#### WRITD Course

**Proposal**

*Note:* The **Writing in the Disciplines Course Guidelines** may be found in the Faculty Book (yellow pages) at: [Faculty Book](https://gustavus.edu/facultybook/)

**Date**: 11 January 2016

## I. Course Information

1. Department: Biology
2. Course #: 378
3. Course Title: Plant Physiology
4. Name of Instructor(s); multiple instructors may apply for WRITD designation for a commonly taught course: Pamela Kittelson
5. Has a copy of this proposal been shared with the department chair?

Yes [x]  No [ ]

1. Maximum enrollment: 14

 The maximum enrollment cap for WRITD courses is 20.

1. Catalog course description:

This course focuses on physiological interactions between plants and the environment. Topics include: 1) how plants respond to a range of physical, chemical, and biological factors; 2) how plants acquire and exchange energy or nutrients with the environment; and 3) plant growth and development integrated by hormone interactions. These principles are related to ecology, environmental issues, genetics and molecular biology. Three hours of lecture and three hours of laboratory weekly. Prerequisites: BIO-101, BIO-102, BIO-201, BIO-202, CHE-107 and CHE-141.

**II. Writing Conventions**

Although WRITD courses do not require use of a specific style manual, what discipline-specific writing conventions (MLA, APA, etc.) will students be asked to use within this course?

We use the conventions outlined in the “Instructions to Authors” from the journal, Plant Physiology. We also use a book by V. McMillan called, "Writing Papers in the Biological Sciences," which students have used in the biology ‘core’ classes (required Biology prerequisites).

**III. Please respond to the following questions** as completely as possible in the space below. Refer to the WRITD course criteria in **section 2.2.2 (yellow pages)** of the Faculty Book found at the link listed at the top of this form.

1. WRITD courses require students to search for at least some of the texts, data, artifacts, artworks, etc. that they will be writing about, or to generate their own data (through interviews, experiments, observations, composition, etc.). **Describe one assignment or activity that will help students search for or generate their own data or texts.**  Students submit three written reports that require that they collect and analyze data from multi-week experiments completed in laboratory sessions. Because these reports are written in the style of short scientific research paper, the students must search for and incorporate other published research. The quality of the introduction and discussion sections increases when students can find and use several relevant papers that provide context for the experimental question(s) and conclusions.
2. WRITD courses should develop students’ ability to find, evaluate, and incorporate outside source material into their writing. **Describe one assignment that will require students to find, evaluate, and incorporate outside source material into their writing.** Students also write a literature review that mirrors a thesis introduction or a grant proposal for NSF (National Science Foundation). Students make extensive use of the primary literature and the final product typically needs 10-15 articles to meet assignment expectations. Some potential sources will be central to a student's argument, while others will not be relevant, but the students generally need to evaluate many more than 15 papers. During the search and development phases students must ascertain the relevancy of each paper and decide which ones to incorporate. In many cases, papers they thought initially valuable get de-emphasized, while others become more critical.
3. WRITD courses should require students to complete one or more major assignments in stages, with revision cycles, before final grading. **Describe one example of such an assignment, including its revision cycle.**

The literature review assignment is broken into a series of scaffolded steps. Individuals discuss possible topics with me during a library session, where they learn additional strategies for exploring scientific literature.

Students are given 1-2 weeks to narrow their focus and bring at least three articles to lab. In that lab, students share their proposal with everyone, we add our suggestions and they may decide to modify, redirect or reinforce aspects of their orginal proposal. Three weeks later they hand in an outline including a bibliography of major citations.

A complete draft of the literature review is due six weeks from the start of the project. Students give their drafts to two assigned peers and me. We have one week to read and provide written comments to the author. Before these drafts are due, we discuss what these written comments should address, we discuss two models, and they are provide a rubric (modeled from an AC&U rubric). I emphasize that the reviewer needs to comment on overall organization, if the central theme is cohesive and synthetic, if the ideas are well developed using multiple examples of data, and if the author's conclusions follow from the arguments.

One week later in lab, each peer review group (n = 3 + me) is scheduled for a 45 block, where we go through each draft and makes comments. Since we only have ~15 minutes per paper verbal comments are limited to macro-comments; e.g. what works, what needs revision or clarification, if organization needs enhancement, where more depth in the form of data is needed and if synthesis has been achieved. Everyone is expected to provide feedback to others. Comments regarding grammar, punctuation or spelling are appropriate only if the problems are re-occurring. The authors then have one to two weeks to make the appropriate revisions for the final due date (12th week of the semester).

1. WRITD courses ask faculty to spend some class time engaged in activities involved in the writing process. **Describe a strategy or exercise you will use to engage students in the writing process during class.** In addition to the peer review panel at the end of semester (described above), I also hold weekly discussions where we read examples of primary literature and literature reviews. Early in the semester and for about four consecutive weeks, students are asked to write a brief annotation of the week's article (3-5 sentences) at the beginning of the discussion. These annotations summarize the main points of the research paper, distilling the major relevant evidence, and citing tables and figures. Initially, it is hard for students to find the right balance of specificity without excessive detail,. However, they improve substantially after they are asked to refer to those annotations during discussion, and then reflect on the initial quality of their annotation in the last 5 minutes of class after the formal discussion is complete. I also emphasize how writing annotations will be critical for the primary literature review assignment described above.

**Submit this form to the Provost’s Office at the following email address:** **courseproposal@gustavus.edu**