

PROFESSIONAL ETHICS FOR SCIENTISTS; Chem 301.101

Spring 2021

INSTRUCTOR: Rodney A. Dixon, M.Sc. E-MAIL: rdixon@towson.edu

OFFICE: SMITH HALL; ROOM 512 PHONE: 410-704-3053

OFFICE HOURS: BY APPOINTMENT ONLY

CLASS TIME: Tuesday, 6:30 P.M. TO 9:20 P.M.

CATALOG DESCRIPTION: Integrity of scientific literature and the responsibilities of scientists to associates and the public. Discussion of principles and case studies emphasizing the physical sciences. Does not count toward Chemistry major or minor. Prerequisites: three courses in ASTR, BIOL, CHEM, ENVS, GEOL, PHYS, or PHSC and at least two courses with laboratory; ENGL 102.

Core Curriculum Category 9: Advanced Writing

GRADING:

Papers (at least 5)	65%
Mid-semester Essay Exam	10%
Grammar Test (Semester's End)	5%
Final Exam (essay)	20%

Papers will be evaluated for style, format, use of cited information, logic, clarity, and grammar.

These parameters are consistent with the learning goals for Advanced Writing Courses.

Scores or deductions for each category will be reported to you via "Grade Cente" in Blackboard.

GRADING SCALE FOR COURSE GRADE:

93-100 A	76-78 C+
89-92 A-	70-75 C
86-88 B+	65-69 D+
80-85 B	60-64 D
79 B-	Below 60 F

MAKE UP WORK: NO MAKE UP WORK WILL BE GIVEN EXCEPT FOR VERIFIABLE DOCUMENTED EMERGENCIES (MEDICAL, LEGAL ETC.).

CHEATING: A score of zero will be given for the relevant work. Refer to the Towson Catalog for additional details.

OTHER POLICIES: All classroom conduct and performance should be compatible with the code of ethics stated in the current Towson Catalog. Students with documented disabilities who need course adaptations or accommodations should make an appointment to discuss their needs with the professor as soon as possible.

Chemistry Department Statement on Classroom Diversity and Inclusion

The students, faculty, and staff at Towson University represent a diverse and vibrant community of learners and scholars. As a community, we value the unique contributions of each individual and promote active participation in all aspects of the learning process by each community member. Your instructor supports Towson University's goal of fostering a diverse and inclusive educational setting. Your instructor strives to create a classroom environment built upon the principles of mutual respect and support. Toward this end, all members participating in this course are expected to demonstrate respect for all other members of the class. If you feel these expectations have not been met, please speak with your instructor or the designated diversity liaison, Dr. Katherine Kautzman.

For further information regarding the diversity and inclusion policies of Towson University, please see [Towson University's "Strategy 1:Exposure to Diversity"](#) , [the Fisher College of Science and Mathematics Diversity Action Plan](#), and the [Chemistry Department Diversity Action Plan](#).

REQUIRED TEXT:

For Writing

"Little, Brown Handbook", by H. Ramsey Fowler and Jane E. Aaron(12th Ed.),

ISBN-13: 978-0-205-21307-8 **{On Reserve In Cook Library}**

OTHER WRITING RESOURCES:

1.Towson University Online Writing Support Site at:

<http://www.towson.edu/ows>

2. Towson's Writing Lab at: <https://www.towson.edu/cla/centers/writing/> for "Sit Down Help"

3.The Text used for Your Basic Writing Course

ASSIGNMENTS AND ANNOUNCEMENTS WILL BE POSTED ON BLACKBOARD

TENTATIVE

COURSE SCHEDULE

WEEK 1

Grammar Evaluation

Plagiarism and Citations

Philosophy of Science

Assign First Two Papers

WEEK 2

Philosophy of Science

Discussion of Professional Ethics

First Paper Due

WEEK 3

Professional Ethics Case Studies - Falsification and Plagiarism

Second Paper Due

Assign 3rd Paper

WEEK 4

Professional Ethics Case Studies - Falsification and Plagiarism

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WEEK 5

Professional Ethics Case Studies

3rd Paper's Rough Draft Due at Week's End

WEEK 6

Professional Ethics Case Studies

WEEK 7

Professional Ethics Case Studies

Third Paper Due at Class Time

WEEK 8

Professional Ethics Case Studies – Intellectual Property

Assign Fourth Paper

Mid-semester Essay Exam

WEEK 9

Professional Ethics Case Studies – Intellectual Property

4th Paper Due at Class Time

WEEK 10

Professional Ethics Case Studies – Scientists' Social Responsibility

Assign 5th Paper

WEEK 11

Professional Ethics Case Studies – Scientists' Social Responsibility

5th Paper Due at Class Time

WEEK 12

Professional Ethics Case Studies – Scientists' Social Responsibility

Assign 6th Paper

WEEK 13

Professional Ethics Case Studies – Scientists' Social Responsibility

WEEK 14

Grammar Evaluation

6th Paper Due at Class Time

EXAM WEEK

Essay Final Exam (Tuesday, May 18 at 7:30 P.M.)

TOPICS (Tentative):

Ethics, Morals, and Ethical Theory

Professionalism and Ethics in Chemistry

Ethical Problem Solving

Codes of Ethics

Conflicts of Interest in Science

The Scientific Journals

Public Interest Science

Whistle Blowing

Forging Data

Problems In Forensic Science Labs

Intellectual Property

Are Scientists Fallible?

The Science and Religion Discussion

Case Studies

LEARNING OUTCOMES

1. Students will display competency in essential skills required of a college graduate by:

- a. Writing clearly and persuasively for a variety of purposes and for different audiences, revising and improving such texts.
- b. Making articulate, persuasive, and influential presentations.
- c. Reading, interpreting, analyzing and evaluating written discourse.
- f. Integrating ideas and concepts in order to make judgments based on evidence.
- g. Researching a topic, develop an argument and organize supporting details.
- h. Using software as appropriate for writing, for spreadsheets, for statistical analysis, for calculations, or for presentations.

2. Students will explore and integrate knowledge in order to understand how various disciplines interrelate by.

- a. Identifying some of the fundamental similarities and differences among various fields of study.
- b. Recognizing the complexity and multiplicity of methods and standards of inquiry as well as the diversity of opinion among informed inquirers within and among different fields of study.

3. Students will use inquiry and critical judgment to make decisions by:

- a. Reflecting and evaluating claims and evidence (rather than merely reporting information).
- b. Thinking in complex terms that move beyond an either/or binary approach.

4. Students will identify, interpret, evaluate, and integrate human values by:

- a. Demonstrating an understanding and application of human values (e.g., moral, ethical, aesthetic).
- b. Demonstrating an understanding of competing human values as evidenced by cultural, socio-economic or other differences.
- c. Demonstrating an understanding of the complexity and multiplicity of methods of inquiry and diversity of opinion among different disciplines.

COURSE GOALS (Core Curriculum Category 9)

Students will be able to:

1. Recognize and employ models and practices of written communication specific to a particular discipline or profession.
2. Recognize and employ techniques of formatting and documentation appropriate to a particular discipline or profession.
3. Integrate material effectively from outside sources into their own prose.
4. Analyze and evaluate complex discipline-based claims and current research questions.
5. Demonstrate a developed ability to compose clear, effective prose, including through the practice of revision.
6. Produce professional prose that follows accepted conventions of grammar, punctuation, and style.

This course fulfills Core Curriculum Requirement, “Advanced Writing Seminar” and is designed to prepare you to write in your chosen field. This course will help to

1. Write papers that are adequately sophisticated / nuanced / complex for upper-division work;
2. Follow an appropriate disciplinary format and write papers with a clear beginning, middle, and end, each part being proportionate to their purpose;
3. Support your main idea with correct, strong, and germane evidence;
4. Develop strong reasoning and analysis and avoid common fallacies of logic;
5. Write paragraphs, sentences, and clauses and phrases within sentences that are clear and logically related;
6. Use correct words, phrases, and disciplinary vocabulary that are emphatic when needed and avoid clichés;
7. Vary sentence lengths, leads, and syntax and use a tone and point of view that are conventional to the discipline;
8. Avoid sub-literate errors in grammar, punctuation, mechanics, and spelling; and
9. Provide documentation that is standard to the discipline.

[Not writing for an academic syllabus, Mark Twain said it better:

“The author shall

1. Say what he is proposing to say, not merely come near it
2. Use the right word, not its second cousin
3. Eschew plumage
4. Not omit necessary details
5. Avoid slovenliness of form
6. Use correct grammar
7. Use a simple and straightforward style.”