W2 Course Review Form

To complete this form, type responses below. You will also need to collect up to three other documents and add them to the bottom of the form or email them separately as attachments. Email your complete proposal, consisting, of the following items, to the Writing Across the Curriculum Coordinator:

1. This completed form
2. A document that covers the policies and goals and grade breakdown for the course (can be a draft)
3. A document that provides an outline for assignments and lessons over the course (can be the same document as (1)).
4. A sample writing pedagogy assignment—a rubric or specific assignment description or handout or lecture about writing.

As a W2 course, your course will be one of four W courses that students count toward a General Graduation Requirement (one has to be a W1 and is usually taken by students in their first year).

When the Writing Advisory Council reviews your proposal, members will check for the following:

a. Students are informed that the course is a W2 (best practice)
b. Students are informed that developing writing skill is a course goal, i.e., including something about "developing writing ability" stated globally or as discrete writing skills in a list of course learning objectives (best practice)
c. The grade breakdown for the class shows that **at least 30% of the course grade based on writing**, **required.** Students should complete an adequate quantity of writing of sufficient difficulty that they can reasonably be expected to improve their skills. Some writing should normally be completed by individual students working on their own, although other writing may be collaborative. Consider assignments you may include across usually at least two of these categories in terms of student time/instructor expectations/weight of grade: low stakes (journals, blog entries, online posts, in-class writing); middle stakes (reading responses, summaries, bibliographies); and high stakes (research papers, final projects, formal presentations, multimedia projects, resumes).
d. Instruction in writing & writing assignments appear to be likely to help students develop their written communication skills. Best practice would be for writing to appear as a planned item for instruction, like other course content, indicated on the weekly or daily course outline. A **minimum of 15% of instructional time must** be spent engaging students in activities that are likely to improve students' writing, **required**. These activities might consist of student time-on-task through homework &/or in class.

Note: Faculty teaching W2 courses should select the IDEA goal about developing skill in written or oral communication as "important" or "essential."

1. Course acronym, number, & title: ENVL3432 Soil Science

2. Instructor name: Judith Turk

3. Instructor program/school: Environmental Science/NAMS

4. Show how at least 30% of the course grade is based on writing.

Students will be graded on their submission of three formal lab reports (30% of the grade) and several regular labs involving shorter writing assignments (20% of the grade). Article discussions (10% of the grade) will include analysis of conventions in scientific writing as part of the discussion prompts.

- **Exams (30%)**
  - Three exams including a mixture of short answer, matching, and multiple choice questions
- **Formal Lab Reports (30%)**
  - Three lab reports following the format of a scientific research article.
- **Regular Labs (20%):**
  - Calculations, graphs, and/or short writing assignments.
- **Article Discussions (10%)**
  - Three group discussion of assigned journal articles completed in class
- **Quizzes (10%)**
  - Weekly quizzes including short answer questions from the study guides.

5. Check those pedagogies you plan to use:

_ clear, written assignment descriptions
x instruction on aspects of writing through brief lecture/explanation
_ sample assignments (models)
_ instruction on aspects of writing through class discussion(s)
_ instruction on aspects of writing through peer critique or class writing workshops
x instruction on aspects of writing through assigned reading (textbook/handout/online)
x rubrics (in advance of final grading) that indicate how work will be graded
x constructive feedback from the instructor (oral or written) to all or most students on drafts of assignments in progress OR on assignments that will be repeated in the class (allowing students to use feedback to hone their skills)
_ other:
_

6. Explain how you will provide instruction in writing.

Along with each lab for the first half of the semester, instruction will be provided on how to write one section of a lab report. Instruction will include topics such as how to organize an introduction to a scientific paper and what information to include in a methods section. Students will start with just writing a single section of a lab report (e.g., methods), which will be submitted for part of their "regular labs." Later in the semester, three full "formal lab report" will be submitted.

7. What are the main things you are looking for as you grade or comment on student writing? How and when will you provide students with this feedback?

I am looking for lab reports that are clear and to the point, don't over understate or overstate the conclusions of the study, and follow the proper organization for a scientific paper. I will provide detailed written comments on the sections assigned with the regular labs during the first half of the semester. For the second half of the semester the students will submit a full lab report every other week and feedback will be provided one week before the next lab report is due so that it can be used as they are working on their next report.

8. Mark the appropriate cells.

Writing characteristic/skill	**Provide instruction / assign reading**	**Comment on/grade**	**Require student reflection about**	**Not a significant focus of my class**
Process: Invention (brainstorm/outlines/freewrites / talking with others to generate or refine ideas)	x			
Process: Revision (draft, revise, proofread)				x
Adapt communication to				x

contexts (ELO x.1) (audience, purpose, setting, disciplinary & genre convention) For instance, ask students to practice communicating in more than one context or with diverse audiences (e.g., with K-8 students & college peers, with service learning partners & the teacher)				
Apply academic genre conventions (ELO x.1, 2.3, x.4), (e.g., summary, analysis, academic report, annotated bibliography, reflection)				x
Apply professional genre conventions (ELO x.1, 2.3, x.4) (e.g., memo, letter, brochure, proposal, progress report, report, white paper, procedure, process, instructions)				x
Apply disciplinary genre conventions (ELO x.1, 2.3, x.4) (e.g., lab report, disciplinary research paper, disciplinary literature review)	x	x		
Summarize (ELO 1.2)	x	x		
Synthesize info from multiple sources (ELO 2.2)	X	x		
Synthesize info to support student's point (ELO 2.3)				x
Analyze data/ideas/arguments	X	x		
Develop ideas (examples, support, logic)	X	x		
Clearly state an appropriate thesis				x
Write effective introductions/conclusions	X	x		
Apply organizational strategies (e.g., spatial, chronological, level of importance, logical connection, genre expectation) (ELO x.3)	X	x		

Write a paragraph with one main idea & adequate support for that idea				x
Integrate sources (paraphrasing/quoting/citing)	X	x		
Integrate visuals (e.g., charts, graphs, photographs) (ELO 2.4 & 3.4)	x	x		
Integrate media (student-created multimedia assignments, oral presentations with supporting visuals, video clips) (ELO 3.4)				x
Format documents, disciplinary (MLA, APA, lab report, disciplinary proposal) (ELO x.4)	x	x		
Format documents, professional (resume, report, poster, brochure, Power Point) (ELO x.4)				x
Demonstrate style: e.g., sentence structure/length, subordination/ coordination		x		
Use appropriate formality, voice, & tone		x		
Use appropriate grammar (e.g., subject/verb agreement, pronoun reference) (ELO x.5)		x		
Use appropriate punctuation (e.g., commas, semicolons, apostrophes) (ELO x.5)		x		
Use appropriate words (ELO x.5)		x		

9. Which will you ask students to use in this class?
   - ☐ APA
   - ☐ Chicago
   - ☐ MLA
   - X Other: Agronomy Society of America
   - ☐ None

10. **Optional.** Note any other information the Advisory Council might find useful.

ENVL343: Soil Science (Spring 2017)

Writing curriculum highlighted

Instructor
Dr. Judith K.Turk (Judy)
Office: Arts and Sciences 121
Phone: 609-652-4209
Email: Judith.Turk@stockton.edu
Office hours: Tu 8:30-9:30am, Th 10:30-11:30 am, Fri 8:30-9:30am, or by appointment

Class time and location
Tu,Th 12:30-3:45pm Arts and Sciences 110

Detailed course schedule (click to open as PDF)

Essential Learning Outcomes

This is a writing across the curriculum (W2) course. In addition to covering the topic of Soil Science this course will emphasize the development of scientific writing skills.

Program Competence (Objectives: Gaining factual knowledge and developing oral and written communication skills)

Understand the basic structure and function of the global environment and environmental problems, policies, and practices.

- Learn to recognize soil horizons and assign the correct horizon nomenclature
- Be able to describe the processes of weathering and soil formation
- Learn to interpret and use information contained in soil surveys and soil taxonomy
- Understand physical concepts in soils sciences (e.g., particles size distribution, bulk density, soil structure)
- Learn tests used to evaluate soils for engineering purposes
- Understand hydrologic principles used by soils scientists (e.g., soil water potential, hydraulic conductivity)
- Recognize chemical and morphological differences between hydric and non-hydric soil
- Learn the different types of clay minerals that occur in soils and how they affect the chemical and physical properties of the soil
- Become familiar with common soil organisms, decomposition processes, and management soil organic matter
- Be able to describe various nutrient cycles and how each is affected by the chemical and biological conditions of the soil
- Become familiar with policies and practices related to hydric soils, erosion control, nutrient management

Be able to communicate these ideas effectively to decision makers, professionals, and the public.

- Develop skills in scientific writing by preparing reports based on the work completed in the lab.

Quantitative reasoning and research skills (Objectives: Applying knowledge and developing professional skills)

Be able to apply the scientific method to environmental problems.

- ●Use the scientific method to explore chemical changes in saturated soils, the effect of substrates with different C/N ratios on decomposition processes, and soil effects on plant growth.

Be able to interpret quantitative data from the literature and apply mathematical and statistical techniques to research.

- ●Understand and interpret quantitative concepts in soil science, including particle size distribution, bulk density, Atterberg limits, carbon stocks, nutrient budgets, etc.
- ●Select and apply appropriate statistical methods for analysis of research results.

Critical Thinking (Objective: Critical thinking)

Be able to interpret and evaluate all sides of an environmental issues.

- ●Read and discuss one paper on the effects of bioenergy crops on the global carbon cycling, including effects on carbon storage in soils.

Continually update knowledge and skills as appropriate to deal with changing information and changing threats to the environment.

- ●Learn to access and use sources of new information, including soil surveys and scientific journals, by participating in small group discussions of assigned journal articles and conducting a literature review.
- ●Learn to understand the language used by soil scientist to describe soil properties, which is required to understand and utilized new information in soil surveys reports and the scientific literature

Generate creative and novel ideas for solving pressing environmental issues.

- ●Recognize problems and limitations of research presented in assigned readings and discuss new questions that derive from the results presented in each paper.

Required books/supplies

●Text book: Elements of the Nature and Properties of Soils. Third Edition. By: Nyle C. Brady and Ray R. Weil

●Laboratory and Activity Manual: Available at the bookstore.

●Lab notebook: Any style of bound notebook is acceptable, must be separate from the notebook you use to take lecture notes.

●Calculator: NOT a cell phone. *You will not be allowed to use your cell phone as a calculator during exams.*

Grading:

●Your grade will be based on the following assignments:

- ○**Exams (30%)**
  - •Three exams including a mixture of short answer, matching, and multiple choice questions
- ○**Formal Lab Reports (30%)**
  - •Three lab reports (see Appendix F and G of the Laboratory and Activity
- ○**Regular labs (20%):**
  - •Calculations, graphs, and/or short writing assignments.

- ○**Article Discussions (10%)**
  - •Three group discussion of assigned journal articles completed in class Manual for details)
- ○**Quizzes (10%)**
  - •Weekly quizzes including short answer questions from the study guides.

●Dues dates for assignments completed outside of class are on the class schedule. Grades will be lowered by 10% for each day an assignment is late.

●Letter grades will be assigned as follows:

>= 94	A
90 - 93.9	A-
87 - 89.9	B+
83 - 86.9	B
80 - 82.9	B-
77 - 79.9	C+
73 - 76.9	C
70 - 72.9	C-
67 - 69.9	D+
63 - 66.9	D
60 - 62.9	D-
< 60	F

Attendance

Attendance at all class meetings is mandatory. Unexcused absences will result in a failing grade for all assignments completed during the class meeting. Excused absences may be made up by completing an extra homework assignment. Excused absences include the following:

●Religious holidays: Notification of absences for a religious holiday must be provided within the first 10 business days the semester.

●Other excused absences (with appropriate documentation):

- ○Attending a University function
- ○Death or illness of a family member
- ○Illness of a dependent
- ○Legal proceeding requiring your presence
- ○Injury or illness
- ○Active military service
- ○Pregnancy or parenting related absences deemed medically necessary by a doctor

Other class policies

Policies related to lab

●You may not eat or drink in AS-110. If you need some food or drink to make it through class, step out of the lab.

●Read the section of the lab manual indicated on the schedule before coming to class.

●Clean all labware and your bench space after working in the lab (leave labware to dry on the rack next to the sink).

●Do not put dirt down the sink drain. Use the buckets in the sinks if you are cleaning something that has dirt in it.

General classroom policies

●No taping or video recording is allowed in this class.

●You may use a laptop or tablet to take notes and work on in-class assignments (with the exception of quizzes and exams). However, I expect you to stay on task. Do not use electronic devices to do work for other courses, communicate with your friends, or check your email during class.

●Be polite and helpful to your fellow classmates.

- ○Do not be disruptive: Questions are encouraged, but keep them on topic.
- ○Do not be rude: Derogatory or belittling language directed towards any of your classmates is absolutely not tolerated and may negatively impact your grade.
- ○Be helpful: If you complete a group assignment quickly and your classmate is stuck, offer to help.

●Any student caught cheating will receive a failing grade for the work on which they have cheated. Additionally, a report of academic dishonesty will be filed through the Office of the Provost. Examples of cheating include:

- ○Copying another student's work or allowing another student to copy your work
- ○Plagiarism of published or unpublished work
- ○Use of unauthorized notes or electronic devices during an exam

For more information on Stockton's policies and procedures regarding academic dishonesty, as well as definitions and examples of plagiarism, please see the Division of Academic Affairs' webpage on Academic Honesty.

Soil Science 2017 Class Schedule

Dates not yet updated for spring schedule

Sept. 3: Introductory lecture (Ch. 1, Ch. 4 p. 97-104)

Soil color and texture (lab 1)

Sept. 8: Lecture on soil classification (Ch. 3)

Soils information lab (lab 3)

Sept. 10: Lecture on weathering and soil formation (Ch. 2)

Prep for PSA lab (lab 4 – before class)

Discussion of arboreal Histosols paper (**Conventions in scientific writing: The Introduction Section**)

Sept. 15: Lecture on literature review and writing an Introduction

Soil profile description (lab 2) – write an introduction

Sept. 17: Lecture on soil texture (Ch. 4 p.97-104)

Discussion of Mars Paleosols paper (**Conventions in scientific writing: Abstracts and Conclusions)**

Sept. 22: Sample preparation and hydrometer analysis (lab 4 – day 1)

Sept. 24: Lecture on writing a methods section

Sieving and calculations (lab 4 – day 2) -- write a methods section for Lab 4

Sept. 29: Bulk density lecture (Ch. 4 p. 104-121)

Sample collection for bulk density (lab 5 – day 1)

Discussion of ??? paper (**Conventions in scientific writing: In text citations and reference list**)

Oct. 1: Lecture on writing results and discussion/use of statistics

Bulk density lab (lab 5 – day 2) -- write results and discussion

Prepare samples for lab 7 (lab 7- day 1)

Oct. 6: Exam 1

Oct. 8: Lecture on engineering properties of soils (Ch. 4 p. 123-129)

Atterberg limits (lab 6 – day 1)

Proctor test (lab 7 – day 2)

Oct. 13: Lecture on graphs and captions

Atterberg limits calculations (lab 6 – day 2)

Proctor test calculations (lab 7 – day 3) -- submit graph with caption

Set up for lab 9 (lab 9 - week 1)

Oct. 15: Lecture on clay minerals (Ch. 8 p. 240-248)

Molecular models

Calcium saturation of colloids (Lab 10 – Day 1)

Flood flask #4 (lab 9 – week 2)

Oct. 20: Lecture on CEC (Ch. 8 p. 248-260)

CEC game

Calcium displacement from colloids (Lab 10 – Day 2)

Set up respiration experiments (Lab 15 – Day 1)

Planning session for rootbox project (lab 13 – day 1)

Oct. 22: Concentration of displaced calcium (Lab 10 – Day 3) -- write a methods section

Flood flask #3 (Lab 9 – week 3)

Oct. 27: No class – precepting

Oct. 29: Flood flask #2 on Wednesday (Lab 9 – week 4, day before lab)

Lecture on soil aeration (Ch. 7 p. 201-218)

Flooded soils lab analysis (Lab 9 – week 4, lab day)

Set up root boxes (Lab 13 – day 2)

Nov. 3: Lecture on soil hydrology and temperature (Ch. 5, Ch. 6 p. 189, Ch. 7 p. 218-232)

Hydraulic condutivity lab (lab 8)

Nov. 5: Review for exam 2

Nov. 10: Exam 2

Nov. 12: Flooded soils lab report due

Lecture on decomposition (Ch. 11 p. 365-372, 391-394)

Analysis of soil respiration (Lab 15 – Day 2)

Nov. 17: Lecture on soil acidity (Ch. 9 p. 269-298)

Soil pH and lime requirement (Lab 11)

Sample prep for SOM analysis (Lab 14 – Day 1)

 Nov. 19: Lecture on soil organisms (Ch. 10)

Ignite samples in muffle furnace (Lab 14 –Day 2)

 Nov. 24: Lecture on soil organic matter (Ch. 11 p. 362-365, 378-390)

Carbon stock calculations (Lab 14 – Day 3)

Nov. 26: No class – Thanksgiving

 Dec. 1: Respiration lab report due

Root analysis (Lab 13 – Day 3)

Dec. 3:

Lecture on nutrient cycles (Ch. 12)

Dec. 8:

Lecture on nutrient management (Ch. 13)

Dec. 10:

Lecture on erosion (Ch. 14)

Exam review

Dec. 15: Rootbox lab report due

Exam 3

Appendix F: Writing Lab Reports

Basic Format: Lab reports should be 6-8 pages (double-spaced, 12-point font). Your lab reports should include the following sections (indicated with headings): Abstract, Introduction, Methods, Results, Discussions, Conclusions, and References. All lab reports must be completed individually. Duplicate or significantly similar reports will receive a failing grade and will be reported to the Provost's Office as a case of Academic Dishonesty.

Methods: Do not copy the methods from this manual word-for-word. Summarize the key parts of the methods that we used instead of giving step-by-step instructions. Carefully consider which details of the experiment are important enough to include in the methods section.

Results: In the results section you should describe the data in the text and present data in tables and/or figures. Include a caption for all tables/figures and reference the table/figures by number in the text of your report. Check the clarity of your tables and graphs closely: Are the axes clearly labeled? Are the units indicated? Are symbols clearly defined? Is the data accurately plotted? Is the variability within the data represented with error bars/standard deviations?

Discussion: In the discussion section you should explain how your results relate to those of similar published study and present possible explanations for the patterns that emerge in your results.

References: Cite a minimum of six sources, with in-text citation. Summarize important points from the papers you read in your own words, but do not use direct quotations. Your references may include your textbook and scientific journal articles. No web references are allowed unless they are journal articles that you downloaded from the library. When you download a journal article from the library, it is cited the same as a journal article in print, do not give the URL. Your reference list should be in the format of a paper in the *Soil Science Society of America Journal*.

Grammar to pay attention to in lab reports:

- Use the proper subscripts and superscripts in chemical formulas. For example, carbon dioxide is CO_2 (not CO2).
- If a sentence begins with a number or chemical name, the word must be spelled out instead of using symbols.

Proof-reading: The grading rubric that I will use for your lab reports is provided in Appendix G, check your lab report to make sure you have addressed each criteria outlined in the rubric. Try to set the lab report aside and look at it a second time before you turn it in. If possible, don't look at the report for a few days before you proof read. This can help you to catch grammatical errors and typos that you may not notice if you write the report in one sitting.

Appendix G: Lab Report Grading Rubric

EVALUATION: Lab Report _____ Writer: _____

Section Points			Poor 0	###	0.5	###	Excellent 1	Section Scores
5		**Title**						5.00
	5	Describes lab content concisely, adequately, appropriately					x	5.00
5		**Abstract**						5.00
	5	Conveys a sense of the full report concisely and effectively					x	5.00
20		**Introduction**						20.00
	3	Successfully establishes the scientific concept of the lab					x	3.00
	10	Effectively presents the objectives and purpose of the lab					x	10.00
	7	States hypothesis and provides logical reasoning for it					x	7.00
10		**Methods**						10.00
	10	Effectively summarizes methods with adquate detail					x	10.00
15		**Results**						15.00
	3	Opens with effective statement of overall findings					x	3.00
	2	Presents visuals clearly and accurately					x	2.00
	5	Presents verbal findings clearly and with sufficient support					x	5.00
	5	Successfully integrates verbal and visual representations					x	5.00
15		**Discussion**						15.00
	3	Opens with effective statement of support of hypothesis					x	3.00
	2	Backs up statement with reference to appropriate findings					x	2.00
	5	Provides sufficient and logical explanation for the statement					x	5.00
	5	Sufficiently addresses other issues pertinent to lab					x	5.00
10		**Conclusion**						10.00
	10	Convincingly describes what has been learned in the lab					x	10.00
10		**Presentation**						10.00
	2	Citations and references adhere to proper format					x	2.00
	2	Format of tables and figures is correct					x	2.00
	2	Report is written in scientific style: clear and to the point					x	2.00
	4	Grammar and spelling are correct					x	4.00
10		**Overall aims of the report:** *the student...*						10.00
	3	Has successfully learned what the lab is designed to teach					x	3.00
	3	Demonstrates clear and thoughtful scientific inquiry					x	3.00
	4	Accurately measures and analyzes data for lab findings					x	4.00
100						**Points Earned**		**100.00**
						Total Possible Points		100
						Percentage		100%