



KHALIFA
UNIVERSITY

Introduction to Professional Engineering (ENGR110)

Engineering Education

Engineering Education

Evolving Engineering Education

1. Constantly being reviewed
Improving the content
2. Global Workplace → Multi-cultural skills
3. More strongly based on science and math
4. Bonding between engineering schools and industry

Trend is Master Degree

How Do We Learn?

Receiving new knowledge

- What type of information do you prefer?
 - Sensing learner
 - Intuitive learner
- By what sensory channel do you perceive external information most effectively?
 - Visual learner
 - Verbal learner

Processing new knowledge

- The way you prefer to process new information
 - Active learners
 - Reflective learners
- The way you progress toward understanding
 - Sequential learners
 - Global learners

www.engr.ncsu.edu/learningstyles/ilsweb.html

Learning is a Reinforcement Process

When

Before class

During class

After class, but before next
class meeting

In preparation for test or exam

In preparation for final exam

What To Do

Prepare for the lecture by reviewing notes, reading text, attempting a few problems, formulating some questions

Attend lecture, concentrate intently, take detailed notes, ask questions

Review and annotate notes, reread text; work assigned problems, work extra problems, meet with a study partner or study group to go over material and problems

Review notes; review text, rework problems, meet with a study partner or study group to go over material and problems

Review notes, reread text, rework problems, meet with a study partner or study group to go over material and problems

Mistakes Students Make

Mistakes Students Make

Assume engineering study will be like high school

Program themselves for failure

Spend little time on campus

Neglect studying

Delay studying until test is announced

Study 100% alone

Strategies for Overcoming Them

Work to understand and adjust to the differences between high school and engineering study

Create a life situation that enables you to devote adequate time and energy to studies

Immerse yourself in the academic environment of the institution

Schedule study time. Devote significant time and energy to studying.

Master the material presented in each class prior to next class

Study collaboratively with other students

Mistakes Students Make (continued)

Mistakes Students Make

Come to each lecture unprepared

Avoid professors.

Cut classes/don't get most out of lectures.

Fail to take notes; or fail to use the notes properly in the learning process.

Skim over material in an assigned chapter in a rush to get to homework problems.

Fail to solve assigned problems. Don't approach problems using a systematic problem solving method.

Strategies for Overcoming Them

Review notes, read text, attempt problems prior to each lecture.

Interact regularly with professors outside the classroom.

Attend classes and practice good listening skills. Ask questions in class.

Take effective notes and use a systematic learning methodology to study from notes.

Use reading for comprehension methodology to understand general concepts before attempting problems.

Solve not only assigned problems but extra problems; use systematic problem solving methods.

Important Roles for Your Professors

1. One-to-one instruction
2. Academic advising, career guidance, personal advice
3. Monitor your progress; hold you accountable
4. Give you the benefit of the doubt on borderline grades
5. Help you find a summer job
6. Hire you on their research grant
7. Serve as a reference
8. Nominate you for scholarships or academic awards

Utilizing Campus Academic Resources

1. Academic resource center (tutoring, writing skills, study skills)
2. Library (books, periodicals, on-line materials, reference librarians)
3. Student computer labs (hardware, applications software, internet access, resource materials, training)
4. Academic advising (monitor progress; course selection)
5. University catalog (rules and regulations, college and department information, curricular requirements, course descriptions)
6. Student Handbook (students' rights and responsibilities)
7. Registrar's office (transcripts, registration information)

Organizing Your Learning Process

1. “Take it as it comes”
2. Procrastination
3. Mastering the material
4. Learn to manage your time
5. Priority management

How Many Hours Should You Study?

1. How difficult is the course?
2. How good a student are you?
3. How well prepared are you for the course?
4. What grade do you want to receive?

Learn to Manage Your Time

1. Place a high value on your time
2. Schedule your time
3. Make a serious commitment to your study time

Benefits of Scheduling Your Study Time

1. See if you are overextended
2. More likely to keep up in your classes
3. Provide feedback as to how much you are studying
4. You'll learn what you can do and can't do
5. You'll feel that you have more time
6. You'll feel much less stressed-out over school

Priority Management (Stephen Covey – *Seven Habits of Highly Effective People*)

1. Decide what has high personal value (school, family, health, etc)
2. For each thing that needs to be done decide:
3. How urgent is it? (Requires immediate attention; doesn't require immediate attention)
4. How important is it based on personal values? (Important; or not important)
5. Unimportant things whether urgent or not – ignore
6. Things that are both important and urgent (crisis management) – must be tended to IMMEDIATELY
7. Things that are important but not urgent – tending to them is the key to overall effectiveness



Preparing For Tests

1. Schedule time for review
2. “Scope out” tests
3. Practice under time pressure
4. Get a good night’s sleep
5. Make sure you have the right materials and tools
6. Arrive early

Test-Taking Strategies

1. Size up the test
2. Work the easier problems first
3. Be aware of the time
4. Complete a problem before leaving it
5. If time permits, check and recheck your work (never leave a test early)
6. Other?

Making Effective Use of Your Peers

Learning Modes

1. Solitary – You learn by yourself
2. Collaborative – You learn with others

“research indicates that about 90 percent of first-year engineering students do virtually 100 percent of their studying alone.”

R. Landis

Frequently Asked Questions

1. What percentage of my studying should be done in groups?
2. What is the ideal size of a study group?
3. What can be done to keep the group from getting off task?

Computer Engineering (example on how to read your curriculum)

