



# Study Guide for Analytical Studies

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*"Students that **study away from housing** and **study with others** religiously, seven days a week, can **improve their GPA** from 0.5 point to as much as a full grade point!"*

## Do All of your homework, even those not collected!

- Your study periods per week should equal an absolute minimum of 3 times the hours enrolled.
- Complete assignments as soon as possible.
- Be neat. Do not memorize problems or their solutions; learn to apply the theories learned, using the problem solving method.
- Memorize only the definitions and other factors suggested by the instructor.

## Study away from housing!

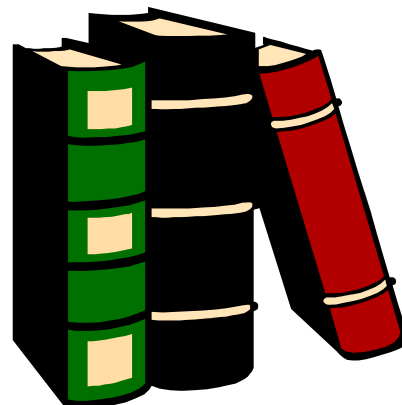
- Too many distractions.
- Soft bunk or couch too handy to rest on and fall asleep.
- Food too handy; causing too many long (five or more minutes) breaks.
- Too many people interrupting or too handy for you to go visit.

## Study with 1-2 other students seven days a week! (except preliminary reading or research)

- Eliminates procrastination. (Commitments to others are generally kept but with self, its "I'll do it tomorrow".)
- Two heads are better than one.
  - ◇ More efficient with time.
  - ◇ Minimizes repetitive mistakes.
    - You will spend less time on difficult problems, before finally seeking help.
    - More viewpoints available to determine priorities of the instructor.
- Learn to organize and work with a team to enhance your laboratory and project grades. Also enhances team skills for career opportunities.
  - ◇ Industrial projects are too complex for one person.
    - Particularly true for jobs in engineering, technology, applied mathematics and applied science.

## Exam Preparation: Practice problems!

- Practice, practice, and practice working problem assignments until:
  - ◇ The easy ones can be completed in less than 5 minutes, and
  - ◇ The more difficult ones in less than 10 minutes.
- After you have completed a new assignment, work one problem from every previous assignment every week of the semester without any notes or help. This will still take considerable time, so balance your weekly schedule (see Time Management Chart). Time yourself!
- Occasionally work different problems from those assigned so you learn the proper procedures instead of memorizing problem solutions.
- Don't mislead yourself. If you had to use a reference to complete a problem...you don't know it!



**REMEMBER, MOST EXAM PERIODS ARE ONLY 50 MINUTES LONG**

### WEEK BEFORE AN EXAM

- Rework all problems expected to be on the exam each day more often than the other sample problems. Be sure to work each problem completely when reviewing; don't just scan them.
- Practice with study partners recalling all theorems and facts required to be memorized. Some students find flash cards useful (titles or questions on the front side, answers on the back side).

## Reduce Stress from Family Relationships

(Reduce all stress, but especially this one!)

- Make sure spouse is enrolled in at least one class.
  - ◇ Helps your spouse understand why so many hours are required for study.
- Be sure to plan time for the family each week (see Time Management Chart).
- Be sure to do something with the spouse alone, and what the spouse wants to do (leave children with baby sitter or trade baby sitting duties with friends).

*“Be sure to work each problem completely when reviewing; don't just scan them”*

*"This is **not** a 5-day/ week program like high school"*

## Don't Commute Long Distances Daily, To and From K-State

- **DON'T!!!** It is extremely rare for a student to graduate in Engineering if they:
  - ◇ commute more than 15 miles one way, or
  - ◇ commute home, or to a weekend job, more often than every 4th weekend.
- These students do not have the advantage of studying away from housing and studying with others students, which greatly lowers their GPA.



## Balance Your Weekly Schedule

- Plan all seven days of a week for:
    - ◇ Study time (highest priority)\*
    - ◇ Recreational time\*\*\*
    - ◇ Regular exercise\*\*\*
    - ◇ Regular sleeping a must, from 7 to 8 hours per night\*\*\*
    - ◇ Eating properly and regularly\*\*\*
  - If you have part time work and/or other non-academic activities:
  - An average engineering student can work and/or be involved in non-academic activities 15 hours per week and earn "C" or higher grades in 15 credit hours.
  - If you must work more hours because of financial need, then the number of credit hours enrolled must be reduced by one for every two additional hours on the job, or "D" - "F" grades can be guaranteed!
  - A student capable of a 3.500 or higher GPA might earn "C" grades instead of "D"- "F" grades, but most will earn "D" - "F" grades for the credits enrolled above the recommended credits.
    - ◇ To check recommendations of the Semester Time/Load chart, determine the average number of hours per semester
- \* Allow for break times during study periods every 30 to 40 minutes, but the break should be no more than five minutes long!
- \*\*\* A Health body maintains a healthy mind!
- that a "C" or higher grade was earned the past two or more semesters. In future semesters, you should enroll in no more than that average number of credits, including retakes, or reduce you non-academic hours.
- Note: RETAKE classes must be treated as new classes, if you hope to improve you grade point average. Take all new notes and redo all assignments from the beginning of the session.**

*"Starting with more than the average hours and later dropping to the average causes you to be behind and earn lower grades in the remaining classes. "*

## Balance Your Weekly Schedule (cont'd)

### SEMESTER TIME/LOAD CHART

(Non-Academic & Job Hours vs Hours Enrolled)		
Non-Acad. Activities and/or work-hours/wk	Credit Hrs./Sem	Credit Hrs./Sum. Session
9	18	-----7
11	17	
13	16	-----6
15 #####	15	
17	14	-----5
19	13	
21	12	
(12 hrs./sem. required for PELL grant)		
23	11	-----4
25	10	-----3
27	9	
(9 hrs. required for full financial aid support)		
29	8	-----2
31	7	
33	6	-----1
35	5	
36	4	

**Student Services is on  
the Web!**  
[http://www.engg.ksu.edu/  
student-services/  
index.html](http://www.engg.ksu.edu/student-services/index.html)

*"It is never too late to  
retake College Algebra  
and earn the "B" grade;  
and this is the only  
method that works to  
improve ability in  
algebraic skills (using  
self study workbooks  
won't help).*

### Commitments—Learn to fulfill them!

- Especially fulfill commitments to yourself (following good health practices, Time Management Chart, etc.).
- Never be tardy to class or appointments.
- Never skip classes or appointments, except in emergencies.
- Never skip study periods! (postpone within 7 day period, but never skip)
- Always inform Engineering Student Services Office when you are sick or involved in emergencies and are unable to attend classes for more than 2 days or when missing exams (so they can verify emergencies to instructors).

### Difficulty with mathematics, science or engineering COURSES (such as enrolling and then dropping, and /or retaking classes two or more semesters before finally earning "C" grade)

- RETAKE COLLEGE ALGEBRA. A grade of "B" or "A" in College Algebra, and at least a "C" in Trigonometry is an **absolutely necessary** prerequisite for the Calculus I, II, and III, Engineering Physics I and II, all engineering courses, and especially Differential Equations.
- "B" grade in College Algebra will increase the probability of earning higher grades in all future analytical courses, and the courses will be **less stressful**.
- Difficulty in only Calculus II and Engineering Physics I:
  - ◇ Weakness in Trigonometry is likely
  - ◇ Retake Trigonometry or complete a self study workbook such as Schaum's Outline on Plane Trigonometry.
- If mathematics ability is sufficient ("C" grades and no retakes), then retake the prerequisite course(s) for the "problem" course(s).

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