

ENGINEERING LOGBOOKS

Definition:

An engineering logbook is a personal/professional reference about project learning and results. To protect intellectual property in the workplace, it should be bound so that pages cannot be inserted/removed, written in ink, dated, and fill consecutive pages.

Rationale:

High performing individuals in all professions are similar to the extent that they monitor and control where they invest their time, they learn and apply the best practices their profession, and they regularly take time to learn from their successes and failures.

General Expectations:

- 5-6 pages of thoughtful entries per week in support of a quality design process
- log of planning, communications, team meetings, and lecture notes (~20% of entries)
- project learning and product development (~70% of entries)
- review of individual/team/product performance (~10% of entries)
- organization/format for easy re-reading/re-use (self, team, mentor, instructor)

Industry Expectations:

1. Record the date on each page. Start each day on a new page.
2. Label each entry and record this in a table of contents (reserve 3-4 pages at start).
3. Use ink. Do not erase. Delete an entry by neatly drawing a single line through it.
4. Do not remove pages, and do not skip pages.
5. Avoid backfilling. If you realize later that you left something out, or just want to summarize something, go ahead and write it in, noting that it's after-the-fact.
6. Include *everything* you contribute to ... good, bad, and ugly.

Sketches/doodling	Customer needs/requirements
Class notes	Project objectives
Meeting notes	Action Items
Half-baked Ideas	Math calculations
Work-in-progress	Design alternatives
Vendor notes	Research findings
Sources of ideas	Evaluation of data/results
Design reviews	Decision criteria
Design process	Rationale for decisions
Project reflections	Professional development

Logbook Prompts:

If you just finished...	Ask yourself...
A meeting,	<ul style="list-style-type: none">• What were the main outcomes of the meeting?• Was the meeting productive, and why?• What are your personal action items before the next meeting?• Is the team heading in the right direction?
Brainstorming,	<ul style="list-style-type: none">• Which ideas seem most feasible, and why?• Are there enough good ideas?• How could better ideas be developed based on this session?
Engineering Analysis,	<ul style="list-style-type: none">• What were the governing equations?• What were the most important findings?• What do the results mean and how should they be applied?
Visualization, (by hand or in CAD)	<ul style="list-style-type: none">• What are the major features/discoveries and why are these significant?• What was learned about the problem or solution possibilities?• What problems were resolved and what still needs to be addressed?• How does this piece integrate with the whole?
An internet search	<ul style="list-style-type: none">• What key information did I find? How does it help achieve the project objectives?• Are there other sources that should be pursued?• What new questions were generated?

LOGBOOK REVIEW FORM

Engineer:

Reviewer:

Date:

STEP 1: Inventory your six best logbook entries and rate each one using the rubric below.

1- Missing	2- Incomplete, minimal long-term value to author	3 – Complete, clear long-term value to author	4 – Exemplary, considerable long-term value to others
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Entry	Date	Rating

STEP 2: Self-assess your logbook in the areas below using the scales provided.

----- 2-----3-----4-----

Project Management → overall rating for logbook since last review

- | | | |
|--|---|--|
| <input type="checkbox"/> vague goals | <input type="checkbox"/> multiple/divergent goals | <input type="checkbox"/> focused & strategic goals |
| <input type="checkbox"/> few action items | <input type="checkbox"/> sequenced tasks | <input type="checkbox"/> tasks remove bottlenecks |
| <input type="checkbox"/> few team/client notes | <input type="checkbox"/> some team/client notes | <input type="checkbox"/> extensive team/client notes |
- (in the context of ME 410, consider your client to be mentors, staff, and instructors)

Design Development → overall rating for logbook since last review

- | | | |
|--|---|--|
| <input type="checkbox"/> sparse notes & analysis | <input type="checkbox"/> relevant notes & analysis | <input type="checkbox"/> detailed notes & analysis |
| <input type="checkbox"/> random decisions | <input type="checkbox"/> major decisions highlighted | <input type="checkbox"/> key decisions justified |
| <input type="checkbox"/> no illustrations | <input type="checkbox"/> basic illustrations w/o discussion | <input type="checkbox"/> detailed illustrations & discussion |

Assessment (of self & team) → overall rating for logbook since last review

- | | | |
|---|---|--|
| <input type="checkbox"/> little reflection | <input type="checkbox"/> occasional reflection | <input type="checkbox"/> regular & effective reflection |
| <input type="checkbox"/> little awareness of strengths | <input type="checkbox"/> basic awareness of strengths | <input type="checkbox"/> detailed knowledge of strengths |
| <input type="checkbox"/> little awareness of improvements | <input type="checkbox"/> some areas cited for improvement | <input type="checkbox"/> detailed action plans for improvement |

Organization → overall rating for logbook since last review

- | | | |
|---|--|--|
| <input type="checkbox"/> entries on demand | <input type="checkbox"/> regular entries | <input type="checkbox"/> spontaneous entries |
| <input type="checkbox"/> entries without labels | <input type="checkbox"/> entries with generic labels | <input type="checkbox"/> entries with informative labels |
| <input type="checkbox"/> haphazard layout | <input type="checkbox"/> readable | <input type="checkbox"/> thoughtful layout for rereading |

STEP 3: Paste this form in your logbook and make an entry examining the two greatest strengths and two greatest areas for improvement in your personal documentation. State why each strength as well as each improvement adds value. Explain how you might implement each improvement.