ENGINEERING LOGBOOKS

Definition:
An engineering logbook is a personal/professional reference about project learning and results. To protecting 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 personal activity, communications, and team activity (~40% of entries)
- research and engineering analysis (~40% of entries)
- review of individual/team/product performance (~20% of entries)
- organization/format for easy re-reading/re-use (self, team, mentor, instructor)

Basic Procedures:
1. Date each page. Start each day on a new page.
2. Use descriptive headings; record 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.

<table>
<thead>
<tr>
<th>Sketches/doodling</th>
<th>Customer needs/requirements</th>
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<tbody>
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<td>Class notes</td>
<td>Project objectives</td>
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<tr>
<td>Meeting notes</td>
<td>Action Items</td>
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<tr>
<td>Half-baked Ideas</td>
<td>Math calculations</td>
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<td>Work-in-progress</td>
<td>Design alternatives</td>
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<td>Vendor notes</td>
<td>Research findings</td>
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<td>Sources of ideas</td>
<td>Evaluation of data/results</td>
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<td>Design reviews</td>
<td>Decision criteria</td>
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<td>Design process</td>
<td>Rationale for decisions</td>
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<td>Project reflections</td>
<td>Professional development</td>
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Logbook Prompts:

<table>
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<tr>
<th>If you just finished…</th>
<th>Ask yourself…</th>
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| A meeting,            | • 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,        | • Which ideas seem most feasible, and why?  
                        |   • Are there enough good ideas?  
                        |   • How could better ideas be developed based on this session? |
| Engineering Analysis, | • 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) | • 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    | • 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? |

Good Engineering Logbook Practices:

- Use descriptive entry headings and dates in a standard page location.
- Record all personal communications related to project.
- Include and describe sketches, drawings, and photographs.
- Prominently display team contact information and team charter.
- Maintain list of weekly action items and check-off completion.
- If paste-ins are more than one page, put these in team 3-ring binder.
- Keep a personal timeline of key deliverables and due dates.
- Explain and analyze design ideas you are working on.
- Document methods and test procedures.
- Sign and witness often.