

ENGR 4882/4892 Senior Engineering Design Notebook

The senior engineering design notebook is the most important record keeping means for your project. The notebook is the place you work, the place you think, the place you document. While you are the first audience for the notebook, the notebook is also the archival record of when an invention was conceived and how issues related to the design were addressed.

You know you have a good design notebook when misplacing it leads to immediate panic.

You are required to purchase and maintain a notebook for ENGR 4882/4892. We recommend the "National Brand® Lab Notebook," 96 sheets, graph ruled, part number 53110, available at the UCO bookstore and at Staples.

WRITE YOUR NAME, TELEPHONE NUMBER AND PROJECT NAME IN LARGE BOLD LETTERS ON THE FRONT OF YOUR NOTEBOOK USING A SHARPIE MARKER. GO ON THE ASSUMPTION THAT YOU WILL LOSE YOUR NOTEBOOK AND WILL WANT IT RETURNED FAST.

Leave the first page blank for a table of contents. Use one side of each sheet only as the paper is thin and the ink bleeds and leaving the facing page blank allows room to go back and add a sketch. Number every page in the top outside corner. Date every entry.

Your Senior Design Coordinator will collect your notebook periodically during the year to assess your progress and give you feedback on your notebook style. It will also be collected at the end of the course to help your advisor evaluate what you contributed to the design.

The final report documents the chosen design, but your notebook tells how you got there. Think about this. You have just been in a car accident that puts you in a coma for eight weeks right when you are working on a critical project for 3M. Your notebook is the only thing that the engineer who is picking up your work has to go by to see what has been done on the project. So, remember that what you put in your notebook is not just for you, but for others as well.

Information in the notebook goes in as you think of it. More polished, edited versions are reserved for technical reports. In other words, make the notebook entry now rather than falling into the bad habit of transcribing edited entries at the end of the day.

Try as much as you can to use visual thinking methods for your notebooks. It should be covered with thumbnail sketches of ideas, free-body diagrams, equations, design process and the like. Do not use the notebook for class lecture notes.

Go for volume. If you are really participating on your design project, you should be filling up at least 10 pages each week. It is not unusual to fill one notebook and be starting on a second before the end of the course.

What do I put in my design notebook?

- Calculations.
- Ideas
- Sketches
- Experiments
- Flowcharts
- Electrical schematics
- Information gathering phone calls or emails (Record the date, the name of the person you spoke to, his or her title and company and the telephone number and/or email.)
- Model numbers, source and cost of parts and raw materials which you could use for your design
- Cost estimations.
- Emails related to project.
- Assembly steps.
- Action items assigned to you at meetings
- And much, much more...

Here are some tips on how to maintain an excellent notebook:

- Use pen or marker, never pencil.
- Organize the notebook chronologically and date each entry. Dating is very important if you want to follow up on a phone call or if the Patent Office wants evidence on exactly when you came up with your invention.
- Number the pages. That way on one page you can write cross-referencing notes like, "See page 23 for other info on cylinders".
- Put a rough table of contents on the first page.
- Never erase. If you don't like what you have, cross it out with a large X that will let you see what's underneath. This is important so you can see your mistakes and not make them twice. It is also important in future patent litigation.
- Use lots of whitespace to separate entries. Whitespace makes it easier to scan it for information later.
- Write everything in the notebook rather than on separate slips of paper. However, if that calculation you made on the cafeteria napkin is critical, just tape the napkin right in the notebook.
- The design notebook is not a place for course lecture or administrative notes. Use another notebook for that.
- Keep your notebook with you at all times so you can record that brilliant idea on the spot. Some of your best thinking may happen in the middle of the night or during a movie. Architects and artists always carry a sketch pad with them and are sketching throughout the day. Engineers do the equivalent in their design notebook.
- Use it as a diary to record how you spent your hours on the project.
- Keep it neat. Assume that your boss is going to read it to determine how big a raise you get.
- Put your name and a telephone number on the front in big, dark letters.
- Don't spill Coke on it.

To review:

1. Use required notebook, unless otherwise instructed by your advisor.
2. Name and phone number on the front
3. Number pages and date entries.
4. Fill at a rate of at least 5-10 pages per week.
5. No lecture notes in your engineering design notebook.