Writing Across the Curriculum (WAC)

Course for which you are seeking approval (department and number):

CHM 301 – Research Methods in Chemistry

CRITERIA

A course approved for the WAC requirement must meet all of the following criteria:

1. Assign writing throughout the semester.

2. Require students to write between 3,000 words and 5,000 words (approximately 10 to 20 pages) over the course of the semester.

3. Teach students writing-to-learn strategies that foster students' experiences in learning and writing-to-communicate strategies that foster students' respect of readers' experiences. Include planning assignments (e.g., reading logs, pre-writing strategies) and peer reviews whenever possible.[1]

4. Provide instruction in discipline-appropriate forms of texts, arguments, evidence, style, audience, and citation.

5. Engage students in writing as a process and provide opportunities for students to improve their writing over the course of the semester. This can take different forms including scaffolded assignments, drafts and revisions, and multiple iterations of the same type of assignment (such as a lab report).

6. Provide students with extensive feedback on their writing and expect students to use that feedback to improve their writing in subsequent assignments. This feedback should not consist entirely of mechanical correction of punctuation and grammar. Doing so should be part of the assessment (grading) of the assignments.

7. Teach information literacy in a discipline appropriate context. This includes instruction and assignments that support student development in accessing and evaluating discipline-appropriate research materials and integrating them into their own work. Instructors are encouraged to collaborate with librarians on this aspect of their courses and to consult the Association of College & Research Libraries' Framework for Information Literacy in Higher Education.

8. Assign writing in English except for 300 and 400-level courses that are specifically geared at improving writing in another language.

---

[1] Writing-to-learn helps students use writing to explore many aspects of the course as well as their own reflections; these activities should foster learning at deeper levels than memorization or recitation. Writing-to-communicate emphasizes aspects of writing (style, coherence, focus, grammatical correctness) that allow a reader to navigate the writing as they wish.

Additional criteria

9. In order to receive a C or better in the course, students must write at a satisfactory skill level (C or better). If the student's writing is weak, but shows understanding of the course material, the student may be assigned a D, in which case WAC credit will not be received for the course.

10. Maximum enrollment for this course is 35 or 45 with a graduate assistant.

DIRECTIONS

1) Copy and paste the criteria given above into your syllabus. Include that syllabus with your proposal in Curriculog.

2) In this document, explain how the course meets the criteria by answering the questions below. Include enough detail for the committees to be able to understand how your course meets the criteria. Feel free to copy and paste information over from your syllabus into this document to answer the questions. Include this document in your Curriculog proposal.

---

1. Complete the following table indicating (a) what writing assignments are included in the course, (b) when they are scheduled in the semester, (c) their approximate word-count, and (d) their assignment type. You may add additional rows as necessary, and group identical assignments.

Writing Assignment	Scheduled Date(s)	Expected word count	Assignment type (Writing to learn, writing to communicate, planning, and/or peer review)
Portfolio	This is an ongoing project that is worked on in every class meeting but is submitted for assessment during Week 8 and Week 15	~2,000 words	Writing to Learn, Writing to Communicate, Planning, Peer Review
Digital CSU Project	Week 14	~1,000 words	Writing to Communicate
Research Paper (topic, annotated bibliography, draft, peer evaluation, and final draft)	Weeks 4, 7, 11, 13, and 15	~3,000 words	Writing to Learn, Writing to Communicate, Planning, Peer Review

2. Complete the following table indicating the types of discipline-specific writing instruction that is included in the course. The first column lists general types of writing objectives. If the course includes instruction on that objective, describe the instruction in the second column, indicate which assignment(s) develop and/or assess that objective in the third column, and indicate the date(s) of those assignments in the final column.

Writing Objective	Instructional Approach	Associated assignment(s)	Scheduled date(s)
Textual forms[2]	Instruction focuses on understanding and applying the specific formats and structural elements of proposal writing (with an emphasis on specific aims), writing for the general public (including social media platforms and digital projects), and writing review articles for scientific journals.	Portfolio, Digital CSU Project, Research Paper	Weeks 8, 10, 14, and 15
Argumentative strategies[3]	Instruction covers how to construct persuasive arguments to justify funding needs and anticipated outcomes and how to support claims using evidence from primary scientific literature.	Portfolio, Digital CSU Project, Research Paper	Weeks 8, 10, 14, and 15
Appropriate evidence[4]	Instruction on identifying and integrating types of evidence suitable for different types of writing, such as statistical data and data from primary scientific literature. Includes how to leverage evidence in support of argumentation.	Portfolio, Digital CSU Project, Research Paper	Weeks 8, 10, 14, and 15
Style[5]	Focus is on both formal style appropriate for journal articles and grant proposals as well as more informal styles characteristic of social media, newspapers and other writing forms designed for the general public. Instruction will also include discussions on the role of first and third person in scientific writing.	Portfolio, Digital CSU Project, Research Paper	Weeks 8, 10, 14, and 15

---

[2] The forms writing takes in the discipline. Instruction may include focus on purpose or structural elements.
[3] How positions are supported in the discipline and how that structures the writing.
[4] The types of reasons or evidence appropriate to the field and/or styles of arguments used in the discipline.
[5] Formality, writing perspective (first/third person), and tone.

Audience[6]	Instruction will emphasize the importance of considering the audience, challenging students to focus their writing for a variety of audiences: fellow scientists, educated peers, and the general public	Portfolio, Digital CSU Project, Research Paper	Weeks 8, 10, 14, and 15
Citation[7]	Students will receive instruction on how to use the American Chemical Society's citation format as well as how to conduct literature searches. Students will also receive instruction on creative commons licensing and considerations of copyright when sharing work outside of the classroom.	Portfolio, Digital CSU Project, Research Paper	Weeks 3, 14, 15
Other			

3. What types of feedback will be provided on student work? How, specifically, will students be <u>required</u> to make use of the provided feedback to improve their work?

A peer evaluation of each student's research paper will occur in week 13. At this time, each student will receive feedback from 2 peers (evaluating the paper for clarity, content, and writing style) as well as from the instructor (focusing on use of citations, organization, and content). Feedback will be received through rubrics and written feedback. Students are required to incorporate this feedback in the final submission of their research paper.

Throughout the semester, students will collaborate with and provide feedback to their fellow students through in-class projects and discussions prior to submission of their portfolios for assessment. Students will also receive informal feedback on their work from their instructor during class time and be expected to incorporate that feedback as they continue working on their projects.

4. How, specifically, will the course teach information literacy? When does this instruction occur in the course and what assignment(s) are associated with the instruction?

Students will receive instruction on information literacy throughout the semester, most notably in week 3 when students learn how to conduct a literature search. Students will learn about the resources offered by the library, how to identify a primary research

---

[6] Tailoring communication to audiences, conducting audience analyses, etc.
[7] Methods of citation, reasons for citing, expectations regarding age of citations, etc.

article, and how to effectively cite sources using ACS format and manage their sources using EndNote. Students will explore how to develop an effective research question and write specific aims in weeks 4 and 7 – with an emphasis on supporting claims with evidence from the primary scientific literature. Students will dive deeper into this literature, analyzing the key results and offering a critique of research studies in their annotated bibliography (week 7). Students will gain a deeper understanding of statistics analyses during Week 9 so they can more effectively evaluate the statistical analyses used in scientific literature and validity of the studies. Students will culminate their learning on information literacy in both their Digital CSU project as well as their research paper (weeks 14 and 15).

5. If the course writing is not in English, please describe how writing in another language will be used to improve communication skills in that language.