HOW TO LEARN IN ACADEMICS FOR SUCCESS

Compiled By

Dr. K.V.S.Raju

Dean Training

Dr. T. Jagannadha Swamy

Dean Career Guidance

GRIET

GOKARAJU RANAGARU

INSTITUTE OF ENGINEERING AND TECHNOLOGY
(AUTONOMOUS)

Griet SKILL SERIES

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INTRODUCTION

Education is all about the transfer of knowledge. No matter how many times we reinvent it, innovate it or try to change its course, it is, and will be about that. And for centuries, 'teachers dictating and students learning' has it been. But that's just not all. There has been some tremendous efforts and time put into education since time immemorial. People has been developing theories and devising solutions intended for education

Learning is the process of acquiring new knowledge, behavior etc.., or modifying existing, knowledge, behaviors, skills, values, or preferences. The ability to learn is possessed by humans, animals, and some machines; there is also evidence for some kind of learning in certain plants. The changes induced by learning often last a lifetime, and it is hard to distinguish learned material that seems to be "lost" from that which cannot be retrieved.

Getting engineering degree is a ticket to rewarding careers, and sometimes a handsome paycheck. But before you enter the field as a professional engineer, some serious studying, a few late nights, and a few method to get you through your first year are in order.

Effective Learning Methods:

Take good notes

Engineering textbooks can be dense, but endure through the medium. Do your reading – all of it – and keep a highlighter and page markers handy. After the class is over, keep your most useful and well-written textbooks as reference. Your notes, annotations, and highlighting will be invaluable later on. You may even want to keep a "Rules of Thumb" notebook, allowing you quick access to your most-used formulas.

Get to know your professors

Develop a relationship with your professors so you feel comfortable approaching them and asking for help. Get to know one or two key professors particularly well, and turn to them for help with your homework, insight into the industry, and even job or program references.

Ask questions

Your professors want you to learn. But if the only thing you ever ask is, "Will this be on the test?" then you are not taking advantage of their knowledge or willingness to help. Ask for additional examples to clarify difficult equations and concepts. More often than not, your fellow students will thank you for speaking up, and your professor will appreciate your active investment in the material.
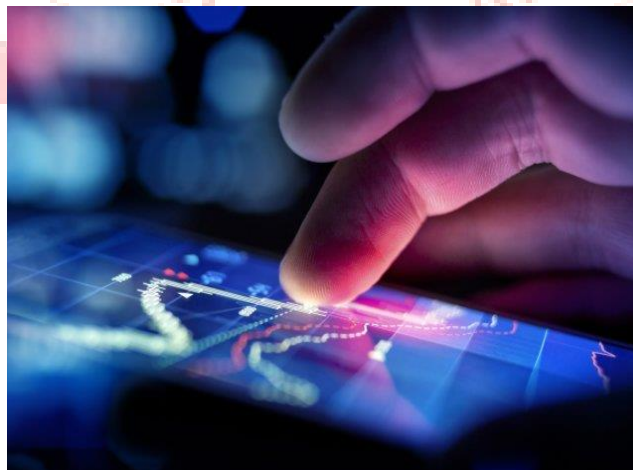
Try to solve a problems

No one wants to do your homework for you. You'll be more likely to get help if you've already begun the effort. Even if you're totally lost, make a legitimate, prolonged effort to solve a problem before asking for help. When you do seek help, be prepared to discuss what you tried already, and bring your scratch paper showing your attempts.

Form a study group

Working alone can get exasperating if you find yourself stuck on a problem. Working with others will not only introduce other viewpoints to approaching a problem, it will also provide encouragement and camaraderie in the face of frustration.
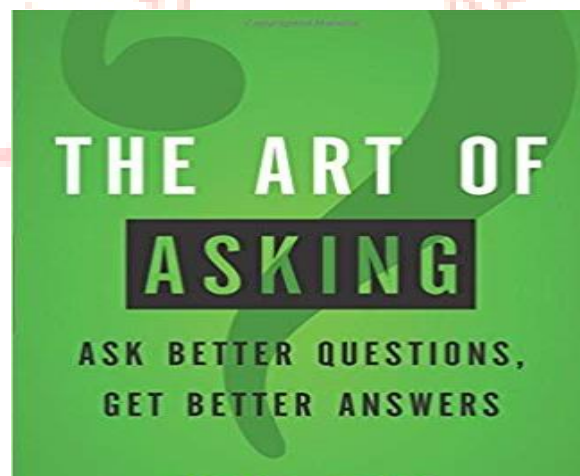
Teach someone else

One of the most effective ways of ensuring you understand something is by explaining it to someone else. Before you move past a subject, make sure you not only answered the question but also can replicate and explain the process. Each new subject and concept will build on the last, so don't move on until you've mastered each new idea.

Diversify your engineering classes.

 Take classes in all sorts of engineering, even if they are not your concentration. Understanding not only the subject matter, but also how other types of engineers approach and solve problems, will lend insight into your own field, from biomedical to mechatronics and robotics to chemical to environmental engineering, AI-ML to ES and beyond.

THE ART OF ASKING

ASK BETTER QUESTIONS, GET BETTER ANSWERS

Hone your skills

The best and most innovative ideas in the world have no hope of growing past the drawing board if you are unable to communicate them effectively. And most technical communication between team members and leadership happens over email, which is a form of writing.

Get a summer internship

One of the best portfolio buildings blocks is the summer internship. Internships do more than build your resume; they demonstrate to potential employers that you can commit to a long-term role and work as part of a team. As a student, it is never too early to start your engineering career.

Build your network

Do not wait until you need a job to start building professional relationships. In addition to getting to know your professors and peers, attend extracurricular lectures, workshops, and networking events, and get to know as many people working or studying in your field as possible.

Get resources from PEAs

Professional Engineering Associations (PEA), such as the National Society of Professional Engineers, IEEE, CSI, SME, etc… are an invaluable resource for jobs, advice, and networking. Identify organizations that share your values and interests, and make as many contacts as possible.

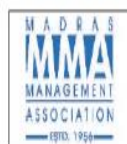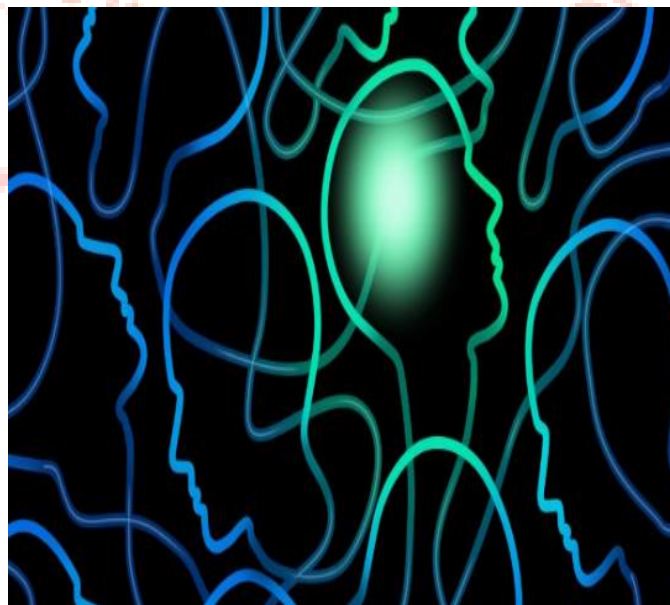|			
Computer Society of India	ICT Academy of Tamil Nadu	The Institution of Engineers	Institute of Electrical and Electronics Engineers
Indian Society for Technical Education	Madras Management Association	National HRD Network	Society of Automotive Engineers India

Learn when to lead

Engineers often work in teams, and every team has one or more leaders. You should feel comfortable in both leading and following the directions of others. Hone your leadership skills and learn how to effectively influence group decisions, but recognize when your contribution should be to take orders and follow direction.

Work on the problem with TEAM

The best results occur when a group discusses ideas that have already been fleshed out by individual members. Learn to do your own work and self-motivate. Always arrive at the team meeting with ideas in mind.

Be a perfectionist

In the words of one engineer, "In the working engineer world, a 99% correct product can cost millions of dollars in damages." Adopt the mindset of practicing something until it is perfect, as opposed to going as quickly as possible and settling for a B. When your work is 100%, even if it is slower, it is valuable.

Identify your inspiration

What made you decide to study engineering? Who do you look up to in your chosen field? Learn about how individuals and companies have sought and found success, and replicate their behaviors. For new inspiration, check out the new innovations, technology and market trends and industrial need time to time.

Take heart and persevere

Engineering is a difficult course of study for everyone, no matter their IQ or test scores. Frustration can lead to feeling like an imposter. Every future engineer has struggled through seemingly impossible problem sets, cranky professors, and gut-wrenching exams.

Academic Success Tips

1: Make sure you thoroughly understand the requirements of each class, how it will be taught, and what will be expected of you. Ask questions about the grading policies and for advice on how best to prepare for class.

2: Become active learner. Be prepared to work ideas into your thinking by active reading, writing, speaking, and listening.

3: Think of each subject you study as a form of thinking. (If you, are in a programming class, your goal should be to think as a programmer; in a Computer class to think like computer; etc.)

4: Become a question. Engage yourself in lectures and 'discussions by asking questions. If you don't ask questions, you will probably not discover what you do and do not know.

5: Look for interconnections. The content in every class is always a SYSTEM of interconnected ideas, never a random list of things to memorize. Don't memorize like a parrot. Study like a detective, always relating new learning to previous learning.

6: Think of your instructor as your mentor or guide. Think of yourself as a team member trying to practice the thinking exemplified by your instructor.

7: Think about the textbook as the thinking of the author. Your job is to think the thinking of the author. For example, role play the author frequently. Explain the main points of the text to another student, as if you were the author.

8: Consider class time as a time in which you practice. Thinking (within the subject) using the fundamental concepts and principles of the course. Don't sit back passively, waiting for knowledge to fall into your head like rain into a rain barrel. It won't.

9: Relate content whenever possible to issues and problems and practical situations in your life. If you can't connect it life, you don't know it.

10: Figure out what study and learning skills you are not good at. Practice those skills whenever possible. Recognizing and connecting your weakness is a strength.

11: Frequently ask yourself: "Can I explain this to someone not in class?" (If not, then you haven't learned it well enough.)

12: Seek to find the key concept of the course during the first couple of class meetings. For example, in a signals and systems course, try explaining what signal in your words. Then relate that definition to each segment of what you learn afterward. Fundamental ideas are the basis for all others.

13: Routinely ask questions to fill in the missing places in your learning. Can you elaborate further this? Can you give an example of that? If you don't have examples, you are not connecting what you are learning to your life.

14: Test yourself before you come to class by trying to summarize, orally or in writing, the main points of the previous class meeting. If you cannot summarize main points, you haven't learned them.

15: Learn to test your thinking using intellectual standards. "Am I being clear? Accurate? Precise? Relevant? Logical? Am I looking for what is most significant?"

16: Use writing as a way to learn by writing summaries in your own words of important points from the textbook or other reading material. Make up test questions. Write out answers to your own questions.

17: Frequently evaluate your listening. Are you actively listening for main concepts? Can you summarize your teacher is saying in your own words? Can you elaborate what is meant by key terms?

18: Frequent evaluate your reading. Are you reading the text book actively? Are you asking questions as you read? Can you distinguish what you understand from what you don't?

Conclusion

Learning and understanding can be facilitated in learners by emphasizing organized, coherent bodies of knowledge (in which specific facts and details are embedded), by helping learners **learn** how to transfer their **learning**, and by helping them use what they **learn**.

Although the process of learning is generally complex it is not entirely unpredictable, and its genuine importance to human culture and the advancement of technology and life makes it a most worthy subject of study. This pursuit has been approached from a variety of perspectives, the five most prominent being (a) behavioral (accepting only observable performance as evidence of learning), (b) cognitive (with a focus on memory structures and mental processes), (c) constructive (emphasizing self-constructed mental representation and discovery), (d) human (recognizing the learner as a whole person and independent agent), and (e) social (acknowledging the learner as a member of society and the social influence on individual learning).

GOKARAJU RANAGARU
INSTITUTE OF ENGINEERING AND TECHNOLOGY
(AUTONOMOUS)

Bachupally, Kukatpally, Hyderabad-500 090, INDIA
Ph: 072077 1441 www.griet.ac.in