

# **BIOL 5312**

## **Graduate Scientific Writing and Communication**

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\*Additional times or virtual meetings available upon request. [Office Zoom Link](#)

### **Time and Place of Class Meetings:**

BIOL 5312 lectures will take place on Wednesdays from 5:30-8:15pm in SciTech room 179.

### **Course Description and Prerequisites:**

This course provides graduate students with guidance on and application of written and verbal communication skills in reading, analyzing, writing, and sharing scientific information in the Biological Sciences.

**Prerequisite:** Graduate status.

### **Course objectives are to:**

- Enhance written and oral communication skills
- Develop and deepen disciplinary knowledge related to the student research project
- Prepare and present scientific information in diverse professional formats
- Prepare research proposal and/or thesis towards fulfilling the requirements of the MS in Biology degree

### **Course Resources:**

- Activities provided in Blackboard
- Recommended (3<sup>rd</sup> or 4<sup>th</sup>): *Successful Scientific Writing. A Step-By-Step Guide for the Biological and Medical Sciences*. SBN-13: 978-1107691933, ISBN-10: 1107691931 (4<sup>th</sup> edition; Matthews JR & Matthews RW; Cambridge University Press, 2014)

### **Blackboard Ultra:**

This class uses the learning management system Blackboard Ultra to administer content and evaluate understanding. I will post links to videos, notes, reading materials, digital supplements, and administer essay exams from this learning platform.

## Course Expectations:

Students are expected to maintain personal and academic integrity, remain open to new ideas, and foster an academic community that promotes mutual intellectual and social growth. While the faculty and staff at TAMUSA are dedicated to supporting student success, students must take primary responsibility for their intellectual growth.

## Active Participation:

Active participation is required, as the success of our mutual learning depends on consistent preparation and engagement. To support diverse learning styles, this course employs various strategies, including discussion, reflection, collaboration, and presentation. I encourage you to contribute thoughtful questions, listen intently to your peers, and respond respectfully.

## Attendance:

Attendance is mandatory for this course, as the core of our learning is built upon active participation in classroom discussions and hands-on activities. However, I recognize that you have other professional, academic, and personal responsibilities that may occasionally result in unavoidable conflicts. If circumstances prevent you from attending a session, please notify me via email before the class begins.

## Grading:

### *Grade Scale and Points Distribution*

**A = >90.0    B = 80.0 – 89.9    C = 70.0 – 79.9    D = 60.0 – 69.9    F = <59.9**

Evaluation	Points
Abstract (Conference/Journal)	5
Introduction	5
Methods	5
(Preliminary) Results	5
Present Data Visually	5
Discussion	5
References	5
3M-Thesis	5
Poster Presentation	10
Graphical Abstract	5
Oral Presentation	10
Proposal/Thesis Initial Draft	10
Proposal/Thesis Final Draft	15
Participation / Reflections	10
<b>TOTAL</b>	<b>100</b>

## Assignments:

This course will be graded on a point system, with a total of 100 possible points.

- **Abstract.** Write an abstract about the scientific project following the format for submission to a professional conference or a target journal. We will use the following guidelines:
  - *Integrative Organismal Biology* journal (Society for Integrative and Comparative Biology). [https://academic.oup.com/iob/pages/General\\_Instructions](https://academic.oup.com/iob/pages/General_Instructions)
  - *A&M-SA Student Research Symposium*. <https://www.tamusa.edu/student-research-symposium/index.html>
- **Introduction.** Write the introduction section of the scientific project that may include but is not limited to: significance of topic, known background information, gaps in the literature, and the purpose of their project.
- **Methods.** Write a methods section to investigate the chosen scientific project that may include but is not limited to: participants, Research compliance (e.g., Institutional Animal Care and Use Committee (IACUC), Institutional Biosafety Committee) approval details, experimental procedures, instrumentation, statistical analyses, etc.
- **(Preliminary) Results.** Write a preliminary draft of the results of the chosen scientific project. Mock data may be used if real data are unavailable.
- **Presenting Data Visually.** Present results using at least 1 table and at least 1 figure (e.g., graph, chart) to describe the results of the chosen scientific project. Mock data may be used if real data are unavailable.
- **Discussion.** Students will write a discussion and interpret findings of the chosen scientific project. Sections include but are not limited to: explanation of findings, comparing with previously published literature, limitations and future recommendations, practical and/or implications, and a conclusion section.
- **References.** Format a reference list for the scientific project according to APA format guidelines.
- **3-Minute Thesis.** Prepare a brief presentation following the guidelines of the 3-Minute Thesis Competition.
- **Poster Presentation.** Submit a formal PowerPoint poster presentation of the chosen scientific project.
- **Graphical Abstract.** Write a graphical abstract about the scientific project following: <https://www.elsevier.com/researcher/author/tools-and-resources/graphical-abstract>
- **Oral Presentation.** Present the chosen scientific project using a formal oral PowerPoint presentation.
- **Manuscript.** Write a full manuscript draft in a formal format for possible submission to a peer-reviewed journal of choice. Students will submit an initial full draft and a final full draft using the *Integrative Organismal Biology* journal [https://academic.oup.com/iob/pages/General\\_Instructions](https://academic.oup.com/iob/pages/General_Instructions)

## **Use of Generative AI Permitted Under Some Circumstances or With Explicit Permission**

There are situations and contexts within this course where you may be asked to use artificial intelligence (AI) tools to explore how they can be used. Outside of those circumstances, you should not use AI tools to generate content (text, video, audio, images) that will end up in any student work (assignments, activities, discussion responses, etc.) that is part of your evaluation in this course. Any student work submitted using AI tools should clearly indicate with attribution what work is the student's work and what part is generated by the AI. In such cases, no more than 25% of the student work should be generated by AI. If any part of this is confusing or uncertain, students should reach out to their instructor for clarification before submitting work for grading. Use of AI-generated content without the instructor's permission and/or proper attribution in this course qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.

**NOTE:** Guidance for how to cite AI-generators, like ChatGPT, can be found here <https://apastyle.apa.org/blog/how-to-cite-chatgpt>

## **Academic Calendar:**

*The complete academic calendar is available [here](#):*