

## **CLASS TITLE: PRINCIPAL OCEAN ENGINEER**

Class Code: 02968500

Pay Grade: 33A

EO: B

### **CLASS DEFINITION:**

**GENERAL STATEMENT OF DUTIES:** To perform difficult technical and/or supervisory work in professional ocean engineering involving the design, development and operational evaluation of systems to monitor, control, manipulate and operate within coastal or ocean environments; and to do related work as required.

**SUPERVISION RECEIVED:** Works under the general supervision of a superior from whom are received general directions which afford the opportunity for the use of independent judgement and making of technical decisions of moderate difficulty; work is reviewed through the examination of reports, through conferences and by inspections.

**SUPERVISION EXERCISED:** Plans, assigns, supervises and reviews the work of professional, sub-professional, labor and clerical employees.

### **ILLUSTRATIVE EXAMPLES OF WORK PERFORMED:**

To perform difficult technical and/or supervisory work in professional ocean engineering involving the design, development and operational evaluation of systems to monitor, control, manipulate and operate within coastal or ocean environments.

To apply mathematical and scientific principles to the design, development and operational evaluation of systems to monitor, control, manipulate and operate within coastal or ocean environments, such as underwater platforms, flood control systems, dikes, hydroelectric power systems, tide and current control and warning systems, and communications equipment; the planning and design of total systems for working and functioning in water or underwater environments; and the analysis of related engineering problems such as the action of water properties and behavior on physical systems and people, tidal forces, current movements, and wave motion.

To review plans, specifications and designs submitted by the contractor, architect or engineer and make recommendations thereon; in the field: to be responsible for interpreting provisions of contracts, plans, specifications and designs; to assure that construction work schedules are maintained and to supervise the continuous inspection of workmanship, materials and methods; to be responsible for the technical supervision of a staff engaged in the operation and maintenance of state coastal infrastructure; or, to assist an engineer of higher rank in the administrative and technical supervision of all activities of the ocean infrastructure or maintenance program; to assist in inspecting all state coastal infrastructure and to estimate the amount of maintenance necessary of each piece of infrastructure; to assist in planning, organizing, coordinating and supervising the work program of the construction.

To lay out, oversee and check the work of subordinate engineers performing moderately complex engineering work; to use a combination of electrical, civil, mechanical and general engineering principles to work with oceanographers, marine biologists, geologists and geophysicists in creating tools and devices to sense underwater objects and seafloor formations, measure underwater earthquake activity or study tides to help with research projects; to work as

part of a research or permitting team, but also can work independently, developing new research and exploration tools.

To be responsible for the supervision of the engineering activities relating to the development and protection of the state's natural resources; to supervise contract construction at the state's parks, beaches, and other conservation areas involving such construction as dams, breakwaters, piers, docks, fish ladders, historical restorations and erosion prevention; to be responsible for the preparation of cost estimates, specifications and plans; to coordinate and review plans and specifications prepared by subordinates and/or contractors; and to be responsible for enforcing contract plans and specifications for natural resource projects.

To review architectural and engineering plans related to the electrical, structural or mechanical field of engineering to insure compliance and conformance to the building code.

To do related work as required.

## **REQUIRED QUALIFICATIONS FOR APPOINTMENT:**

**KNOWLEDGES, SKILLS AND CAPACITIES:** A thorough knowledge of the principles and practices of geomechanics, energy generation and ocean structures and the ability to apply such principles and practices; a thorough knowledge in ocean engineering including an overview of the ocean environment and methods of research such as analysis, construction and operation of marine systems; the ability to read and interpret all types of civil engineering plans and specifications; the ability to plan, assign, supervise and review the work of a group of professional, sub-professional, labor and clerical employees; the ability to establish and maintain effective working relationships with contractors, supervisors, and subordinates; and related capacities and abilities.

## **EDUCATION AND EXPERIENCE:**

Education: Such as may have been gained through: graduation from a college of recognized standing with specialization in Ocean Engineering; and

Experience: Such as may have been gained through: employment as a professional ocean engineer involving the application of mathematical and scientific principles for the design, development and operational evaluation of systems to monitor, control, manipulate and operate within coastal or ocean environments.

Or, any combination of education and experience that shall be substantially equivalent to the above education and experience.

**SPECIAL REQUIREMENT:** At the time of appointment must possess, at least, an Engineer-in-Training certificate of registration issued by the Rhode Island State Board of Registration for Professional Engineers and must maintain such registration as a condition of employment.

Class Created: March 20, 2016