

Class Concept

This is journey level professional chemistry work requiring the application of chemistry methods, chemical theory and the principles from related sciences, to develop, conduct and interpret the results of complex qualitative and quantitative chemical analyses on a wide variety of substances. Employees operate with considerable technical independence under jointly set objectives, projects and priorities. Employees are recognized as a technical specialist and may work with issues and factors that are largely undefined and require extensive analysis and frequent development of approaches and methods. Employees select, arrange and modify complex laboratory equipment and elaborate instrumentation to implement complex testing operations. Methods, procedures and tests performed include a wide ranging combination of titration, gravimetric, volumetric, colorimetric, IR, UV and visible spectroscopy, inductively coupled plasma (ICP) emission spectroscopy, robotic measurements of pH, digestions, extractions and other documented methods and tests including the more complex procedures such as atomic absorption spectroscopy, mass spectroscopy, segmented flow injection analysis or gas, liquid, ion or thin layer chromatography. Employees must be able to troubleshoot complex analytical instrumentation. Employees primarily work with samples that are unknown or in minute or very difficult to work with concentrations and have substances that mask, react or interfere with the reagents or with each other during analysis. Guidelines and references can be generally vague and non-specific and include laws, regulations, agency guidelines, policies, precedents and recent work in their specialty area. Work may also include providing work direction and review to other laboratory employees; programming computerized test instruments; evaluating existing equipment and new developments to recommend the purchase and application of equipment; maintaining chain of custody for samples and evidence; and testifying in court or at hearings as a technical expert. Employees may be required to perform other duties and responsibilities as assigned.

Recruitment Standards

Knowledge, Skills, and Abilities

- Full knowledge of the principles, concepts, theories, reference sources and laboratory applications of analytical chemistry and other related sciences.
- Working knowledge of the laws, regulations and agency policies governing responsibilities.
- Working knowledge of scientific methodology and of laboratory safety practices.
- Ability to independently perform and record complex standardized and non-standardized laboratory tests and procedures.
- Ability to analyze results, interpret methodology, understand and solve theoretical problems, and to provide work direction and instruction to chemical technicians.
- Ability to express technical information clearly, both orally and in writing, when reporting results, testifying or explaining procedures to others.
- Ability to perform advanced mathematics and statistical analysis, to understand and follow complex oral and written instructions, to perceive colors normally and to make olfactory distinctions.
- Ability to establish and maintain effective working relationships.

Minimum Education and Experience

Bachelor's degree in chemistry from an appropriately accredited institution and two years of progressive chemistry laboratory experience; or an equivalent combination of education and directly related experience.

Note: This is a generalized representation of positions in this class and is not intended to identify essential functions per ADA.