



# ELECTRONICS ENGINEER



At the Federal Bureau of Investigation (FBI), electronics engineers design, implement, test, and operate algorithms on distributed computer systems that exploit secure technologies. An electronics engineer also formulates project objectives, leads and coordinates teams, communicates plans, objectives, and statuses, and creates cost-benefit analyses.

## Special Competencies in Areas of Engineering

Many engineering positions demand specific competence in a particular function or area. For such positions, the FBI may use selective factors to identify if your records show evidence of the required capabilities. This may include limiting consideration to fields of study that provide specific knowledge, skills, and abilities if you apply on the basis of education. These selective factors can be used for positions at all grade levels and must meet the qualifications outlined in the Office of Personnel Management (OPM) [General Schedule Qualification Policies](#).

A typical day for an electronics engineer could require you to program, write or review reports, lead or attend meetings, formulate technical objectives for projects, assess technical deliverables, work on a variety of technologies, and predict approaches.



## WHAT WE'RE LOOKING FOR

The following specialized traits represent the knowledge, skills, and abilities all FBI employees are expected to cultivate and apply to their important work in fulfilling our mission:

- Analytical Skills — especially in the fields of engineering, computer science, and mathematics.
- Problem Solving and Judgment
- Communication
- Organization and Planning
- Flexibility and Adaptability

## Engineering Registration or Licensure

Registration or licensure as a professional engineer is an appropriate selective factor for appointment to certain engineering positions. All registration or licensure is essential for the professional engineer position whose duties may include:

- Provide final approval of major structure and facility design documentation.
- Ensure compliance with state and federal laws.
- Provide objective evidence to agency management and the public that structural work was performed by

certified and competent engineers.

- Provide engineering determinations concerning major aspects of design and construction work to be performed by private-sector engineers.

## Education Requirements

As an electronics engineer, you must meet education requirements or have a combination of education and work experience. The education requirement is met with a bachelor's degree in a school of engineering with at least one program accredited by the Accreditation Board for Engineering and Technology (ABET). Requirements can also be met with studies in differential and integral calculus, or more than one year of coursework in any of the following areas of engineering or physics, provided they are more advanced than first-year physics and chemistry:

- Statics, dynamics
- Strength of materials (stress-strain relationships)
- Fluid mechanics, hydraulic
- Thermodynamics
- Electrical fields and circuits
- Nature and properties of materials (relating particle and aggregate structure to properties)
- Any other comparable area of fundamental engineering science or physics, such as optics, heat transfer, soil mechanics, or electronics

The combination of education and work experience requirement can be met with any college-level education, training, or experience that furnished:

- A thorough knowledge of the physical and mathematical sciences underlying engineering.
- A theoretical and practical understanding of the engineering sciences and techniques and their applications to one of the branches of engineering, demonstrated by a professional registration or licensure or a written test.