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## Electronics Engineer (Development) 11

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### GS-0855-11

#### I. INTRODUCTION

NOTE: THE SENTENCE IN PART I DESCRIBING THE PURPOSE OF THE POSITION AND PARTS II AND III IN THEIR ENTIRETY ARE PERMANENT PARTS OF THE LIBRARY AND MAY NOT BE CHANGED OR EDITED IN ANY WAY.

This position is located in

Serves as an electronics engineer providing engineering expertise to a project or team involved in the design, development, test, evaluation or experimentation of various types of advanced electronics technology, processes and systems.

#### II. MAJOR DUTIES AND RESPONSIBILITIES

Conducts engineering analysis, experimentation of equipment, evaluation and development of equipment, instrumentation, materials and processes. May also be involved in performing experimental and investigative activities aimed at developing new and improved equipment in order to advance the current state of technology.

Such duties typically include: collecting, measuring and ensuring the integrity of data through standardized data gathering and evaluation techniques (such as data calibration, real-time data gathering and feedback assessment); providing detailed and thorough analysis of acquired statistical data in developing modeling and other techniques and methods applicable to systems maintenance and modification; resolving data acquisition problems in the lab as well as in the field; and/or developing software for the automated collection of data for real-time data acquisition.

#### III. FACTORS LEVELS

Factor I - Nature of Assignment Degree B (2 points)

Assignments are typified by the need to conduct fact finding, in addition to either preliminary efforts to isolate or locate the problem or to assist in efforts to subsequently identify or define the cause of the problem.

The incumbent determines how work is to be accomplished and independently carries it out. The engineer may be required to formulate concepts, perform some theoretical analysis and experiments, and/or evolve experimental design. Assignments are typically short range electronics engineering efforts in support of broader experimental and development projects. Tasks often require high priority investigations designed to produce an immediate "cure" or result. The depth and scope of the work, the extent to which the developmental effort is expected to result in applicable and useful innovation, and the demands inherent in the technical and theoretical environment make for varying degrees of complexity in the work. Tasks typically involve such activities as: experimental projects involving the measurement/ analysis of spectrum phenomena (e.g. radio-wave propagation effects ranging from VHF to millimeter-wave frequencies); modeling, simulating and other analytical and evaluating techniques and methods used in systems and software maintenance and modification; troubleshooting of intricate data acquisition problems in the lab as well as in the field; developing/modifying software for automated real-time data acquisition.

Factor II - Supervision Received Degree B (2 points)

Supervisor or project/team leader provides assignments within the area of expertise (e.g. microwave transmission, wave propagation, spectrum analysis ) with general instructions in terms of stated requirements

and purposes. The incumbent determines specific technical objectives to be achieved and may formulate a proposal.

Normally, assignments are part of a larger developmental effort, and employees' proposals require approval of supervisor or team leader. The engineer independently carries out a plan of attack and keeps the supervisor or team leader apprised of progress. Recommendations for major changes affecting requirements, costs, facilities and time are subject to final approval of the supervisor. Supervisor reviews completed work for adequacy and effectiveness.

#### Factor III - Guidelines and Originality Degree B (2 points)

Technical guidelines and precedents are neither readily available, nor generally adequate. The incumbent develops and applies new techniques and original methods to attack problems in the data/telecommunications field, requiring creativity and insight in finding solutions to technical and theoretical electronics, data gathering and telecommunications issues.

Assignments require professional judgment in dealing with technological and theoretical problems encountered and require initiative, ingenuity and judgment in using advanced techniques and new approaches; analyzing and synthesizing current engineering and scientific findings; adapting and extending techniques and methods processed from other fields; and exploring advancements in knowledge of data/telecommunications phenomena, theories and concepts.

#### Factor IV - Qualifications and Contributions Degree B (4 points)

The work requires professional competence in the electronics engineering aspects of specific areas such as: radio propagation theory, spectrum analysis, data acquisition and requires application of a range of electronics engineering principles, techniques, and methods as well as ingenuity and proficiency in utilizing theoretical, experimental and investigative techniques and methods. Findings and resolutions are often in the form of theoretical investigations, experimental designs, and laboratory evaluations, which in tandem with broader project efforts, provide a basis upon which new and improved techniques and methods for equipment, products, and processes may be predicated.

TOTAL = 10 pts

This position is exempt from coverage under the Fair Labor Standards Act.

### **IV. UNIQUE POSITION REQUIREMENTS**

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