

# INTERMEDIATE LABORATORY - PHYX 3870

## *Annotated Bibliography*

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### Experimental Methods

D. C. Baird, *Experimentation: An Introduction to Measurement Theory and Experiment Design*, (Prentice-Hall, Englewood Cliffs, NJ, 1962).

A nice general reference for laboratory experimentation with sections on measurements and error analysis, experiment planning and evaluation, and report writing. Available in the main library (QC39.B17).

R. H. Leaver and T. R. Thomas, *Analysis and Presentation of Experimental Results*, (John Wiley & Sons, New York, 1974).

A nice work encompassing both writing of a scientific report, analysis of data and statistical methods. Available in the main library (001.424L487).

Stuart L. Meyer, *Data Analysis for Scientists and Engineers*, (John Wiley & Sons, New York, 1975).

A concise treatment of scientific measurements and errors. An in depth treatment of data analysis using probability and statistics. Excellent bibliography. Available in the main library (519.2M575d).

Mike Pentz and Milo Shott, *Handling Experimental Data*, (Open Univ. Press, Philadelphia, 1988).

A good treatment of how to handle and present experimental data. A good expose\_ on graphical analysis and preparing graphs. Little on statistics or experimental design.

Also see other books in the main library listed under call numbers QC39 and 519.

### Probability and Statistics

John R. Taylor, *An Introduction to Error Analysis*, 2<sup>nd</sup> ed.(University Science Books, Mill Valley, CA, 1997).

An in-depth explanation of error analysis, statistics and experimental design. Has many practical and illuminating examples.

Hugh D. Young, *Statistical Treatment of Experimental Data*, (McGraw-Hill, New York, 1962).

Another good reference for error analysis and probability and statistics. The treatment is somewhat more rigorous and limited in scope than Taylor. On reserve in the main library (QA276.Y67).

Lyman G. Parratt, *Probability and Experimental Errors in Science*, (John Wiley & Sons, New York, 1961).

A more advanced treatment of probability and statistics for error analysis. Available in the main library (519.2P247).

Lyman Ott, *An Introduction to Statistical Methods & Data Analysis*, 3rd Ed. (PWS-Kent Publishing Co., Boston, 1988).

A voluminous work applying statistics to a wide variety of fields. Lots of examples. Available in the book store (\$45.85, hardback) for use in STAT 501. Also available in the main library (QA276.077).

Also see other books in the main library listed under call numbers QA276 and 001.424.

### Electronics

A James Diffenderfer, *Principles of Electronic Instrumentation*, (W. B. Saunders Co., Philadelphia, 1972).

Standard text in electronic instrumentation. Available in the main library (621.38D563).

Paul Horowitz and Winfield Hill, *The Art of Electronics*, (Cambridge Univ. Press, Cambridge, 1980).

An excellent text in electronics for scientists. Covers the principles and basic design of passive and active electronics components, analog circuits, digital circuits, and interface circuits. Also has good reference tables. Available in library.

Howard V. Malmstadt, Christie G. Enke, Stanley R. Crouch and Gary Horlick, *Electronic Measurements for Scientists*, (W. A. Benjamin, Menlo Park, CA, 1974).

Comprehensive treatment of electronics for lab. Does not include much about digital circuits.

F. H. Mitchell Jr. and F. H. Mitchell Sr., *Introduction to Electronic Design*, (Prentice Hall, Englewood Cliffs, NJ, 1988).

Engineering approach to circuit design. Available in the book store (\$54.50, hardback) for use in EE 346.

Also see other books in the main library listed under call numbers TK7860-70 and 621.7.

### Technical Writing

Joseph A. Alvarez, *The Elements of Technical Writing*, (Harcourt, Brace, Jovanovich, New York, 1980).

A collection of axioms for technical writing presented in a format reminiscent of *The Elements of Style*. Available in the main library (T11.A38).

Robert W. Bly and Gary Blake, *Technical Writing: Structure, Standards, and Style*, (McGraw-Hill, NY, 1982).

A succinct manual which covers all of the basic writing skills of technical writing. A nice companion to *The Elements of Style*.

Joseph Gibaldi and Walter S. Achtert, *MLA Handbook for Writers of Research Papers*, (The Modern Language Association of America, New York, 1988).

Standard references on written research papers. Available in the book store (\$9.45, paperback) for use in ENGL 600 and at the main library reference desk (REF LB2369.M5311984).

Diana Hacker, *Rules for Writers*, 2nd Ed., (St. Martin's Press, New York, 1988).

Good general reference for writing style and grammar. Available from the book store (\$16.45, paperback) for use in ENL 410.

David Hathwell and A. W. Kenneth Metzner, *Style Manual*, 3rd Ed., (American Institute of Physics, New York, 1978).

Standard physics reference which provides information on manuscript preparation and format as well as general information on preparing scientific papers. Canonical reference for bibliographic formats, 45th St, New York, NY 10017; \$7.50) by mail order. Also on reserve in the main library (QC28.A54 1978).

Gordon H. Mills, *Technical Writing*, (Holt, Rinehart, & Winston, New York, 1978).

A good reference on technical writing. Provides detailed discussions of the techniques and style required in standard types of communications, from letters to library research reports, encountered by engineers and scientists. Available in the main library (T11.M53 1978).

William Strunk, Jr. and E. B. White, *The Elements of Style*, 3rd Ed., (Macmillan Publishing Co., New York, 1979).

Classic little book is a concise and useful treatise on style and grammar for written English. You should read this book sometime in your college career and keep it for later reference! Available at the bookstore (\$3.50, paperback) and at the main library (PE1408.S772 1979).

Frank O'Hare, *The Modern Writer's Handbook*, 2nd Ed., (Macmillan, New York, 1989).

A concise, well written handbook of English grammar, punctuation, and style. A recommended reference book. Available in the book store (\$20.00, paperback).

Also see other books in the main library listed under call numbers T11 and 808.066.