

PROFESSIONAL ASPECTS OF SCIENCE - BIO 520

Fall 2002 Syllabus

Instructor:

Dr. William I. Lutterschmidt
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Lee Drain Building, Room 114A
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Lecture: Lee Drain Building (Room 144)
(Time: Tuesday 1800 - 2000 h)

Office Hours: Office hours are posted on my office door. Students are also welcome to schedule an appointment to see the instructor.

Textbooks: Ambrose, H.W., III and K.P. Ambrose. 1981. A handbook of biological investigation. Hunter Textbook, Inc.
CBE Style Manual Committee. CBE style manual: a guide for authors, editors, and publishers in the biological sciences. 6th edition revised and expanded. Council of Biology Editors, Inc.; 1994. Cambridge Univ. Press.
Janovy, J. Jr. 1985. On becoming a biologist. Harper and Row Pub., New York.
Jeffrey, A.L. 2000. The scientific endeavor: a primer on scientific principles and practice. Addison Wesley Longman, Inc., New York.
Pechenik, J.A. 2001. A short guide to writing about biology. Addison-Wesley Educational Pub. Inc., New York.

COURSE DESCRIPTION

Students entering a collegiate program to begin their training on becoming a professional scientist require an introduction to the professional and ethical aspects of science. This course is designed to help students become aware of their social responsibilities to institutions, governments, and the general public as scientists. All aspects of professionalism and ethics will be addressed and discussed in regard to research and the process of publication. Other topics will include literature retrieval and bibliographical procedures, research proposals and granting, professional job placement, scientific illustration, and oral presentation in science.

This course is important because: 1) many students entering a Master of Science program have no former experiences or knowledge of scientific professionalism and 2) institutions are now held responsible and accountable for the individual and unethical acts of their scientists regardless of intent. For these reasons Professional Aspects of Science is required by all incoming master students in the Department of Biological Sciences during their first Fall Semester after admittance and acquiring full graduate standing. If a student cannot register for this course due to particular responsibilities of their research program, they will be required to complete **BIO 520** prior to any general or qualifying examinations instated by the Department of Biological Sciences or, in the absence of general or qualifying examinations, prior to the defense of the Master Thesis.

Prerequisite: Admittance and full graduate standing in the Graduate College, College of Arts and Sciences, and the Department of Biological Sciences as outlined in the Sam Houston State

University Graduate Catalogue.

CLASS DISCUSSION

Class discussion is absolutely essential for success in this course. Many of the topics discussed in this course will be philosophical and controversial and should elicit a variety of valid opinions. The statements and opinions of the instructor regarding controversial issues should not discourage you from making your own dissenting or other viewpoints.

ASSIGNMENTS

All assignments must be completed and received by their due date for acceptance and consideration for grading.

Research Grant Proposals: Details of the research grant proposals will be discussed in class. A research grant proposal will be written in the format outlined by the current proposal instructions of NSF (National Science Foundation), NIH (National Institute of Health), or by an appropriate granting agency to be approved by the instructor. This exercise is to be used by students to formally prepare a proposal of support for their M.S. thesis. Two copies of the research proposal must be submitted to the instructor no later than the posted due date. One copy of the proposal will be submitted for external peer review by an appropriate faculty members or senior colleague. Reviewers will remain anonymous and are asked to review these proposals as if they were submitted for actual consideration of funding. Thus, you can expect critical and thorough reviews which should prove helpful in your pursuit of future funding.

EXERCISES AND GRADING

Student <i>Curriculum vitae</i>	20 pts.
Participation and Discussion of the book: <i>On Becoming a Biologist</i>	20 pts.
Participation and Discussion of the book: <i>The Scientific Endeavor</i>	20 pts.
Bibliographic and Literature Retrieval Exercise	20 pts.
Manuscript Editing Assignment	20 pts.
Title and Outline of Student Oral Presentation	10 pts.
Graphing Assignment	30 pts.
Manuscript Submission Letter	10 pts.
Research Grant Proposal	100 pts.
Oral Presentations of Student Research	50 pts.
Critical Review	30 pts.
Student Summaries of Case Studies	20 pts.
Overall Class Discussion and Participation	50 pts.
Total Course Point Value	400 pts.

Grades in this course will be determined by use of a ten point grading scale in which a 90-100% = "A", 80-89% = "B", 70-79% = "C", 60-69% = "D", and 0-59% = "F".

ACADEMIC DISHONESTY

Regulations and responsibilities stated in the *Student Code* and *Faculty Handbook* will be

followed in the event of academic dishonesty.

WITHDRAWAL POLICY

If grades of W(P), W(F), or I, are requested, University policy *will be* followed.

STUDENTS WITH DISABILITIES

Students who have disabilities that may prevent them from fully demonstrating their abilities should contact the instructor as soon as possible to discuss the accommodations necessary to facilitate full participation and to ensure each student's educational opportunity.

NOTE: This syllabus is subject to change at the discretion of the instructor.

Syllabus

Week	Date	Topic
1	9-3	Introduction to Professional Aspects of Science Choosing the Appropriate Graduate Program and Major Professor The <i>Curriculum Vitae</i>
2	9-10	Discussion of <i>On Becoming a Biologist</i> by John Janovy, Jr. Introduction to Editorial Notation in Editing Manuscripts *Completing the Reading of <i>On Becoming a Biologist</i> *Student <i>Curriculum Vitae</i>
3	9-17	Literature Retrieval and Bibliographic Procedures Introduction of Bibliographic Software Packages *Manuscript Editing Assignment
4	9-24	Societies and Organizations: Their Services and Purposes Reviewing Manuscripts as a Professional Responsibility in Science Illustration and the Graphical Representation of Data Introduction to Graphing Software Packages *Bibliographic and Literature Retrieval Exercise
5	10-1	Introduction to National Science Foundation (NSF) Discussion of the Student Research Proposal *Due Date for Graphing Assignment
6	10-8	What is Science and the responsibilities of the Scientist? *Critical Review of a Manuscript
7	10-15	Job Placement and the <i>Curriculum vitae</i> What makes one marketable for what job? Types of Universities: Which is a good marriage for who?
8	10-22	Manuscript Submission Letter The Publication Process *Due Date for the Title of Student Oral Presentation
9	10-29	AFWA Meeting (TBA) *Manuscript Submission Letter
10	11-5	University Organization and Governance Promotion, Tenure, and Salary
11	11-12	Oral and Slide Presentations at the Society Meetings Introduction to Case Studies of Fraud and Unethical Practices in Science
12	11-19	Social Responsibilities in Science *Summaries of Case Studies (Fraud and Unethical Practices in Science) *Student Research Grant Proposal
13	11-26	Professional Ethics in Science Ethics in Animal Care and Use in Science
14	11-3	Course Synopsis *Oral Presentations of Student Research

*** Indicates dues dates for assignments**