School of Technology

Career Track Guide

Electronics Engineering
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What career options will your degree in Electronics Engineering afford you? We’ve assembled a series of career path overviews, job titles, and job descriptions to help you explore the possibilities and focus on a career track.

Job descriptions were compiled from actual online job postings and from Johnson & Wales’ DACUM (Developing a Curriculum) process (when we ask practicing professionals to detail the duties, tasks, skills and required work behaviors associated with their positions). Now is the time to collect all the information you can and make informed decisions about your career path. The information assembled here is a great place to start.
Career Paths in Electronics Engineering

Electronics Engineering offers work in a wide range of industries that use electricity or make products that use electricity. Involved in the research, design, development and testing of a variety of electronics equipment and systems, electronic engineers do work that is essential to the development, manufacture, modification, and maintenance of a wide range of products and equipment, including radios, televisions, computers and telephones. The following Career Paths and supporting titles/descriptions are provided in this Career Track Guide.

Computer/Digital Systems Engineering
- Design Engineering Technician
- Electronics/Digital Designer
- Hardware Engineer
- Electronics/Digital Design Engineer
- Electronics Test Engineer
- Electronics Engineering Manager

Telecommunications/Network Engineering
- Telecom/Network Analyst
- Telecommunications Engineer
- Telecommunications/Network Systems Engineer
- Director of Telecommunications
Career Path #1
COMPUTER/DIGITAL SYSTEMS ENGINEERING

Design Engineering Technician
Design engineering technicians assist engineers in the development, manufacture, modification and maintenance of a wide range of products and equipment.

A design engineering technician:
- Designs and modifies basic circuits, and recommends changes in circuitry or specifications.
-Troubleshoots failed units; analyzes the cause of failures; runs tests; and, where possible, performs all necessary repairs.
- Sets up and runs a variety of environmental, operational and functional tests on components, systems and new products; analyzes and interprets test data; and writes technical reports.

Electronics/Digital Engineer
The electronics/digital engineer is responsible for providing electronic engineering support and expertise in the definition, design, development and testing of products.

An electronics/digital engineer:
- Assists in the design, procurement, evaluation and implementation of new components.
- Creates specifications, performs component characterization, qualification and failure analysis.
-Generates and maintains incoming inspection procedures.
-Prepares reports and conducts design reviews.

Hardware Engineer
Hardware engineers are electronics/digital engineers who specialize in providing engineering support in the definition, design, development and testing of computer hardware equipment, such as memory chips, motherboards, cards, controllers, processors, clocks, USB, high-speed Ethernet, and various peripherals.

Electronics/Digital Design Engineer
The electronics/digital design engineer is responsible for research, development, design and testing of electronic components, products and systems.
Some other responsibilities of an electronic design engineer are:

- Performing analysis of requirements and design of electronic circuit applications.
- Designing, implementing and testing the use and application of electronic engineering principles, techniques and hardware.
- Employing design tools to perform schematic design, analysis, simulation, and board layout.
- Creating manufacturing documentation.
- Working with manufacturing, product test and certification groups to ensure high quality designs.

**Electronics Test Engineer**
An electronics test engineer is able to perform detailed circuit design, including analysis, simulation and schematic capture, and has experience in writing test programs and procedures for electronics.

An electronics test engineer:
- Participates in new product development and design reviews to ensure design for testability.
- Interacts with manufacturing from design through production to achieve high quality throughput.
- Executes revisions to released documents as assigned.

**Electronics Engineering Manager**
The electronics engineering manager provides expert judgment and analysis for the design, development and implementation of technical products and systems.

The electronics engineering manager is primarily responsible for:
- Resolving highly complex technical issues and conducting advanced research.
- Recommending alterations to development and design to improve quality of products and/or procedures.
- Consulting on complex projects.
- Leading and directing the work of others.
Career Path #2

TELECOMMUNICATIONS/NETWORKING ENGINEERING

Telecom Network Analyst
A telecom network analyst is responsible for various aspects of the administration, maintenance and support of telecommunications networks, focusing primarily on systems, servers, workstations and interfaces.

A telecom network analyst:
- Evaluates and implements network management and performance monitoring tools.
- Ensures all elements of the network are stable and operating.
- Develops and maintains documentation for operating standards and procedures.

Telecommunications Engineer
A telecommunications engineer supports various complex voice network operations. He/she works as part of the team planning, designing, configuring, installing and maintaining an organization’s telecommunications system.

Some other responsibilities of a telecommunications engineer include:
- Designing interfaces between telephone switches, servers and application platforms.
- Maintaining up-to-date documentation of all systems, including detailed plans for all stages of testing and analysis.
- Coordinating with help desk to handle requests for telecommunications services, such as setup of equipment, cabling, installation and testing.

Telecommunications/Network Systems Engineer
A telecommunications/network systems engineer is responsible for researching, recommending and implementing changes to systems, servers and workstations. He/she ensures the stability and performance of all systems and applications and performs planning and analysis of systems. This engineer conducts detailed networking need assessments and creates network designs including documentation.

A telecommunications/network systems engineer:
- Works on projects specifically related to hardware, operating system and network.
- Delivers input on all processes of systems engineering including system analysis and design, research, design, integration, installation, operation, maintenance, troubleshooting and repair of telecommunications and other networks.
Director of Telecommunications

The director of telecommunications oversees the operation of the telecommunications department within a company. The director is responsible for analyzing the organization’s entire telecommunications requirements, creating a plan and budget for maintenance, acquisition and upgrades, and managing the carrier relationships.

The director of telecommunications is also responsible for:

• Understanding telecom network technologies, services and costs.
• Approving the design and implementation of audio, video, data conferencing and other services.
• Working closely with business units and departments to assess their telecommunications needs.
• Working with various teams on the technical design, engineering, justification and implementation of new technologies and/or services.