

ENGR 150:
**INTRODUCTION TO HIGHER
EDUCATION FOR ENGINEERS**
MONDAY, NOVEMBER 2

Professor Ethan Lipton
FALL QUARTER 2009

TODAY'S AGENDA – REVISED

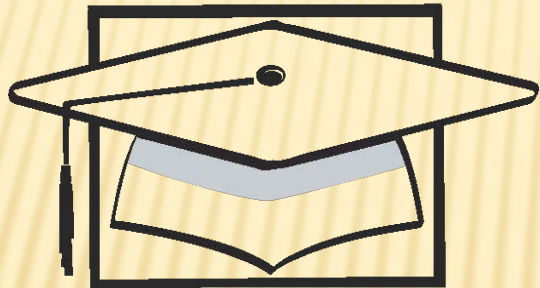
Reading Assignment: Sections 4.1, 4.2 and 4.3

Problem Assignment: Chap. 4: Problems 3, 5, 6 and 8

Class Discussion: Early Course Preparation
Preparing for Lectures
During Your Lectures

REVIEW

Understanding the Teaching/Learning Process



CHARACTERISTICS OF “EXPERT” LEARNERS

- ✘ Control the learning process rather than become a victim of it
- ✘ Are active, not passive, in their approach to learning
- ✘ Are motivated (e.g., enjoy learning, have short-term and long-term goals, etc)
- ✘ Are disciplined (e.g. have learned good habits and use them consistently)
- ✘ Are more aware of themselves as learners (e.g. know their own strengths and weaknesses)
- ✘ Initiate opportunities to learn
- ✘ Set specific learning goals for themselves

REVIEW

MORE CHARACTERISTICS OF “EXPERT” LEARNERS

- ✘ Have a larger repertoire of learning strategies from which to choose
- ✘ Know not only *what* to learn, but *how* to learn
- ✘ Plan their approach to learning
- ✘ Monitor their learning while it’s happening
- ✘ Are more adaptive because they do self-monitor while learning
- ✘ Reflect more upon their own learning
- ✘ Evaluate the effectiveness of learning approaches and strategies
- ✘ Use learning strategies selectively
- ✘ Tend to attribute failures to correctable causes
- ✘ Tend to attribute successes to personal competence

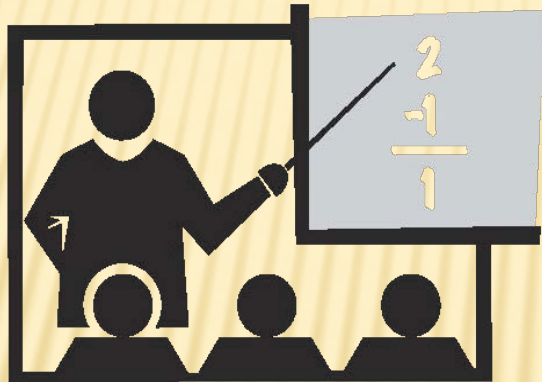
REVIEW

LEARNING IS A REINFORCEMENT PROCESS

WHEN	WHAT
Before class	Prepare for the lecture by reviewing notes, reading text, attempting a few problems, formulating some questions
During class	Attend lecture, concentrate intently, take detailed notes, ask questions
After class but before next class	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
In preparation for test/exam	Review notes; review text, rework problems, meet with a study partner or study group to go over material and problems
In preparation for final exam	Review notes, reread text, rework problems, meet with a study partner or study group to go over material and problems

REVIEW

Making the Most of How You Are Taught



EARLY COURSE PREPARATION

- ✘ Start of a course can be likened to the start of a race
- ✘ Using the course syllabus
- ✘ Acquiring textbooks and other materials

PREPARING FOR LECTURES

- ✘ Review notes, read text, attempt problems, formulate questions
- ✘ Little like “warming up” for a physical workout
- ✘ Makes lectures a reinforcement rather than an initial exposure
- ✘ Small effort can have a big payoff

DURING YOUR LECTURES

- ✘ Sit near the front
- ✘ “Be here now” (concentrate)
- ✘ Practice good listening skills
- ✘ Take good notes
- ✘ Ask questions in class

CHARACTERISTICS OF A GOOD LISTENER

- ✘ Works at finding value in all topics. Listens to discover new knowledge.
- ✘ Judges value of the content rather than the delivery.
- ✘ Listens for central themes. Uses them as anchor points for the entire lecture.
- ✘ Works hard at listening; remains alert.
- ✘ Focuses on understanding completely rather than coming up with opposing views.

CHARACTERISTICS OF A GOOD LISTENER

(CONTINUED)

- ✘ Fights distractions; ignores bad habits of other students; knows how to concentrate.
- ✘ Welcomes difficult material as exercise for the mind.
- ✘ Does not get hung up on emotionally charged words or ideas; listens with an open mind.
- ✘ Uses extra time to think more deeply about what the lecturer is saying; summarizes what has been covered.

NOTE-TAKING

- ✘ Good notes give you a record of what's important
- ✘ Spiral notebook vs. three-ring binder
- ✘ Cornell Note-Taking System

ASKING QUESTIONS IN CLASS

- ✘ Memory level questions
- ✘ Convergent thinking questions
- ✘ Divergent thinking questions
- ✘ Evaluation thinking questions

GROUP DISCUSSION: DIFFERENCES BETWEEN ENGINEERING STUDY AND HIGH SCHOOL

In your group, brainstorm a list of the major differences between the teaching/learning process you experienced in high school and the teaching/learning process you will encounter in university-level math/science/engineering study. Once you have a list of differences, discuss strategies for adjusting to each item on the list.

Appoint a leader to keep the discussion on topic and a recorder to write down and report what was learned

SEE YOU NEXT CLASS . . .

Reading Assignment: Sections 4.4 and 4.5

Problem Assignment: Chap. 4: Problems 10, 11, 14 and 17

Class Discussion: Making Effective Use of Your Professors
Tutors and other Academic Resources