews experiment manuals and makes necessary changes to provide adequate procedures for experiments; designs and constructs laboratory and demonstration apparatus using a variety of tools; instructs laboratory assistants and other department staff and faculty in proper use of scientific apparatus; makes chemical solutions.
4. Performs equipment maintenance and set-up; inspects, maintains, and performs minor repairs to equipment; tests, calibrates, and adjusts precision scientific instruments, and laboratory equipment; services, repairs, and calibrates tools; paints, repairs, wires, and installs items in support of program operations and activities; arranges for servicing, packaging, shipping, and repair of equipment, as needed.
5. Maintains, inventories, and organizes the department lab facility, including stockroom and project area; maintains, repairs, and manages inventory and distribution of department apparatus, equipment, and supplies; designs, organizes, and maintains department storage facilities; designs and builds new

- apparatus safely handles chemical hazards and prepares listings of unneeded hazardous materials, and arranges for their pickup and removal from District premises; updates Safety Data Sheets (SDS) and other safety-related documentation for hazardous materials; maintains equipment manuals.
6. Provides initial multimedia support; develops graphics and video libraries; assists in producing graphic instructional materials; sets up and helps troubleshoot multimedia equipment; provides specifications, evaluates, and makes recommendations on current multimedia equipment.
  7. Provides initial computer technical assistance, training, and support to faculty, staff and students; installs, removes, maintains, and assists with troubleshooting of department computer hardware and software; assists with set up of department computer systems and networks; administers assigned computer network, including workstations in the physics and engineering lab and tutoring center; maintains department databases; sets-up, maintains, and demonstrates the operation of computer interfaces, sensors, and related science software used for experiments and simulations; requests or arranges for assistance, servicing, or repair of department computer equipment from District Information Technology Services (ITS) staff or other resources.
  8. Provides administrative support for physics and engineering; responds to inquiries regarding departmental operations or refers inquiries to appropriate staff; monitors, coordinates, and facilitates use of department facilities, resources, and collections for access and security; prepares or assists with the preparation of departmental reports and correspondence; maintains department records, including warranties, licenses and operating information for equipment and software; participates in preparation of grant proposals and the administration of grants.
  9. Participates in the preparation and administration of assigned budget(s); researches and purchases assigned contracts, materials, and supplies, and determines future needs; works with vendors to obtain quotes; requests purchase orders; inventories supplies and instructional materials; discusses new products or special needs with vendors and District staff; works with District staff to obtain laboratory, lecture, or other supplies; maintains expenditure records and prepares reports; advocates for the needs of the department; and creates prioritized lists of needed equipment and quotes for administration; provides input regarding annual budget development.
  10. Prepares, loads, and transports physics and engineering materials between campuses or off-site locations; may be required to operate District vehicle for transport.
  11. May perform basic first aid, as needed.
  12. Provides onboarding support, general work training, guidance, supervision assistance, and directs activities of students, temporary employees, or District staff.
  13. Performs related duties that support the overall objective of the position.

**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:**

- Theories, concepts, principles, techniques, protocols, and applications of physics, engineering, and related scientific disciplines.
- Operational characteristics of laboratory apparatus, equipment, and materials pertaining to assigned laboratory and subject area.
- Mathematics principles and skills, including calculus, differential equations, and scientific concepts.
- Operational characteristics of laboratory apparatus, equipment, and materials.
- Principles and techniques used in the repair and calibration of scientific instruments.
- Technical education and training with advanced and heavy machinery including Vertical CNC mill and associated equipment.
- Manufacturing techniques for repairs.

- Federal, state, and local laws, codes, and regulations regarding instruction, support of students, and laboratory protocols, including, but not limited to, the Family Educational Rights and Privacy Act (FERPA) and the Americans with Disabilities Act (ADA).
- Basic inventory, bookkeeping, and purchasing processes and procedures.
- Research techniques including, but not limited to, being able to understand and reproduce peer reviewed papers.
- English usage, spelling, grammar, punctuation, and vocabulary.

**Ability to:**

- Perform general technical and operational duties in support of the physics and engineering programs, including, but not limited to, operating and maintaining equipment, computers, and tools; maintaining and organizing supply inventory and storage facility; proctoring tests; and supporting classroom and lab activities.
- Instruct others in the proper use of scientific apparatus.
- Code, read technical drawings, and understand dimensioning and tolerancing.
- Read and understand laboratory and technical manuals and procedures.
- Apply scientific principles to practical applications; analyze data and solve problems.
- Adapt to changing technologies and learn functionality of new equipment and systems.
- Practice safety precautions, techniques, and procedures, including safe lifting techniques, laboratory protocols, and safe handling, storage, and disposal of hazardous materials.
- Plan and organize work to meet schedules and changing deadlines.
- Perform basic record keeping functions.
- Utilize office procedures, methods, and equipment, including computers, technology, and applicable software applications sufficiently to perform the duties of the classification, including Learning Management Systems (LMS) and those used in the fields of physics and engineering such as 3D modeling and Computer-Aided Manufacturing (CAM).
- Maintain confidentiality of information.
- Follow oral and written directions.
- Communicate clearly and concisely, both orally and in writing.
- Provide onboarding support, general work training, guidance, supervision assistance, and direct activities of students, temporary employees, or District staff.
- Establish and maintain effective working relationships with those contacted in the course of work.
- Work independently and collaboratively.
- Apply District policies and procedures.

**EDUCATION AND EXPERIENCE GUIDELINES**

*Any combination of education and experience that demonstrates the required above knowledge and abilities is qualifying. Examples of ways to obtain the above knowledge and abilities could include, but are not limited to, the following:*

**Education/Training**

- Two years of college with major course work in physics, engineering, or a related scientific field.

**Experience**

- Two years of increasingly responsible experience in physics or engineering laboratory.

**License/Certificate** - Possession of, or ability to obtain within a reasonable timeframe, each of the following:

- Valid California Driver's License.
- First Aid Certificate.
- Hazardous Materials Awareness Certificate.

**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 indoors in an education center/classroom/laboratory setting and outdoors in the field; risk of exposure electrical energy; work with laboratory equipment and apparatus. Moderate exposure to risks controlled by safety precautions.

**Physical:** Primary functions require sufficient physical ability and mobility to work in an office and/or education center/classroom/laboratory setting; to stand or sit for prolonged periods of time; to occasionally walk, stoop, bend, kneel, crouch, reach, and twist; to lift, carry, push, and/or pull light to moderate amounts of weight; to operate laboratory and office equipment requiring repetitive hand movement and fine coordination, including use of a computer keyboard; to verbally communicate to exchange information; and may require 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.

Board Approved: July 15, 2025