GEORGIA INSTITUTE OF TECHNOLOGY

Academic Newsletter

BROUGHT TO YOU BY THE DEPARTMENT OF HOUSING-RESIDENCE LIFE

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- **Electrical & Computer Engineering**
- **Computer Science**
- **Preparing for Graduate School**

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NOTE MAKING

Learning to make notes effectively will help you to improve your study and work habits and to remember important information. Often, students are deceived into thinking that because they **understand** everything that is said in class they will therefore remember it. This is dead wrong! Write it down.

As you make notes, you will develop skill in selecting important material and in discarding unimportant material. The secret to developing this skill is practice. Check your results constantly. Strive to improve. Notes enable you to retain important facts and data and to develop an accurate means of arranging necessary information.

Here are some hints on note making.

1. Don't write down everything that you read or hear. Be alert and attentive to the main points. Concentrate on the "meat" of the subject and forget the trimmings.
2. Notes should consist of key words or very short sentences. If a speaker gets sidetracked it is often possible to go back and add further information.
3. Take accurate notes. You should usually use your own words, but try not to change the meaning. If you quote **directly** from an author, quote **correctly.**
4. Think a minute about your material before you start making notes. Don't take notes just to be taking notes! Take notes that will be of real value to you when you look over them at a later date.
5. Have a uniform system of punctuation and abbreviation that will make sense to you. Use a skeleton outline and show importance by indenting. Leave lots of white space for later additions.
6. Omit descriptions and full explanations. Keep your notes short and to the point. Condense your material so you can grasp it rapidly.
7. Don't worry about missing a point.
8. Don't keep notes on oddly shaped pieces of paper. Keep notes in order and in one place.
9. Shortly after making your notes, go back and rework (not redo) your notes by adding extra points and spelling out unclear items. Remember, we forget rapidly. Budget time for this vital step just as you do for the class itself.
10. Review your notes regularly. This is the only way to achieve lasting memory.

The key is to develop a system that enables you to :

- review regularly
- recite (repeating key concepts from class)
- reflect (connecting class ideas to other notes and readings)

http://www.dartmouth.edu/~acskills/success/notes.html

Chemical & Biomolecular Engineering

It is true that chemical engineers are comfortable with chemistry, but they do much more with this knowledge than just make chemicals!

Chemical engineers work in manufacturing, pharmaceuticals, healthcare, design and construction, pulp and paper, petrochemicals, food processing, specialty chemicals, microelectronics, electronic and advanced materials, polymers, business services, biotechnology, and environmental health and safety industries, among others.

They design equipment and develop processes for large-scale chemical manufacturing, plan and test methods of manufacturing the products and treating the by-products, and supervise production.

These engineers work in a variety of manufacturing industries other than chemical manufacturing, such as those producing electronics, photographic equipment, clothing, and paper. They also work in the healthcare, biotechnology, and business services industries.

These engineers frequently specialize in a particular operation such as oxidation or polymerization or in a particular area, such as pollution control or in the production of specific products such as fertilizers and pesticides, automotive plastics, or chlorine bleach.

Undergraduates in this major choose one area of concentration from three areas: biomolecular, green chemistry & engineering, and nanoscience.

Chemical engineering requires more advanced training in mathematics and physics than chemistry.

Resources

Chemical and Biomolecular Engineering

American Institute of Chemical Engineers

What do ChemE's do?

Industry: Salary Data

Overview of Chemical Engineering

What can I do with a major in Chemical Engineering?

Chemical Engineering Salary Information

The History of Chemical Engineering

Chemical Engineering versus Chemistry Science

The **"Big Four"** engineering fields consist of **civil, mechanical, electrical, and chemical engineers.** Of these, **chemical engineers** are **numerically** the **smallest** group.

However, this relatively small group holds a very prominent position in many industries, and chemical engineers are, on average, the **highest paid** of the "Big Four".

Additionally, many chemical engineers have found their way into **upper management**.

A chemical engineer is either currently, or has previously, occupied the CEO position for**: 3M, Du Pont, General Electric, Union Carbide, Dow Chemical, Exxon, BASF, Gulf Oil, Texaco, and B.F. Goodrich**.

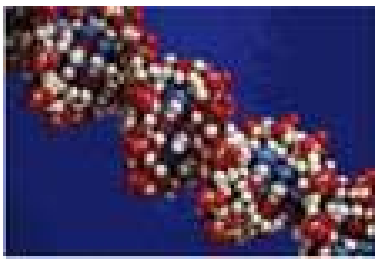
Source: http://www.pafko.com/history/h_whatis.html

Biomedical Engineering

Biomedical engineers develop devices and procedures that solve medical and health-related problems by combining their knowledge of biology and medicine with engineering principles and practices. Many do research, along with life scientists, chemists, and medical scientists, to develop and evaluate systems and products such as artificial organs, prostheses

Specialty areas within the field of biomedical engineering are: bioinstrumentation; biomaterials; biomechanics; cellular, tissue and genetic engineering; clinical engineering; medical imaging; orthopedic surgery; rehabilitation engineering; and systems physiology
Work done by biomedical engineers may include a wide range of activities such as:

- Artificial organs (hearing aids, cardiac pacemakers, artificial kidneys and hearts, blood oxygenators, synthetic blood vessels, joints, arms, and legs).
- Automated patient monitoring (during surgery or in intensive care, healthy persons in unusual environments, such as astronauts in space or underwater divers at great depth).
- Blood chemistry sensors (potassium, sodium, O2, CO2, and pH).
- Advanced therapeutic and surgical devices (laser system for eye surgery, automated delivery of insulin, etc.).
- Application of expert systems and artificial intelligence to clinical decision making (computer-based systems for diagnosing diseases).



- Design of optimal clinical laboratories (computerized analyzer for blood samples, cardiac catheterization laboratory, etc.).
- Medical imaging systems (ultrasound, computer assisted tomography, magnetic resonance imaging, positron emission tomography, etc.).
- Computer modeling of physiologic systems (blood pressure control, renal function, visual and auditory nervous circuits, etc.).
- Biomaterials design (mechanical, transport and biocompatibility properties of implantable artificial materials).
- Biomechanics of injury and wound healing (gait analysis, application of growth factors, etc.).
Sports medicine (rehabilitation, external support devices, etc.).

Career & Major Resources

http://www.bme.gatech.edu/

Biomedical Engineering Society

Engineering in Medicine and Biology-Career Guide

The biomedical engineer is ideally trained to work at the intersection of science, medicine and mathematics to solve biological and medical problems.

Designing a Career in Biomedical Engineering by IEEE

A Global Education: Resources at Tech

Global trends in society have narrowed the gap between countries and continents. The knowledge gained through studying abroad, learning a foreign language, or enrolling in international studies courses is becoming more important to gaining an advantage in the work place.

> *"International education not only promotes mutual understanding and cooperation among nations, it can also strengthen national security, foreign policy, and economic competitiveness. Indeed, our quality of education and life will be enhanced by learning foreign languages and by facilitating international exchanges for students and teachers."*
>
> Statement on International Education Week August 2002
> By Secretary of Education Rod Paige

GT Study Abroad Information

GT International Plan Information

School of Modern Languages

Work Abroad

Check the Office of International Education for dates of upcoming information sessions and deadlines.

How to Form an Effective Study Group:

1. Form them early in the semester and meet regularly based on course deadlines and test dates
2. Members should be people who share similar academic goals and study habits
3. Look for people who stay alert in class, participate, take notes
4. Groups should be 4-6 people
5. Agree upon a set of written expectations and guidelines
   (Decide the frequency of your meetings, individual roles, timelines, contact information, location, etc)
6. Agree on the desired goals and objectives of the group, set agenda at each session
7. Agree on roles and responsibilities of group members
8. Establish a meeting or group leader to keep the sessions productive
9. Take turns 'teaching" each other the material
10. Set an agenda
11. Group study does not replace individual preparation and studying

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 jo52@mail.gatech.edu.