Biotechnology Laboratory Notebook Protocol (Biotech Series)

Rubric for Laboratory Notebook (Formative and Summative Grades)

Objective	Emerging 0-10	Developing 10-20	Advanced 20-25	Score
Organization Organize lab notes effectively	1. Pages are not numbered, dated or signed. Few have "from page" and "to page "direction. 2. Few titles or headings 3. Table of contents is missing and/or incomplete. 4. When experiments are on different sections of the notebook, forwarding and previous section information are not provided.	1. Most pages are numbered, dated and some are signed (per SOP). Most have "from page" and "to page "direction. 2. Titles and headings are clearly marked in most experiments. 3. Table of contents is mostly current and complete 4. When experiments are on different sections of the notebook, information on the location is hard to follow.	1. All pages are numbered and have "from page" and "to page "direction. Every section is dated and signed (per SOP). 2. Each experiment has a Title, Purpose, Materials, Procedure, Results and Conclusion 3. Table of contents lists the date, experiment title, and page numbers for each experiment. 4. When experiments are on different sections of the notebook, forwarding and previous section information are clearly provided.	_____
Content Describe materials and methods used and document results	1. Methods are incompletely described. 2. Figures and Tables are not included when appropriate. 3. Observations are not described.	1. Methods and Materials are described in most experiments. 2. Most Figures and Tables are included but not properly labeled. 3. Observations are noted but lack details.	1. One could repeat the experiment from the Methods and Materials described. 2. All Figures and Tables are included and labeled (per SOP). 3. Observations are carefully recorded with details.	_____
Analysis Describe data analysis	1. Data analysis is rarely described or included. Little work shown. 2. Very little error analysis 3. Very few inferential statistics were used.	1. Data is analyzed, but the methods used were not full described and work was partially shown 2. Error analysis is only qualitative. 3. Inferential statistics used infrequently and/or incorrectly	1. Data is analysis is complete with sample calculations written out in full. 2. Error analysis is qualitative and quantitative. 3. Inferential statistics used correctly when applicable	_____
Interpretation Reach a conclusion	1. Conclusions were not documented well.	1. Immediate thoughts are recorded for most experiments, but without reflection or future direction.	1. Results are interpreted in the context of the hypothesis being tested or technique being conducted. Researcher provides reflection into error analysis and future direction for research.	_____