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Preparing for Final Exams

Tips

1. Create a study schedule for yourself during Dead Week and Finals. Stick to it!
2. Read Actively, not Passively.
3. Start scheduling study sessions with classmates.
4. Review past tests and homework problems.
5. Attend review sessions.
6. Go see your professor now to get assistance. Avoid the rush during finals week.
7. Review problems that integrate several concepts.
8. Allocate more time to studying material that you know the least about.
9. Spend less time memorizing formulas and more time practicing problems.

10. For proofs, focus on fundamentals, brush up on identities and mathematical identities that relate to the subject. Practice as many problems as possible!

11. Use other resources to better understand the material.

12. Review your notes.

What to do when your answer seems way off:

1. Check your units.
2. Recheck any numbers you took from a chart, table, or graph.
3. Write a note to maximize partial credit.

When you have no clue:

1. Don't leave anything blanks—it tells the professor your don't know anything.
2. Write down an equation, a definition, some sort of reasoning that shows you

know something about the topic.

3. What are the variables involved? What equations an/or methods employ these numbers?
4. Look for key words in the question.
5. What has the professor not covered in other questions?
6. Is there a key chart, graph, or table that may fill the void in the information?
7. Just start writing—it could trigger your memory of a method or similar example.
8. Examine the units for clues.
9. Rewrite the problem in your own words.
10. Could you derive a formula that you've forgotten?





Obtain a Degree from an ABET accredited school (in this case, GT)

Apply, take, and pass the Fundamentals of Engineering Exam (FE). May take during senior year.

Work 4-5 years as an "Engineer in Training"

Take and pass the Principles and Practice exam (PE). Complete all necessary paperwork.

Aerospace Engineering

Aerospace Engineers are involved in all aspects of aeronautics (working with aircraft) and astronautics (working with spacecraft). They conduct research, and design and develop vehicles and systems for atmospheric and space environments. These engineers often specialize in one of many areas such as aerodynamics, propulsion, flight mechanics, orbital mechanics, fluids, structures, guidance & control, and computation.

The field of aerospace technology offers a wide range of employment opportunities. An aerospace team is made up of engineers, scientists, and technicians. Positions are available through the private sector as well as within the U. S. Government. Examples of major engineering roles in the aerospace industry include:

- Analysis
- Design
- Materials and Processes
- Systems Engineering
- Software Development
- Manufacturing

- Flight Research
- Field Service

[Career Options for AE Major](#)
[Potential Employers](#)

Other Links:

[American Institute of Aeronautics and Astronautics](#)
[Aerospace Engineering](#)
[American Helicopter Society International \(The Vertical Flight Society\)](#)
[Aerospace Industries Association](#)

The Path to Licensure: Fundamentals of Engineering Exam

Why should you consider licensure?

- Employers consider licensure an important factor in evaluating employees for continued promotion, more responsible work, and more opportunities for individuals to exercise engineering judgment and discretion.
- Only licensed engineer may submit plans to a public authority for approval, or seal engineering work for public and private clients.
- A legal requirement for those who are in responsible charge of work
- Licensure is a way for new engineers to demonstrate to their employer and clients their commitment to the engineering profession.
- By passing the FE exam, you earn a certificate certifying that you are an "Engineer in Training."

FE Exam—

- Usually offered twice a year (April & October)
- 8 hour exam—general exam in the morning & discipline specific exam in the afternoon
- For GT Students—test is offered at Georgia State University

For instructions on taking the FE Exam, visit <http://www.els-examreg.org/> (Engineering and Land Surveying Examination Services), an affiliate of the [National Council of Examiners for Engineering & Surveying](#)

[FE Study Materials](#)

[FE Study Materials \(LA Tech\)](#)

[FE Pass Rates](#)

[NSPE website: Advantages](#)

[Licensure Advantages](#)

[National Society of Professional Engineers](#)

Mechanical Engineering

According to U.S. Department of Labor statistics, mechanical engineers hold nearly 220,000 jobs, with more than half in manufacturing: machinery, transportation equipment, computer and electronic products, and fabricated metal products manufacturing industries.

Practically every company that designs and produces a product employs a mechanical engineer. But mechanical engineers can also be found in research labs, the military, government, and preparing for other professions such as medicine, law or teaching.

Most mechanical engineering jobs require design experience. When a

need comes about for a new or improved product, companies call upon mechanical engineers to do the job. Engineers have to push beyond the limits of their previous work and use innovative technology to meet project requirements successfully.

A second major area of employment for mechanical engineers is in manufacturing. Manufacturing positions are concerned with everything involved in producing a product, from selecting the appropriate materials to developing the correct machinery to manufacture the

product.

Most mechanical engineers are employed in industry at equipment manufacturers, aerospace companies, utilities, material processing plants, transportation companies, and petroleum companies. They also work with small firms, consulting practices, universities, and government research.

Specific assignments might involve research and development, design of equipment or systems, supervision of production, plant engineering, administration, sales engineering, the testing and evaluation of machines and entire plants.



What Do Mechanical Engineers Do?

The diverse mechanical engineering field can be divided in a variety of ways in terms of job functions. Some of the most common functions relate to these areas of technology, but not all do. Among these fields are:

Product Design -- developing products ranging from biomedical products to gasoline-powered engines. A mechanical engineer designs anything that uses mechanical motion.

Research and Development -- discovering new solutions to human needs or improving older methods.

Manufacturing -- developing the machines that process materials into products. Designing and building machines and systems of machines that improve operating efficiency is of prime importance.

Systems management -- overseeing operations of a large system such as a power plant as well as supervising the people who work there.

Energy -- planning how energy is generated, stored, and moved. Industries that produce and deliver electrical power such as natural gas and oil employ mechanical engineers to develop more fuel-efficient cars, motors, and appliances.

Marketing -- using a technical background for determining the need for a new or modified product, product availability, market size, cost structure, profitability, specifications, and distribution channels.

[Salary Information](#)

[Six Tips for Writing an Effective ME Resume](#)

[American Society of Mechanical Engineers](#)

[Society of Manufacturing Engineers](#)

[Society of Automotive Engineers](#)

A glimpse of specialized areas within ME:

Bioengineering

Fluid Mechanics

Acoustics & Dynamics

Robotics

Materials Science

Computer Aided Design

Thermal Science

Manufacturing

Automation & Mechatronics

Nuclear and Radiological Engineering



Nuclear Engineering encompasses those science and engineering disciplines related to the production of energy from nuclear fission and nuclear fusion.

Radiological Engineering encompasses those science and engineering disciplines related to the application of radiation in industry and medicine.

Health Physics encompasses those science and engineering disciplines related to the protection of people and the environment from radiation.

These fields are related by the common core disciplines of radiation transport and shielding, radiation detection, the interaction of radiation with matter, and radioactivity.

Nuclear engineers harness the

power of the atom to benefit humankind. They search for efficient ways to capture and put to beneficial use those tiny natural bursts of energy from a disintegrating atom. As a nuclear engineer, you may be challenged by problems in consumer and industrial power, space exploration, water supply, food supply environment and pollution, health, and transportation.

As a nuclear engineer, you may...

Develop designs for nuclear plants for electric power and ships.

Apply radiation in the diagnosis and treatment of disease.

Develop ways to use radiation to produce and preserve food supplies.

Operate and support nuclear energy systems to reduce environ-

mental pollution from fossil fuels.

Develop power plants to power satellites and deep space probes.

Develop and apply regulations to ensure safety in handling radiation sources and operating nuclear systems.

[Demand for Nuclear Engineers](#)

[Demands in Engineering Fields](#)

[What Nuclear Engineers Do](#)

[Careers in NRE](#)

[Nuclear Energy Institute](#)

[American Nuclear Society](#)

[Society of Nuclear Medicine](#)

"The scientist explores what is; the engineer creates what has not been."

-- Theodore Von Karman

[Engineering, what can I do with this degree?](#)

A resource guide prepared by the Career Planning staff at Career Services of The University of Tennessee, Knoxville.

Details the following engineering disciplines:

Aerospace, Agricultural, Biomedical, Chemical, Civil, Electrical/Electronic, Industrial, Materials Science & Engineering, Mechanical, Environmental, Nuclear, and Engineering Science & Mechanics

Newsletter brought to you by: Department of Housing Academic Support Coordinator

Contact: Jennifer Kuninsky (404-385-4184)

If you would be willing to talk with other students about one of the majors in this newsletter or if you would like to speak with someone in one of these majors, please e-mail [Jennifer Kuninsky](#).