

CHEM 395: Internship in Chemistry

Spring 2026

Instructor

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Course Description

Students will be given credit in this cooperative education program for approved experience in chemistry or forensic chemistry in the private or public sector. A written report of their work will be submitted by students and evaluated by the Chemistry or Forensic Chemistry Faculty. May be repeated once for a maximum of 6 units. Graded S/U.

Prerequisites CHEM 220/L, CHEM 337, junior standing (>60 credits), department consent

Course Requirements

To receive credit for this course students must

1. complete a minimum of 120 hours of work
2. have their supervisor submit evaluation forms
3. successfully complete the course assignments

Schedule and Grading

Students will be evaluated based on the following assignments.

	Due Date	
Mid-term employer evaluation	3/13/36	20 points
Final employer evaluation	5/8/26	20 points
Interim meeting with TU internship coordinator	3/25/26	10 points
Final meeting with TU internship coordinator	5/12/26	10 points
<u>Final Paper (schedule for drafts below)</u>	<u>5/12/26</u>	<u>40 points</u>
Total		100 points

Final grades will be based on the following scale: 92-100% = A, 90-91% = A-, 88-89% = B+, 82-87% = B, 80-81% = B-, 78-79% = C+, 70-77% = C, 68-69% = D+, 60-67% = D; < 60% = F. This will be based on points earned out of 950 possible.

Course Communications

All course communication will occur through TU email and Blackboard.

Student Responsibilities

Student interns assume all responsibility for their actions while at the internship site. Students are expected to maintain professional standards regarding attendance and punctuality, communication and focus on job tasks. Students must follow all requirements at the intern site regarding quality assurance standards, safety and personal protective equipment, confidentiality and all other regulations and requirements communicated by personnel at the intern site. Any expenses including parking, transportation, etc. are the responsibility of the student intern.

Evaluation by the Intern Site Supervisor

It is your responsibility to give the evaluation forms to your internship supervisor and remind them when these should be completed and emailed to Towson (racasey@towson.edu). The interim evaluation should be completed when you have finished about 40 hours of work. The final evaluation should be sent at the end of the semester as you are completing your 120 (or more) hours. Specific due dates are listed in the schedule above.

Meetings with the TU Chemistry Internship Coordinator

Students must meet with the internship coordinator prior to approval of the internship. Students must be able to demonstrate sufficient chemistry content of the activities at the proposed internship for approval. The interim meeting should occur after the interim evaluation has been submitted by the internship supervisor; the final meeting should occur after the final evaluation has been submitted by the internship supervisor. Students may request meetings with the Chemistry internship coordinator at any time to discuss questions or issues that arise during the internship.

Academic Integrity

Academic dishonesty, e.g., plagiarism or cheating on an assignment, will result in failure of the course. Use of Artificial Intelligence ("AI"), especially Large Language Models such as ChatGPT, should be judicious and need to be documented. For more details see the next section. The material presented in the internship paper should be well documented or clearly that of the author. The most flagrant type of plagiarism is turning in someone else's work as one's own. But plagiarism also includes borrowing another author's ideas, as part of an argument you are developing in your written work, without documenting the source properly. Plagiarism will result in a failing grade for the course. The full description of University academic integrity policies dishonesty can be found [here](#). Please contact me if you have any questions regarding acceptable academic conduct in this course.

Statement on the Acceptable Use of Artificial Intelligence (AI) and Large Language Models (LLMs)

The goal of this course is to give you the opportunity to reflect on your internship and consider its relevance to your career and your development as a professional chemist. The writing assignments are how this reflection will be conducted, but you will only gain from the reflection if you put time and effort into writing and reflection.

- Please do document (and cite) your use of LLMs. I strongly recommend doing your own thinking for brainstorming and using established scientific databases like Scopus or Google Scholar for literature searches. LLMs may be useful for revising and "cleaning up" your writing.
- LLMs are improving but still regularly hallucinate on citations of scientific (peer-reviewed) papers (often inventing papers). The following paper was provided by ChatGPT as supporting evidence for a query about a research question. The paper does not exist. The journal is real, and some of the authors have similar publications, but this paper is 100% a hallucination.
 - González-González, R. B., Rodríguez, A. A., & Pérez, M. A. (2022). Occurrence of artificial sweeteners in surface waters: A case study in the metropolitan area of Monterrey, Mexico. *Environmental Science and Pollution Research*, 29(5), 7890–7902.
- If you use text or information from a LLM, cite it as you would any other source (example: "ChatGPT." 03/12/2025, <https://www.chatgpt.com/>). Information from ChatGPT does not constitute a primary or peer-reviewed source.
- Please also describe the ways in which you use LLMs, e.g., revising text, brainstorming, etc.
- Any text copied from LLMs should have at least been drafted by you.

These items were adapted from Robert Auburger, Towson University who obtained and edited information from OpenAI/ChatGPT.

Requirements for the Final Paper

1. Executive Summary. **Due March 2, 2026.** 5 pts.
 - a. 400 – 500 words. The executive summary should serve as an abstract for your final paper. In the executive summary, you will describe the organization in which you are interning and the specific goals of the group where you are working. You should also describe the applications of chemistry that occur at this job site. The executive summary should not be a list of your daily activities as an intern. This should be more of a “big picture” overview.
2. Literature Review. **Due March 13, 2026.** 10 pts.
 - a. Provide a bibliography of 5 peer-reviewed papers (or technical documents from government agencies) related to your internship work. Citations should be provided in a format consistent with a peer-reviewed journal.
 - b. For one of the papers in your bibliography, prepare a detailed analysis of the paper using the following format:
 - i. A brief summary of the scientific relevance, methods and significant results reported in the paper. Please do not restate the abstract. This should be in your own words. Approximately 300 – 400 words.
 - ii. At least 3 questions that you have about the paper. These could be things that are unclear in the writing, or they could be concepts and methods that you have not previously encountered.
 - iii. 3 criticisms about the paper (methods, interpretation, writing, presentation of data/graphs)
 - iv. 3 positive aspects of the paper (things that were done well)
3. Final paper. **First draft due April 29, 2026. Final paper due May 12, 2026.** 25 pts.
 - a. Total length should be 5 – 8 pages double-spaced (excluding figures and references) with standard margins and font.
 - b. The target audience should be a junior chemistry major who has a basic chemistry background, but is unlikely to know the specifics of the techniques you used in your internship.
 - c. Required elements for the paper
 - i. Executive summary (should be an edited version of what you previously submitted)
 - ii. An expanded description of the internship organization and goals, focusing on the broader context of their mission.
 - iii. An expanded description of the chemistry context, including details of instruments, techniques or applications of chemistry that were part of your internship experience.
 - iv. A reflection on how the internship related to your coursework. Specify how your courses supported your internship work and identify any gaps that you had to fill. Did your internship provide a preview of content in courses you have not yet taken but will take before graduation?
 - v. A reflection on your career goals, and how the internship informed your future goals. Break down the elements of the internship that you would and would not want to continue in future employment opportunities.
 - vi. A statement on the use of AI in your internship (if or how it was used) and in the preparation of this paper.
 - vii. References. This should include primary literature that provides context and support for the underlying science described in your paper, as well as references to websites or technical documents that support the broader context of your organization.