

BIO 220B: SCIENTIFIC WRITING AND COMMUNICATION

In Workflow

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Approval Path

1. Mon, 12 Sep 2022 15:11:59 GMT
Jamie Kneitel (kneitel): Approved for BIO Committee Chair
2. Mon, 12 Sep 2022 15:18:01 GMT
Jamie Kneitel (kneitel): Approved for BIO Chair
3. Thu, 22 Sep 2022 03:05:45 GMT
Mikkel Jensen (mikkel.jensen): Approved for NSM College Committee Chair
4. Fri, 23 Sep 2022 00:06:21 GMT
Shannon Datwyler (datwyler): Approved for NSM Dean

New Course Proposal

Date Submitted: Tue, 06 Sep 2022 20:00:34 GMT

Viewing: BIO 220B : Scientific Writing and Communication

Last edit: Fri, 23 Sep 2022 20:00:25 GMT

Changes proposed by: Jim Baxter (102010257)

Contact(s):

Name (First Last)	Email	Phone 999-999-9999
Drew Reams	andrew.reams@csus.edu	916-278-7678

Catalog Title:

Scientific Writing and Communication

Class Schedule Title:

Sci Writing and Communication

Academic Group: (College)

NSM - Natural Sciences & Mathematics

Academic Organization: (Department)

Biological Sciences

Will this course be offered through the College of Continuing Education (CCE)?

No

Catalog Year Effective:

Fall 2023 (2023/2024 Catalog)

Subject Area: (prefix)

BIO - Biological Sciences

Catalog Number: (course number)

220B

Course ID: (For administrative use only.)

TBD

Units:

3.0

Is the primary purpose of this change to update the term typically offered or the enforcement of prerequisites at registration?

No

In what term(s) will this course typically be offered?

Spring term only

Does this course require a room for its final exam?

Yes, final exam requires a room

This course complies with the credit hour policy:

Yes

Justification for course proposal:

The Department seeks to create this new graduate level writing intensive (GWI) course to develop scientific writing skills and better serve our graduate students by reducing time to degree. The Department unanimously agree that our graduate students need to improve their scientific writing skills for successful completion of their required thesis or project proposal and their written thesis or project. Development of strong scientific writing skills is also essential for their overall science communication abilities.

Currently, we offer one graduate GWI course, called BIO 220. It is a 2-unit course that is typically taken during a student's first semester in graduate school. It covers a range topics in addition to writing, including scientific inquiry, data analysis, and oral presentation skills. Faculty who have taught this course believe that there is too much material to cover and not enough time to cover it, plus meet GWI requirements. This opinion is also shared by students who have taken the course and who consistently report that the workload and diversity of topics is far too much for a single 2-unit class.

The department seeks to address this challenge by replacing BIO 220 with two new sequenced courses: BIO 220A and BIO 220B, each 3 units. BIO 220A focuses on understanding the process of scientific inquiry in the biological sciences (scientific method, critical evaluation of scientific literature, and initiation of their thesis project). BIO 220B focuses on developing scientific writing skills, including how to synthesize scientific literature to support a cohesive, organized, well-reasoned argument, with a culminating product of a draft thesis or project proposal.

By having a separate sequenced course focused on the development of specific writing skills and increasing the course units, BIO 220B will train students to more critically analyze the content and structure of scientific papers.

At the beginning of the semester, assignments will focus on reading and critically analyzing the scientific literature needed to develop their own thesis or project proposal. By reading more, they will become more critical thinkers and proficient writers. In addition, students will complete at least seven sequenced writing assignments, each aimed at a separate section of their thesis or project proposal (introduction, specific aims, methods, etc.).

Students will learn proper scientific tone, voice, practice how to effectively structure their writing, and self-edit. By the end of the course, students will have a formalized proposal in proper format required for their advancement to candidacy, at which the student presents their proposed thesis or project. We anticipate that this course will substantially facilitate the MS/MA advancement process and ultimately reduce the time to degree.

BIO 220B also will reduce the workload of graduate faculty advisor of students enrolled in BIO 220B. Our formal writing assignments will include peer reviews between students and require students to revise their work based on student and instructor feedback. This should ultimately reduce the number of proposal edits required from the student's graduate advisor. Assignment deadlines will get students into the habit of writing and force students to meet due dates. Moreover, graduate students will learn to think and write more like a scientist.

Course Description: (Not to exceed 80 words and language should conform to catalog copy.)

Graduate level written and oral scientific presentation skills aimed at preparing students for the creation and delivery of their thesis/project proposal in the Biological Sciences. Topics include proper structure, organization, and tone in scientific writing, writing concisely, effective peer review and self-editing, and communicating complex scientific information in different forms. Lecture three hours.

Are one or more field trips required with this course?

No

Fee Course?

No

Is this course designated as Service Learning?

No

Is this course designated as Curricular Community Engaged Learning?

No

Does this course require safety training?

No

Does this course require personal protective equipment (PPE)?

No

Does this course have prerequisites?

Yes

Prerequisite:

BIO 220A or instructor permission

Prerequisites Enforced at Registration?

No

Does this course have corequisites?

No

Graded:

Letter

Approval required for enrollment?

No Approval Required

Course Component(s) and Classification(s):

Lecture

Lecture Classification

CS#05 - Seminar (K-factor=1 WTU per unit)

Lecture Units

3

Is this a paired course?

No

Is this course crosslisted?

No

Can this course be repeated for credit?

No

Can the course be taken for credit more than once during the same term?

No

Description of the Expected Learning Outcomes and Assessment Strategies:

List the Expected Learning Outcomes and their accompanying Assessment Strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers). Click the plus sign to add a new row.

	Expected Learning Outcome	Assessment Strategies
1	Implement the major research and/or professional conventions, practices, and methods of inquiry of the discipline	Identify knowledge gaps, Thesis outline and peer review, Protocol manual, First draft thesis proposal peer review, Participation & other exercises
2	Explain the major formats, genres, and styles of writing used in the discipline	Protocol manual, First draft thesis proposal peer review, Participation & other exercises

3	Practice reading and writing within the discipline	Identify knowledge gaps, Introduction draft and peer review, Methods draft and peer review, Timeline draft and peer review, Abstract draft and peer review, First draft thesis proposal, First draft thesis proposal peer review, Final thesis proposal, Participation & other exercises
4	Practice reading and writing as a learning process that involves peer and instructor feedback, revision, critical reflection, and self-editing	Thesis outline and peer review, Introduction draft and peer review, Methods draft and peer review, Timeline draft and peer review, Abstract draft and peer review, First draft thesis proposal, First draft thesis proposal peer review, Final thesis proposal, Participation & other exercises
5	Create, critique, and defend experimental approaches to scientific problems in oral and written form	Identify knowledge gaps, Thesis outline and peer review, Methods draft and peer review, First draft thesis proposal, Final thesis proposal, Participation & other exercises

Attach a list of the required/recommended course readings and activities:

BIO220B Syllabus - Final version 5-2-22.docx

For whom is this course being developed?

Majors in the Dept

Is this course required in a degree program (major, minor, graduate degree, certificate?)

Yes

Has a corresponding Program Change been submitted to Workflow?

Yes

Identify the program(s) in which this course is required:

Programs:

MS in Biological Sciences

MA in Biological Sciences

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?

No

Will there be any departments affected by this proposed course?

No

I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.

I/we agree

University Learning Goals

Graduate (Masters) Learning Goals:

Critical thinking/analysis
Communication
Information literacy
Disciplinary knowledge
Intercultural/Global perspectives
Professionalism

Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

Is this a Graduate Writing Intensive (GWI) course?

Yes

Please attach the GWI Course Approval Request form:

Bio220B Form A.docx
Bio 220B gwi_form.docx

Please attach any additional files not requested above:

1 BIO220B_KnowledgeGaps_Assignment.docx
9 Peer Review Assignment Bio220B.doc
8, 10 Thesis Proposal Assignment Bio220B.doc
7 Thesis Proposal Abstract assignment Bio220B.doc
6 Thesis Proposal Timeline assignment Bio220B.doc
5 Technical Writing assignment Bio220B.doc
4 BIO220B_Methods_Assignment.docx
3 BIO220B_IntroAssignment.docx
2 Proposal outline assignment Bio220B.doc

Key: 14747