

ELECTRONICS ENGINEER (GS-0855) COMPETENCY MODEL

Knowledge Requirements

Electronic Engineering principles, techniques and practices
Engineering management theories
Bureau-specific mission, vision, goals, and values
Bureau-specific policies and procedures
Laws and regulations applicable to functional area
Standards of ethical conduct for U.S. Government employees

General Competencies

Analytical Reasoning – Identifies rules, principles, or relationships that explain facts, data, or other information; analyzes information and makes correct inferences or draws accurate conclusions.

- Develops theoretical models or approaches in field of expertise (e.g., engineering models, computational models, growth and yield models, and structural models).
- Draws conclusions based on study results.
- Forecasts or makes projections based on data.
- Researches and documents existing knowledge of subject.

Attention to Detail – Is thorough when performing work and conscientious about attending to detail.

- Proofreads, edits or updates scientific, technical, or complex documents (e.g., reports, manuals, regulations and handbooks).
- Makes and documents unbiased scientific observations.
- Analyzes or interprets data or other information.

Decision Making – Makes sound, well-informed, and objective decisions; perceives the impact and implications of decisions; commits to action, even in uncertain situations, to accomplish organizational goals; causes change, accomplish goals; monitors progress and evaluates outcomes.

- Makes logical decisions based on an analysis of the available information.
- Considers both long- and short-term implications of decisions.
- Displays a high level of initiative, effort, and commitment towards completing assignments in a timely manner.
- Presents ideas, facts, conclusions, and recommendations with certainty, consistency, and conviction via oral and written presentations.

Integrity/Honesty – Contributes to maintaining the integrity of the organization; displays high standards of ethical conduct and understands the impact of violating these standards on an organization, self, and others; is trustworthy.

- Maintains honesty and clarity when presenting information.
- Maintains unbiased judgments in the face of pressure or adversity.

Oral Communication – Expresses information (e.g., ideas or facts) to individuals or groups effectively, taking into account the audience and nature of the information (e.g., technical, sensitive, controversial); makes clear and convincing oral presentations; listens to others, attends to nonverbal cues, and responds appropriately.

- Uses oral communication methods (e.g., phone, in person, meetings) appropriate to the situation.
- Listens to and considers the viewpoints of others.
- Communicates complex information and data in terms appropriate for the audience.
- Asks questions as appropriate to understand the points being made by others.
- Gives technical project briefings and presentations.
- Responds to feedback from others and changes communication accordingly.

Problem Solving – Identifies problems; determines accuracy and relevance of information; uses sound judgment to generate and evaluate alternatives, and to make recommendations.

- Analyzes information and trends to anticipate or identify problems.
- Analyzes complex problems, breaking them into manageable parts.
- Generates alternative solutions and methods to solve problems.
- Solicits input from others when solving problems.
- Evaluates alternative solutions to determine the best option.
- Produces solutions in a timely manner that support mission-related priorities and objectives.
- Uses factual data to draw conclusions and make recommendations.
- Able to complete tasks in high stress situations.

Project Management – Applies principles, methods, or tools for developing, scheduling, coordinating, monitoring, evaluating, and managing projects and resources including technical performance.

- Manages, leads, or administers programs, projects, operations, or activities.
- Provides technical supervision of program or project work.
- Promotes or develops and maintains good working relationships with key individuals or groups.
- Collaborates with others or works on teams to accomplish work-related tasks.
- Reviews or modifies processes, products, or models based on experience, testing, evaluation, and certification processes.
- Manages conflicts in a constructive manner to achieve productive resolutions.

Reading – Understands and interprets written material, including technical, manuals and publications, rules, regulations, instructions, reports, charts, graphs, or tables; applies what is learned from written material to specific situations.

- Reads, records and documents data obtained from technical or scientific instruments.
- Identifies trends or relationships based on analyses of quantitative or qualitative data.

Representation – Represents the organization and/or the U.S. government at various internal and external forums (domestic or international meetings, committees, and regulatory commissions).

- Prepares and coordinates the organization's position based on analysis and evaluation.
- Presents/conveys/defends/negotiates organization's position.
- Participates in domestic and/or international technical committees or teams.
- Displays a professional image to others within and outside the organization.

Research – Knowledge of the scientific principles, methods, and processes used to conduct a systematic and objective inquiry; including study design, collection, analysis, and interpretation of data; and the reporting of results.

- Researches multiple sources for required scientific and technical information.
- Conducts applied research in area of specialty.

Teamwork – Encourages and facilitates cooperation, pride, trust, and group identity; fosters commitment and team spirit; works with others to achieve goals.

- Cooperates with team members to achieve goals.
- Demonstrates respect and courtesy for other team members.
- Fosters an organizational environment where team members support one another.
- Facilitates cooperation, trust, and group identity among team members.

Technical Competence – Uses knowledge that is acquired through formal training or extensive on-the-job experience to perform assigned tasks; works with, understands, and evaluates technical information related to the job; advises others on technical issues.

- Tests, uses, or evaluates the application of theoretical models or approaches in field of expertise (e.g., engineering models, computational models, structural models).
- Formulates and interprets test plans, policies, and strategies to ensure scientific validity, adequacy, or maximum efficiency of systems.
- Designs or develops various subsystems, components, or research simulations.
- Designs, develops, and executes tests for various systems, subsystems and/or components.

Writing – Recognizes or uses correct English grammar, punctuation, and spelling; communicates information (e.g., facts, ideas, or messages) in a succinct and organized manner; produces written documents, including technical material that is appropriate for the intended audience.

- Composes written materials (e.g., emails, reports, letters, memoranda, documents) in a succinct and organized manner.
- Edits and corrects documents for proper grammar, punctuation, spelling, format, style, organization, and flow.
- Writes detailed reports that communicate findings, results, or accomplishments in a clear and scientific manner.
- Edits technical requirements or technical specification documents to minimize ambiguity and clarify content.

Technical Competencies

Electronics Engineering – Knowledge of the concepts, principles, theories, and methods related to the design, modification, operation, analysis, test, fabrication, or verification of analog, radio frequency, communication, digital or control electronic circuits, subsystems and systems (e.g., hardware, software, hybrid); applications development (software, security and programming); and knowledge of the tools and techniques used to develop functional, physical prototype or production models and simulations for test and evaluation programs, the prediction of behavior and phenomena, and to communicate concepts.

- Develops, evaluates, constructs, or tests systems or facilities.
- Designs or tests electronic circuit elements, equipment, components and subsystems.
- Develops or reviews specifications for the design or modification of systems or applications.
- Evaluates specifications, proposals and other documentation.
- Develops, proofreads, and/or edits electronic design descriptions, diagrams, maintenance procedures and test plans.
- Knowledge of specification development, review and evaluation as it applies to the acquisition process.
- Provides technical expertise and technical oversight throughout the procurement of electronic systems including the development of procurement requirements, review of proposals, interfaces with systems vendor as Government team member and/or leader.
- Determines acceptability of delivered equipment.