WHAT DOES IT MEAN TO MAJOR IN CIVIL ENGINEERING?

Civil engineers plan, design, construct, operate, and maintain society’s infrastructure components: including roads, bridges, ports, buildings, tunnels, and natural resources. Every day, no matter where you live, you benefit from the infrastructure designed and constructed by a civil engineer.

WHO IS THIS MAJOR FOR?

- Students who have ever wondered how a bridge or a building was designed and constructed, or where the water you drink comes from.

STUDENTS CONSIDERING THIS MAJOR ALSO CONSIDER...

- Construction Management
- Construction Engineering

MATH REQUIREMENTS

- Calculus I, II, and III
- Ordinary Differential Equations
- Statistics
- Linear Algebra

THIS MAJOR OFTEN LEADS TO JOBS IN THE FOLLOWING FIELDS:

- Construction
- Environmental Engineering
- Geotechnical Engineering
- Structural Engineering
- Transportation Engineering
- Land Development
WHAT DOES IT MEAN TO MAJOR IN COMPUTER ENGINEERING?

Computer engineering exists at the intersection of technology and innovation. B.S. in Computer Engineering offers varied career paths in hardware engineering (such as microprocessors) and software development – each of which drives computing advances in industries ranging from aerospace to healthcare. Computer engineers blend electrical engineering and computer science to contribute to advancements in digital technology, computer networking and computer systems. They use hardware and software design and computer programming to make computing platforms and apps more efficient and powerful, to ensure that hardware and software systems are seamlessly integrated, and to make computing systems safer. As a computer engineer, you could develop new computer hardware, design and implement software applications, or enhance the capabilities of networks and communications systems.

WHO IS THIS MAJOR FOR?

- Students who like to design or work with computer hardware.
- Students who like writing computer programs.
- Students who do well in math and sciences.
- Students who like to observe, learn, investigate, analyze, research, and solve problems.
- Students who have inquisitive minds, critical thinkers, and enjoy hands-on learning.
- Students who do like to join student clubs and participate in robotics and/or computer competitions.

STUDENTS CONSIDERING THIS MAJOR ALSO CONSIDER...

- Electrical Engineering
- Information Technology
- Information Systems
- Physics
- Mathematics
- Computer Science

THIS MAJOR OFTEN LEADS TO JOBS IN THE FOLLOWING FIELDS:

- Computer Engineers
- Computer Hardware Engineers
- Computer Software Engineers
- Computer Systems Engineers
- Computer Programming
- ASIC Design Engineers
- Network Systems Engineers
- Computer Systems Network Architect
- Network Test Engineers
- Electrical engineers

MATH REQUIREMENTS

- Calculus I & II
- Ordinary Differential Equations
- Discrete Math
WHAT DOES IT MEAN TO MAJOR IN COMPUTER SCIENCE?
Almost every major challenge facing our world is turning to computing for a solution, from conquering disease to eliminating hunger, from improving education to protecting the environment.
- Computer Science is the field where computing technology is used to solve problems.
- Computer Scientists write software that makes computers do new things or things more efficiently.
- Computer Scientists design and study algorithms to solve problems whether making a computer run more efficiently or designing applications for hand held devices.
- Active areas of study within Computer Science include algorithm design, computer networks, database systems, game programming, software engineering, and computer security.

WHO IS THIS MAJOR FOR?
- Students who enjoy problem solving.
- Students who enjoy coding and writing computer programs.
- Students who want to design and build software.
- Students who are detail-oriented.
- Students who want to be creative and innovative.
- Students who are prepared for Calculus and communication skills.
- Students who want to devise new and better ways of using computers.

STUDENTS CONSIDERING THIS MAJOR ALSO CONSIDER...
- Computer Engineering
- Mathematics
- Information Technology
- Information Systems
- Criminal Justice

THIS MAJOR OFTEN LEADS TO JOBS IN THE FOLLOWING FIELDS:
- Software Engineering
- Systems Software Development
- Computer Programming
- Game Development
- Application Software Development
- Cybersecurity

MATH REQUIREMENTS
- Calculus I & II
- Linear Algebra
- Statistics
- Discrete Math
WHAT DOES IT MEAN TO MAJOR IN CONSTRUCTION ENGINEERING?
A construction engineer is often the key to successfully completing a construction project. Construction engineers are equipped to design and oversee the construction, maintenance and rebuilding of infrastructural facilities such as roads, bridges, airports, buildings and water treatment facilities in ways that best meet the unique project demands while being effective stewards of the environment. You will often work with a team including civil engineers and construction managers to solve technical challenges of complex construction projects.

WHO IS THIS MAJOR FOR?
- Students who are interested in both civil engineering and construction management, this major would be ideal for you. Students will learn the fundamental civil engineering principles along with management skills required to plan and operate complex construction projects.

STUDENTS CONSIDERING THIS MAJOR ALSO CONSIDER…
- Civil Engineering
- Construction Management

MATH REQUIREMENTS
- Calculus I & II
- Linear Algebra
- Statistics

THIS MAJOR OFTEN LEADS TO JOBS IN THE FOLLOWING FIELDS:
- Commercial Construction
- Heavy Civil Construction
- Residential Construction
- Department of Transportation
- Land Development
WHAT DOES IT MEAN TO MAJOR IN CONSTRUCTION MANAGEMENT?
The construction management program at Georgia Southern educates young men and women to be construction professionals and leaders, with the skills to manage the delivery of high quality construction projects around the world.

WHO IS THIS MAJOR FOR?
- Students who like to build things and manage construction projects and resources.

STUDENTS CONSIDERING THIS MAJOR ALSO CONSIDER...
- Civil Engineering
- Construction Engineering

MATH REQUIREMENTS
- Trigonometry
- Statistics

THIS MAJOR OFTEN LEADS TO JOBS IN THE FOLLOWING FIELDS:
- Commercial Construction
- Heavy-Civil Construction
- Residential Construction
- Estimating, Scheduling
- Project Planning and Development
What Does It Mean to Major in Electrical Engineering?

- Electrical Engineering is a broad-based engineering discipline. At Georgia Southern, the Department of Electrical Engineering offers specialization in four concentrations: Power Systems, Embedded Systems, Control Systems, and Communication Systems.
- Power Systems involves the generation, transmission, and distribution of electric power. Power engineers are involved with conventional generation systems such as hydroelectric, steam, and nuclear, as well as alternative generation systems such as solar, wind, and fuel cells.
- Communication Systems involve a broad spectrum of applications from antennas, consumer entertainment to military radar. Advances in communications allows for the use of electronic products in everyday life, like cellphones with text, and internet features, GPS systems, online video conferencing, etc.
- Control systems involve designing systems that control automated operations and processes. Control systems are used in regulating the temperature inside buildings, reducing emissions from cars and trucks, maintaining reliable electrical output from power plants, unmanned space missions, robots, and intelligent controls systems, etc.
- Embedded Systems are self-contained computer system dedicated to perform specific tasks. Such systems use microprocessors or microcontrollers and are the control centers in the designed product. They are used heavily in many engineering systems like airplanes, automobiles, video games, cellphones, GPS navigation, robots, etc.

Who is This Major For?

- Students who do well in math and sciences, especially Calculus and Physics.
- Students who like to observe, learn, investigate, analyze, research, and solve problems.
- Students who have inquisitive minds, critical thinkers, and enjoy hands-on learning.
- Students who join student clubs and participate in robotics and/or computer competitions.
- Students who gain experience in the field via coops/internships in Electrical Engineering (in the area of their interest) and by working with professors in undergraduate research.

Math Requirements

- Calculus I, II & III
- Ordinary Differential Equations

Students Considering This Major Also Consider...

- Computer Science
- Physics
- Mathematics
- Information Technology

This Major Often Leads to Jobs in the Following Fields:

- Electrical Engineers
- Aerospace Engineers
- Engineering Managers
- Electronics Engineers
- Biomedical Engineering
- Power Distribution Engineer
- Systems Engineer
- Design Engineer
- Project Manager
- Test Engineer
- Hardware Engineer
- Software Engineer
- Measurement Engineer
- Production Control Specialist
- Plant Manager
- Engineering Consultant
WHAT DOES IT MEAN TO MAJOR IN INFORMATION TECHNOLOGY?

- IT professionals solve business problems with technology.
- As an IT major, you study fundamental IT concepts then specialize in an area such as network administration/data center management, web/mobile application development, information management, and data science.
- You work with others to complete a senior capstone project, using what you have learned to create an IT-based solution to a real-world problem.
- You enhance your marketability in the financially rewarding IT job market by completing a required internship experience prior to graduation.

WHO IS THIS MAJOR FOR?

- Students who enjoy solving problems and being a “go to” person when technical challenges arise whether it be a single computer or an entire network system problem.
- Students who enjoy working in an applied, “hands on” manner with hardware, software, and data.
- Students who possess strong interpersonal skills and work well with people.
- Students who function well in fast-paced environments.
- Students who are flexible, adaptable and ready and willing to learn new things.

STUDENTS CONSIDERING THIS MAJOR ALSO CONSIDER...

- Computer Science
- Engineering
- Information Systems
- Education
- Nursing
- Biology

MATH REQUIREMENTS

- Survey of Calculus
- Statistics
- Discrete Math

THIS MAJOR OFTEN LEADS TO JOBS IN THE FOLLOWING FIELDS:

- Web/mobile applications development
- Network/systems administration
- Database administration
- Data analysis/data science
- Cybersecurity
- IT consulting
- IT management
WHAT DOES IT MEAN TO MAJOR IN MANUFACTURING ENGINEERING?

- Manufacturing Engineers play a role in the fabrication or actual creation of nearly every commercial product in our lives.
- This even starts with the set-up a layout of the physical plant or production facility where the product is to be manufactured.
- This includes layout of the assembly line, creation of work stations, design or selection of robotic and automation systems, safety issues, quality and productivity, packaging and shipping of the finished product.
- Manufacturing Engineers select the materials and processes to create the finished product.
- Manufacturing Engineers work closely with Mechanical Engineers, ensuring the final product meets design specifications for manufacturability.

WHO IS THIS MAJOR FOR?

- Students who wonder how something is made or like making things.
- Students who enjoy problem solving.
- Students who want to work on teams to solve problems.
- Students who are detail-oriented.
- Students who want to apply a knowledge of Calculus and Physics.
- Students who want to be creative and innovative.
- Students who want to be good technical communicators

MATH REQUIREMENTS

- Calculus I & II
- Statistics

STUDENTS CONSIDERING THIS MAJOR ALSO CONSIDER…

- Mechanical Engineering
- Electrical Engineering
- Mathematics & Statistics
- Information Technology
- Physics
- Civil Engineering
- Computer Science

THIS MAJOR OFTEN LEADS TO JOBS IN THE FOLLOWING FIELDS:

- Product Development Engineer
- Project Manager
- Process Engineer
- Materials Processing Engineering
- Quality Control Engineering
- Sales Director
- Safety Engineer
- Consultant
- Entrepreneur
- Engineering Management Executive
- Lean/Six Sigma Facilitator
WHAT DOES IT MEAN TO MAJOR IN MECHANICAL ENGINEERING?

- Mechanical Engineering is the classic engineering degree and the most popular engineering discipline of the day.
- Mechanical Engineers play a role in designing nearly every product in our lives — basically any system that uses energy or has moving parts.
- Mechanical Engineers determining optimum size, strength, function, material development and application, processing, and energy usage.
- Mechanical engineers create, design, analyze, develop, manufacture, control, test and maintain essential mechanical systems such as aircraft, medical equipment, vehicles, engine and fuel development, construction equipment, environmental systems, heating and ventilation systems, household appliance, industrial machinery, assembly lines, robots, ships, space craft and satellites.
- Areas of Mechanical Engineering Specialization include (1) Robotic, Mechatronic and Automation Systems (2) Mechanical System Design and Analysis, (3) Energy Science (wind, combustion, renewable energy, power generation), and (4) Materials Development and Application.

WHO IS THIS MAJOR FOR?

- Students who wonder how something works or imagine how to make it function better.
- Students who enjoy problem solving.
- Students who want to work on teams to solve problems.
- Students who are detail-oriented.
- Students who want to apply a knowledge of Calculus and Physics.
- Students who want to be creative and innovative.
- Students who want to be good technical communicators.

STUDENTS CONSIDERING THIS MAJOR ALSO CONSIDER…

- Manufacturing Engineering
- Physics
- Civil Engineering
- Electrical Engineering
- Mathematics & Statistics
- Information Technology
- Computer Science

MATH REQUIREMENTS

- Calculus I & II
- Ordinary Differential Equations

THIS MAJOR OFTEN LEADS TO JOBS IN THE FOLLOWING FIELDS:

- Design Engineer
- Project Manager
- Sales Director
- Research Engineer
- Educator
- Consultant
- Entrepreneur
- HVAC-Heating
- Ventilation
- Air Conditioning Engineer
- Engineering Management Executive
The Regents Engineering Pathways Program (REPP) is not a major. It is a program for students who choose to begin study toward an engineering degree in the REPP program at Georgia Southern and upon completion of the REPP requirements (of the intended receiving institution), students apply for admission to one of the engineering degree programs offered by other REPP engineering institutions in Georgia.

**WHO IS THIS PROGRAM FOR?**

- Students who wish to transfer to one of the engineering degree programs offered by other REPP engineering institutions in Georgia.
- Students who choose to study engineering majors not offered at Georgia Southern such as Bimolecular, Chemical, and Nuclear engineering.
- **Important Note:** REPP admission requirements for receiving institutions differ by institution and program and change often. Consultation with Georgia Southern's Director of REPP and the REPP academic advisor is necessary for students to understand current admission requirements and to receive a formal recommendation to apply and transfer to another partner REPP institution in Georgia.

**MATH REQUIREMENTS**

- Calculus I, II, & III
- Ordinary Differential Equations
- Linear Algebra
- Others may be required on the chosen engineering discipline

**STUDENTS CONSIDERING THIS PROGRAM SHOULD ALSO CONSIDER THE FOLLOWING ENGINEERING MAJORS OFFERED AT GEORGIA SOUTHERN:**

- Civil Engineering
- Computer Engineering
- Construction Engineering
- Electrical Engineering
- Manufacturing Engineering
- Mechanical Engineering