

**CHEM 301-001 (4800): Professional Ethics for Scientists (Lecture) (3)**

**Meeting Times: MW 11:00 am-12:15 pm, SC 3333**

**Instructor: Kelly M. Elkins, Ph.D.**

**Office Hours: MW 9:30 am-11:00 am or by appt.**

**Office: SC 4301D, E-mail: [kmelkins@towson.edu](mailto:kmelkins@towson.edu) Tel: 410-704-6217 (office)**

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**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.

Not open to those who have successfully completed WRIT 335, CHEM 335 or IDNM 305. Does not count toward Chemistry major or minor. Requires grade of C or better to fulfill Core requirement.

Prerequisites: three courses in ASTR, BIOL, CHEM, ENVS, GEOL, PHYS, or PHSC and at least two courses with laboratory; ENGL 102 or ENGL 190 or equivalent.

Core: Advanced Writing Seminar.

**Required Text:** None.

Readings will be posted on Blackboard.

**Teaching Methods:**

This class will be presented in a lecture/discussion/interactive format. Power Point presentations, videos and other visual aids will be used during class. Case studies and response-activities will be employed. Reading and writing assignments and journal articles will be assigned.

**IMPORTANT:** Students who fail to appear for the first two class sessions, or the first session of evening classes, may forfeit their space in class. Instructors have the right to release these spaces to other students wishing to add the class to their schedules. Students who lose their spaces must officially withdraw from the course through Enrollment Services to avoid earning an FX grade for non-attendance.

***Important Dates:***

February 4: Change of Schedule period ends for full term (14 weeks).

Last day to drop a course with no grade posted to academic record.

April 8: Last day to withdraw from full term courses with a grade of W. Last day to change to pass/fail option or audit options.

***No class:***

March 16-23: Spring Break

**Attendance:** All classes are considered equally important and full attendance and participation is expected.

***Course repeat policy***

Students may not repeat a course more than once without prior permission of the Academic Standards Committee.

Semester Class Tentative Schedule by Week\*:

Perspective article

Date	Topic	Reading / Assignment / Quiz
Week 1 (Jan 27-31)	Introductions, Syllabus, Navigating BB files Introduction to Ethics slides -Professional Ethics vs. Morals -The importance of knowing the rules & Codes of Conduct -Philosophy of Science	Paper #1 About Me (strengths/weaknesses) Draft in class Due 1/29/25
Week 2 (Feb 3-7)	Advanced Grammar: Avoiding Mistakes and advanced editing Writing Skills, AI and Avoiding plagiarism -AI tools in MS Office and Grammarly vs. Generative AI	Grammar Quiz 2/5/25
Week 3 (Feb 10-14)	Writing and publication skills: The scientific paper, publisher guidelines, reporting data, statistics, avoiding plagiarism/citation rules, formatting, IP, copyright Figures, graphs and charts: Do's and don'ts of image manipulation and spotting image manipulation -Spider data case study -FFP infractions	Paper #2 Compare and contrast AI tools and plagiarism Draft in class Due 2/12/25
Week 4 (Feb 17-21)	IRB and research CITI courses online for human subjects research -Basic course for biomedical research -Intro to RCR	[AAFS Baltimore] Print completion certificates and submit to BB by 2/24/25
Week 5 (Feb 24-28)	Data sharing -NIH Data Management and Sharing Policy for SBER: Implications for Researchers and IRBs -Presentation of TU ethics class study Data use and permission -NIH All of Us	
Week 6 (Mar 3-7)	Ethics violations: <i>JFSE</i> article Case studies of ethical infractions: plagiarism, fabrication, falsification Dual use research Case studies of ethical infractions: dual use research, safety and health, theft	
Week 7 (Mar 10-14)	Advances in human DNA typing and ethical concerns Case studies of ethical infractions: human subjects Standards and Standards Organizations <i>No class: Spring Break March 16-23</i>	Paper #3 Due 3/12/25 What is the worst ethics violation?
Week 8 (Mar 24-28)	-ORI The Lab -“How to Fix a Drug Scandal”	[ACS]
Week 9 (Mar 31-Apr 4)	Forensic chemistry and SWGDRUG Case studies of ethical infractions: dry-labbing, standards, theft, evidence mishandling, credentials, peer review Ethics and standards and root cause analysis	Paper #4 Due 4/2/25 Define dual-use research, what dual-use research has been performed, and what should be allowed?
Week 10 (Apr 7-11)	NIJ Law 101: Law 101: Legal Guide for the Forensic Expert Ethical Violations Case studies of ethical infractions: conflict of interest, testimony	
Week 11	Case studies of ethical infractions: Data ownership, publication, intellectual property, communication	Paper #5 Due 4/17/24 Should data from

(Apr 14-18)	-Franklin Biologics Decision Making	commercial DNA databases be used to solve crimes? What restrictions should be placed?
Week 12 (Apr 21-25)	Social Justice in Chemistry Social responsibility of scientists: Mining of data, reidentification, synthesis of materials, ethical waste generation and disposal Ethics in Seized Drugs	Select topic for Paper #6
Week 13 (Apr 28-May 2)	Case studies of ethical infractions: Accreditation, regulation, respect, accountability, resource allocation Ethics Voicing our Values Role Playing / Decision Making	Outline Paper #6 in class
Week 14 (May 5-9)	Case studies Ethics Voicing our Values Role Playing /Decision Making	Paper #6 Due 5/7/25 Technical review of case and social responsibility of scientists
Week 15 (May 12-20)	Last class May 12 & Final Exam Week <b>Final Exam May 14, 10:15 am -12:15 pm</b>	ORI The Lab paper Due 5/12/25

***\*Instructor may add additional topics or make schedule changes.***

**Testing and Grading:** No makeup quizzes or exams or final exam will be given, unless in special emergency as defined by the university. There will be no extra-credit opportunity. All requests for regrading must be received within a week (7 calendar days) of receiving the grade on the assignment. No requests for regrading of assignments will be granted following the submission of final grades at the conclusion of the semester. If a math error is suspected in computing the total points, a points recompilation will be processed.

**Grade Points (1000 points total):**

Grammar Quiz (50 points)

CITI training (25 points)

ORI The Lab choices and reflection (25 points)

Franklin Biologics choices and reflection (25 points)

Paper #1 (300-500 words) (25 points)

Paper #2 (500-800 words) (75 points)

Paper #3 (500-800 words) (100 points)

Paper #4 (800-1000 words) (125 points)

Paper #5 (1000-1500 words) (150 points)

Paper #6 (2000-2500 words) (200 points)

Final Exam (200 points)

- Papers will be evaluated for professional prose, format, use of cited information, logic, clarity, accepted conventions of grammar, spelling, punctuation, word choice, and style, flow, connections, and correctly citing sources using a consistent standard format (APA, MLA, ACS accepted but JFS preferred). These parameters are consistent with the learning goals for Advanced Writing Courses. Each infraction is a one point deduction.
- Failure to cite sources may lead to failure of the assignment or course in accordance with the TU Plagiarism policy.
- Missing thesis statements, arguments, content, supporting information or sources (as directed), and/or inadequate word count will result in a 5% penalty per infraction.
- Each incorrect item will be marked and the scores and deductions be indicated on your graded assignment.
- Assignments will be graded on Blackboard.

- Late assignments will be penalized 10% per each portion of a 24-hour period after the deadline.

**Grading Scale (Percent):**

A	93-100	C+	77-79.9
A-	90-92.9	C	70-76.9
B+	87-89.9	D+	67-69.9
B	83-86.9	D	60-66.9
B-	80-82.9	F	Below 60

***Cell Phones and Pagers***

Cell phone usage in the class meeting/lab is strictly prohibited. If you need to take a call in case of emergency (e.g., sick child, parent care, etc.), exit the classroom to the adjacent hallway.

***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 an educational 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, both within and outside of the classroom. If you feel these expectations have not been met, please speak with your instructor or the designated diversity liaison, Dr. Cindy Zeller (czeller@towson.edu).

For further information regarding the diversity and inclusion policies of Towson University, please see Towson University's Office of Inclusion and Institutional Equity, the Fisher College of Science and Mathematics Diversity Action Plan, and the Chemistry Department Diversity Action Plan.

***Accessibility & Disability Services***

This course is in compliance with Towson University policies for students with disabilities. Students with disabilities are encouraged to register with Accessibility & Disability Services (ADS), first floor of the University Union, Suite 146, 410-704-2638 (Voice) or 410-704-4423 (TDD). Students who suspect that they have a disability but do not have documentation are encouraged to contact ADS for advice on how to obtain appropriate evaluation. A memo from ADS authorizing your accommodation is needed before any accommodation can be made. <https://www.towson.edu/accessibility-disability-services/>

***ChatGPT, Open AI and Internet Resources***

As we begin the semester, I want to remind you of the importance of academic integrity. Part of what you learn here at Towson University is how to do your work authentically and honorably, and I am here to help you do that. In my course, you will be given assignments and I will provide you with specific instructions about how to complete them. Sometimes the instructions will tell you to do the work entirely on your own without consulting other people or material, including the internet. At other times, you may be asked to work together or to use certain technology tools. If you are ever uncertain about how you should work on an assignment, please contact me.

***Student Academic Integrity Policy (TU 03.01.00)***

The Towson University Code of Conduct prohibits "all forms of dishonesty including cheating (and plagiarism)." Plagiarism is copying the words of another or the use of ideas of another without proper

citation. Plagiarism can result from copying an entire document to inappropriate paraphrasing. In order to avoid plagiarism, the use of words or ideas of another without proper citation, it is imperative to consciously think about what you have read and what you are trying to write. In scientific literature, we do not normally use direct quotes from the primary resources that we are using to gather our information. It is important to paraphrase the ideas and conclusions obtained from the primary literature and rewrite them in your own words. One method to assure that you will not plagiarize is to take notes on each of your primary resources and then write the paper based on your notes, not from the references. Your paper will summarize the works of others, not directly quote from them. If you have any questions about plagiarism and correct citations see <http://cooklibrary.towson.edu/help-guides/tags/plagiarism> for further examples and methods to correct the problems. The consequences of cheating or plagiarism will be a failing grade of 0 points for the assignment and may result in failure of the course. Plagiarism, fabrication, falsification, cheating, complicity in academic dishonesty, abuse of academic materials, multiple submissions of the same work or part thereof for multiple courses/assignments, will not be tolerated and will result in a failing grade of 0 for that assignment and may result in failure of the course.

**All types of Academic Integrity Violations are deplorable and will be dealt with accordingly. Please read and familiarize yourself with the University Academic Integrity Policy, found at the link below. Plagiarism, obtaining aid from or giving aid to another student as well as obtaining aid through electronic devices or notes constitutes cheating and will result in failure of the course. Multiple submissions may violate the policy; consult the instructor with questions. <https://www.towson.edu/about/administration/policies/03-01-00-student-academic-integrity-policy.html>**

### ***Title IX Safe Learning Environment***

Towson University (TU) is committed to ensuring a safe, productive learning environment on our campus that does not tolerate sexual misconduct, including harassment, stalking, sexual assault, sexual exploitation, or intimate partner violence [Policy 06.01.60]. It is important for you to know that there are resources available if you or someone you know needs assistance. You may speak to a member of university administration, faculty, or staff, but keep in mind that they have an obligation to report the incident to the Title IX Coordinator. It is a goal that you feel able to share information related to your life experiences in classroom discussions and in one-on-one meetings. However, it is required to share information with the Title IX Coordinator regarding disclosures, but know that the information will be kept private to the greatest extent possible. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the TU Counseling Center 410-704-2512 to schedule an appointment, and locally within the community at TurnAround, Inc., 443-279-0379 (24-hour hotline) or 410-377-8111 to schedule an appointment. <http://towson.edu/titleix>

### ***Reporting Hate Crimes and Bias Incidents***

Towson University prohibits all students, staff, and faculty from committing or engaging in any hate crimes as defined under state and federal law, or any acts of bias, hate, or prejudice exhibited in conduct that is in violation of another University policy on campus, on University property, at University sponsored events, or when engaged in University activities and business on or off campus. The University must receive notice to respond effectively to alleged Hate Crimes or Bias Incidents in the University Community. Please report or file a complaint of a Hate Crime or Bias Incident in the following ways:

- Report to University Police: Towson University's Police Department ("TUPD") will determine if incidents are criminal in nature. In cases of hate crimes, individuals can be punished with fines and/or imprisonment. Felony offenses demonstrated to be motivated by bias are subject to enhanced penalties.
- Contact the Office of Inclusion & Institutional Equity: Online at: <https://towson.edu/notattu>, email at: [OIIIE@towson.edu](mailto:OIIIE@towson.edu), telephone, in person or via regular mail.

<https://www.towson.edu/about/administration/policies/06-01-20-policy-procedures-reporting-hate-crimes-bias-incidents.html>

***TU Counseling Center***

We all experience emotional distress and personal difficulties as a normal part of life. As your instructor, I am not qualified to serve as your counselor. However, The Towson University Counseling Center (TUCC) provides free and confidential mental health services that are not connected to your academic record in any way. If you are experiencing mental health challenges, I strongly encourage you to take advantage of TUCC's services. For more information about TUCC, please visit their website at <https://www.towson.edu/counseling>. To make a same day appointment or for after-hours crisis assistance, please call 410-704-2512.

***In Case of Emergency***

In the event of a University-wide emergency course requirements deadlines and grading schemes are subject to changes that may include alternative delivery methods, alternative methods of interaction with the instructor, class materials, and/or classmates, a revised attendance policy, and a revised semester calendar and/or grading scheme. In the case of a University-wide emergency, please refer to the following about changes in this course:

1. Web Site: [www.towson.edu](http://www.towson.edu)
2. Telephone Number(s)
3. TU Text Alert System: This is a service designed to alert the Towson University community via text messages to cell phones when situations arise on campus that affect the ability of the campus to function normally. Sign up: <https://www.towson.edu/publicsafety/notification/>

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