

Alumni & Employer Responses to earning an ETGR Degree

"In my experience, ET has provided me with a great background in understanding more engineering application vs theory. This has helped me in the manufacturing sector a great deal. I have a lot of colleagues, I went to school that work as manufacturing engineers, application engineers, and a test engineer. I graduated with a Mechanical E.T. degree, which encompassed mechanical design, electrical knowledge with circuits, PLC, and instrumentation. In the E.T. dept, they focused a great deal on working on a team. Being in manufacturing, and other roles, knowing how to function in a team is critical to your success. UNC Charlotte has provided me with the tools necessary to become a successful Engineer."

Justin B.

Automation Engineer, Pass & Seymour
ELECTRICAL WIRING SYSTEMS

"Being a Mechanical Engineering Technology major allowed me to see the world of engineering from a more hands-on approach. My current job uses AutoCAD which I am familiar with from the 1101 Lab. Lastly, my degree prepared me for this job by working in a team environment with different individuals from different degrees and backgrounds. Variety is always appreciated!"

P.S My tip for the incoming students is: When choosing a major, remember what you're passionate about and how engineering works for you! Not the other way around!

Serena L.

PIKE Engineering

"The first job I held following graduation was Building Systems Engineer with the North Carolina state licensing agency overseeing hospital construction and renovation. My school's ET degree was the ticket to being considered for an engineer position with the state and what kickstarted my career in healthcare facilities engineering! My school's ET program specifically provided the necessary systems engineering fundamentals and plan review skills needed to learn and succeed as a plans reviewer and inspector with the state. The practical application courses in mechanical systems, and cross training courses in electrical and hydraulic systems also helped to prepare me for the multi-disciplinary design review expectations of the role."

**After several years, Alex was able to earn his PE License in the state of North Carolina.*

Alex H., PE*, CHFM, CHC

Associate VP, Market Segment Leader
Dewberry, Raleigh

“I love telling students about how the ETGR program changed my life and enhanced my career with pay and promotion to new positions. I was a non-traditional student. I worked in manufacturing for 5 years before ever pursuing a degree. I honestly had to enter into a degree because I had been laid-off three times in my five years of working. What I noticed was the folks that had a degree or advanced post high school training in machining were not getting laid-off.

The Engineering Technology program I entered has helped me tremendously, it helped me with my career path switching from the private sector manufacturing jobs, to getting into the public service sector working in Water Treatment as an Industrial Plant Mechanic with the City of Charlotte, and also my current career as a Critical Facilities Manager at UNC Charlotte.

My program was a B.S. in M.E.T. and the program provided me with essentials in CAD software that I use every day reading Architectural, and machine drawings, with AutoCAD, and Bluebeam. I was also able to take the Energy Management course which was knowledge that was essential for my certification as a Professional Energy Manager.

I went into the Engineering Technology program as a machinist, and early on in the program I took the machining classes to get better for that career. I earned an Associate’s Degree in Engineering Technology and that helped me advance my pay from \$17/hr. to \$35/hr. as a NIMS certified CNC Mill Programmer. From there I went on and finished Bachelor’s Degree in M.E.T and that degree helped me to apply for a position in a management role where I started earning an annual salary of \$58,000. Now for those of you keeping up that looks like a pay cut from \$35/hr. to \$28/hr. the difference here was that I had a better home life. I did not have to work overtime and I could attend my children's soccer games and be a better husband and father in general. I went on to continue training to earn more certifications in Vibration Analysis, and as a Tridium Controls Programmer which were easy classes because of the classes I had in my M.E.T degree like PLC programming in Instrumentation and Controls, and AC/DC Circuit analysis. Being exposed to MATLAB, Simulink, LabView and other National Instruments software has really prepared me for the systems I work with daily.

My current career is as a Journey Level Engineer with the State of NC, working at UNC Charlotte pays me an annual salary \$68,000. The current national average for the M.E.T degree according to [payscale.com](https://www.payscale.com) is \$65,000 to \$77,000. I really take pride that I have a job in my degree field and actually get to use the skills I have learned. I am able to apply the engineering processes with each project I am a part of. The projects I get to work on are designing infrastructure for new and existing facilities. I have to size motors, pumps, and fans. I get to perform heating and cooling load calculations (Thermodynamics). I also get to work with engineers, designers, and architects from all over the world.

If I can give any advice it would be:

- do not overload your schedule take 15 or fewer credits per semester and do them well your GPA is too important to be mediocre
- be active, join as many engineering societies as you can and be active hold chair positions, the networking and volunteer opportunities are life changing and priceless
- do your own work and do not let others take credit for your work

Donald G. | PEM | CEFP | CTCP

Critical Facilities Manager | Engineering, UNC Charlotte | Facilities Management

Highlights from Job Descriptions for ETGR Degrees

Healthcare Industry: ELET or MEET

- Coordinates activities relative to new equipment acquisitions, space plans, equipment modification on various equipment configurations
- Maintains inventory of equipment and related materials; provides leadership with recommendations for replacement purchases
- Coordinates assignments with surgery schedule to ensure efficiency of daily schedule
- Must possess ability to interpret complicated schematic diagrams, write equipment specifications and execute advanced technical test procedures
- A high level of accuracy is required for all levels of work

Manufacturing/Energy: ELET

- Electrical Engineering Technicians (EET) assist Project Engineers with layout and design of high voltage substations, switchyards, power quality projects, transmission lines and other high voltage production and distribution projects
- EETs generate and review internal project drawings, one-line drawings, three-line drawings, AC/DC schematics and wiring diagrams
- EETs will generate required calculations and cable schedule documents
- EETs work as part of a project team to complete these tasks in accordance with the project requirements and schedule

Construction: CIET or CMET

- Conduct routine field and/or laboratory tests: perform hand augers with dynamic cone penetrometer (DCP) testing to collect data of subsurface conditions for foundations, roadways and other surfaces
- Daily communication with home builders, concrete vendors, other technicians and project managers
- Complete daily accurate and detailed field testing reports and/or diagrams
- Ability to calculate results from construction materials testing data
- Ability to read and interpret construction documents
- Ability to accurately complete field testing paperwork and detailed figures
- Ability to read and comprehend simple instructions, short correspondence, and memos.
- Ability to effectively present information in one-on-one and small group situations, to customers, clients, and other employees of the organization

Environmental: CIET or CMET

- Inspect construction materials and equipment for conformance with specifications
- Perform final review of drawings and exercise judgment in selecting best design layouts
- Provide technical advice in coordinating detailed site surveys and stake setting
- Interpret engineering project notes, data, and specifications to prepare design and layout of roads, trails, bridges, drainage structures, and other systems
- Conduct field surveys to provide data for civil engineering project designs

- Prepare sketches, construction details, installation drawings and other technical products to support civil engineering projects and operations
- Conduct inspections of civil engineering and construction project materials, equipment, construction techniques, processes, and installation to ensure compliance with contract requirements
- Write reports to inform contractor, engineer, and contracting officer representative of quality assurance and control issues

Compare ENGR to ETGR Entry Level Job Responsibilities

Job Summary

Engineer: Functions in an engineer capacity. Under close supervision, performs routine aspects of engineering assignments requiring knowledge and application of basic engineering principles. Applies knowledge of engineering principles to prescribed techniques and procedures to complete project assignments.

VS

Engineering Technician: Under close supervision, performs engineering technician work requiring basic technical knowledge utilizing electronic applications, processes, standards and document control processes/procedures for the purpose of creating or modifying deliverables.

Summary of Responsibilities

Engineer: Continues to learn, remains current and applies independent knowledge and interpretation about departmental design guides, standards, systems, applicable engineering codes and company policies and procedures relative to assigned tasks.

VS

Engineering Technician: Develops familiarity by reading, understanding and maintaining a working knowledge of standards, systems, document control, departmental guides and company's policies and procedures

Key Responsibilities and Tasks

Engineer:

- Contributes to preparation of less complex engineering deliverables such as drawings, reports, specifications, and studies of limited scope
- Performs routine research and develops recommendations for equipment and/or materials selection
- Collects, assimilates, and manages data for engineering work
- Prepares basic engineering calculations following standard methods and principles used in similar engineering analysis
- Understands and adheres to budget, schedule, and quality requirements
- Focuses on the needs of internal clients (project team leadership) while attempting to gain basic understanding of external client's main interests and drivers
- May provide support to business development or pursuit activities

VS

Engineering Technician:

- Learns the applications required to modify less complex deliverables based on a variety of design inputs
- Ensures that deliverables are accurate and compliant by developing an understanding and complying with the company Quality Program
- Demonstrates personal accuracy and supports continuous improvement and change management efforts
- Learns to identify the needs of internal clients and begins to gain a basic understanding of external client's main interests and drivers.

Basic Technical Skills

Engineer:

- Accredited bachelor's degree in engineering
- Intermediate knowledge of engineering design principles and applicable design guides and standards related to assigned engineering discipline
- Basic knowledge of engineering design principles and applicable design guides and standards related to assigned engineering discipline
- Basic knowledge of construction and constructability practices and principles
- Competencies: Decision quality

VS

Engineering Technician:

- Engineering Design Related Technology Degree
- Working knowledge of Computer Automated Drafting Design (CADD) or other applications or design or modeling skills
- Basic knowledge of engineering standards, systems, document control,
- Competencies: Customer focus