AGRO/HORT/SOIL 525, EPWS 525, SOIL 625, and PLEN 6210
"Scientific Writing – How to be a Productive and Effective Writer"

SYLLABUS

Fall Semester 2023, three credit hours, Graduate Level

The class is intended for graduate students who have obtained data from their graduate research program and are engaged in the analyses of their results (typically at or beyond the midway mark of their research program). At the end of the semester, it is anticipated that Ph.D. students enrolled in the 625 level offering shall have completed a manuscript that is essentially ready for submission to a journal. M.S. students may also reach this level of completion, but it is dependent on each student's specific situation.

MEETING TIME AND PLACE:

- Wednesday 1:00 to 2:30 pm. Synchronous class meetings will be held on Zoom. These weekly meetings will require you to speak on camera. Thus, you will need a computer with Zoom, webcam, and microphone. Please see *CLASS ATTENDANCE AND PARTICIPATION* (below) for more information regarding weekly class meetings.

- Lectures will be recorded and posted weekly at the Canvas website. Recorded lectures will be available on demand (asynchronous).

REQUIRED TEXTS:

- *Getting Published in the Life Sciences* (2011) by Richard J. Gladon, William R. Graves and J. Michael Kelly. ISBN-13: 978-1-118-01716-6. Published by: Wiley-Blackwell. http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118017161.html

- *How to Write a Lot: A Practical Guide to Productive Academic Writing* (2007) by Paul J. Silvia. ISBN-13: 978-1591477433. Published by: American Psychological Association.
  Meet the author at: http://www.youtube.com/watch?v=DeVjXINr5Wk

CO-INSTRUCTORS: Dr. Rich Pratt and Dr. Brian Schutte

- **Contact Info:** Dr. Rich Pratt ricpratt@nmsu.edu

- **Contact Info:** Dr. Brian Schutte bschutte@nmsu.edu

ENROLLMENT: Course nos. (AGRO 525, CRN: 67358), (HORT 525, CRN: 67361), (SOIL 525/625, CRN: 56887/55943), (PLEN 6210, CRN: 67363) and (EPWS 525 CRN: 66905). *Students in the 625 cross-listings will be required to perform an additional research related writing activity above those required for the 525 listing.*

COURSE OBJECTIVES:

- Students will learn how to overcome writing barriers and develop a writing schedule.
- Students will learn how to better organize the results of their experiments into effective tables and figures.
- Students will improve their writing skills so that manuscript preparation becomes more efficient and productive.
- Students will learn how to successfully navigate a manuscript through the entire manuscript preparation, revision, review and publishing process.
- Students will learn professional standards for the conduct of ethical reporting of scientific results.
- Students will learn professional standards for conducting objective, rigorous reviews of scientific manuscripts.
- Students will successfully communicate their research findings to the scientific community through publication in peer-reviewed, scientific journals.

COURSE POLICIES:

GRADING: The final grade in the course will be based on the total points earned during the course. No extra-credit projects will be offered. Total points awarded (670-700) are spread across 10 to 11 course components:

Component	Points	Percent of total (525)	Percent of total (625)
Writing Assignment 1	25	3.7	3.6
Writing Assignment 2	30	4.5	4.3
Writing Assignment 3	35	5.2	5.0
Writing Assignment 4 (625 only)	30	--	4.3
Writing journal (log) and goals	50	7.5	7.1
Lecture quizzes (14 quizzes, 4 pts each)	56	8.4	8.0
Reading quizzes (6 quizzes, 4 pts each)	24	3.6	3.4
Book exercises (3 exercises, 5 pts each)	15	2.2	2.1
Preparation of manuscript	285	42.5	40.7
Review of manuscript	50	7.5	7.1
Final Examination	100	14.9	14.3
TOTAL (525)	670	100	
TOTAL (625)	700		100

Overall letter grades will be based on the following scale: 93 to 100 percent = A; 90 to 92 percent = A-; 87 to 89 percent = B+; 83 to 86 percent = B; 80 to 82 percent = B-; 77 to 79 percent = C+; 73 to 76 = C; 70 to 72 percent = C-; 67 to 69 percent = D+; 63 to 66 percent = D; 60 to 62 percent = D-; below 60 percent = F. Incomplete grades are given onlyif the student encounters a documented illness or family emergency.

Late Assignments (not including quizzes): **Lose 20% of points each day (24 hr. period); not accepted if more than 2 days late.**

CLASS ATTENDANCE AND PARTICIPATION: You are expected to attend every class period and to participate in class discussions and exercises. This means having your webcam on and remaining on camera throughout the class meeting. Excused absences require notification and approval at least 24 hours prior to absence. In the case of medical or family emergencies, notify both instructors as soon as possible.

SPECIAL CIRCUMSTANCES

All medical information regarding disabilities will be held in strict confidence by the University. If you have or believe you have a disability that interferes with your academic progress, you may contact Student Accessibility Services (SAS) at 646-6840 (voice phone) for an appointment (Corbett Center, Room 204). A text telephone number for hearing impaired (TDD/Text) is 646-1918. Please provide documentation about your disability to the SAS office. After you register with SAS (or if you already have registered) and need accommodations, please provide your "accommodations memo" (from the SAS) to Dr. Pratt or Dr. Schutte within 2 weeks of the first class meeting. The memo needs to be addressed to Dr. Pratt or Dr. Schutte. You may then discuss accommodations with the instructors. Instructors will review and approve the accommodations and return the memo to you to turn in to SAS no later than five (5) days after receiving. Appropriate accommodations will then be provided.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES:
It is the student's responsibility to advise the instructors of chronic disabilities during the first week of the semester. The instructors and student will work with the Office of Student Accessibility Services to provide appropriate accommodations. No special accommodations will be made for students who do not inform the instructor in a timely fashion, or who do not involve the Office of Student Accessibility Services. Temporary disabilities will be accommodated at the instructors' discretion.

DISCRIMINATION AND DISABILITY ACCOMMODATION
Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADA) covers issues relating to disability and accommodations. If a student has questions or needs an accommodation in the classroom (all medical information is treated confidentially), contact:

Disability Access Services
Corbett Center Student Union Room 204
Aaron Salas, Director
575-646-6840
das@nmsu.edu

New Mexico State University, in compliance with applicable laws and in furtherance of its commitment to fostering an environment that welcomes and embraces diversity, does not discriminate on the basis of age, ancestry, color, disability, gender identity, genetic information, national origin, race, religion, retaliation, serious medical condition, sex (including pregnancy), sexual orientation, spousal affiliation, or protected veteran status in its programs and activities, including employment, admissions, and educational programs and activities. **You may submit a report online at equity.nmsu.edu. If you have an urgent concern, please contact the Office of Institutional Equity at 575-646-3635.**

Title IX prohibits sex harassment, sexual assault, dating and domestic violence, stalking and retaliation. For more information on discrimination or Title IX, or to file a complaint contact:

Office of Institutional Equity (OIE) - O'Loughlin House
1130 University Avenue
Phone: (575) 646-3635
E-mail: equity@nmsu.edu
Office of Institutional Equity Website

Other NMSU Resources:

NMSU Police Department:	(575) 646-3311	www.nmsupolice.com
Aggie Health & Wellness (Medical and Counseling Service):	(575) 646-1512	www.wellness.nmsu.edu
NMSU Dean of Students:	(575) 646-1722	
For Any On-campus Emergencies:	911	

CODE OF CONDUCT:

1) Respect of others (including instructors and guests) is required of everyone in the classroom at all times.
2) Students are expected to adopt the honor system during the exam. This system requires no cheating during the exam, and reporting of any observed, suspected violations. Suspected violations will be handled in accordance with university procedures on misbehavior and academic dishonesty as described in the Student Handbook and Faculty Rules.
3) Plagiarism is not allowed. Suspected misconduct will be handled in accordance with established university policy as stated in the Student Handbook and Faculty Rules.

PLAGIARISM

Plagiarism is using another person's work without acknowledgment or making it appear to be one's own. Intentional and unintentional instances of plagiarism are considered instances of academic misconduct and are subject to disciplinary action such as failure (including zero grade) on the assignment, failure of the course or dismissal from the university. The NMSU Library has more information and help on how to avoid plagiarism at http://lib.nmsu.edu/plagiarism/

The NMSU Student Handbook states that "Academic misconduct includes, but is not limited to…

1. Cheating or knowingly assisting another student in committing an act of cheating or other forms of academic dishonesty;
2. Plagiarism, which includes, but is not necessarily limited to, submitting examinations, themes, reports, drawings, laboratory notes, undocumented quotations, computer processed materials, or other material as one's own work when such work has been prepared by another person or copied from another person.
3. Unauthorized possession of examinations or reserve library materials.
4. Unauthorized changing of grades on an examination, in an instructor's grade book, or on a grade report; or unauthorized access to academic computer records.
5. Nondisclosure or misrepresentation in filling out applications or other University records in, or for, academic departments or colleges.

The NMSU Student Handbook states the following are possible sanctions that may be imposed on individual students for infraction of regulations.

1. Disciplinary Probation
2. Disciplinary Suspension
3. Dismissal
4. Expulsion

As an alternative, an instructor may deem it appropriate to give a "0" grade for the plagiarized work, or for the entire course.

COURSE SCHEDULE

Recorded lectures: Each week (*except Week 9*), a recorded lecture will be posted to Canvas. Recorded lectures will include Canvas quizzes that assess comprehension of lecture topics. Recordings and quizzes will be posted on Thursdays. Quizzes will be due 5:00 pm the following Tuesday.

August 16 and August 23, Weeks 1 and 2

TOPIC: Course Introduction

- What is scientific writing, why should I care, and how does it differ from other types of writing?
- The importance of becoming an effective writer and publishing in scientific journals
- Is writing really that hard? Getting writing done, overcoming barriers to writing (*starting a writing schedule is paramount*)
- Overview of steps in the publication process

READING:

- Silvia "*How to Write a Lot: A Practical Guide to Productive Academic Writing*" Chapters 1, 2, 3, 4 and 5
- Gladon et al. "*Getting Published in the Life Sciences*" Chapter 1 (The Importance of and Need for Publishing), Chapter 2 (Steps in Manuscript Preparation and Getting Started) and Chapter 6 (Principles and Characteristics of Good Scientific Writing)
- **Quiz** on this reading material will due at noon August 30

ASSIGNMENTS:

- **Writing assignment I**: Biosketch
  Instructions: Write a one page educational bio-sketch that presents your pathway to graduate school. Include experiences or revelations that directed you to your scientific discipline. Your bio-sketch will be shared with the class.

  Writing assignment I format: One page, double spaced. **Due at beginning of class on August 23. Submit to both instructors through NMSU email**.

- **Writing Log Assignment:** Create a draft spreadsheet. Be prepared to share with the class. **Due at beginning of class on August 30. Submit to both instructors through NMSU email.**

August 30 and September 6, Weeks 3 and 4

TOPIC: What is good writing?

- An approach to good writing style
- Unnecessary words and (unnecessary) phrases
- Tricks of the trade can make you a pro
- Writing for your audience

READING:

- Silvia "*How to Write a Lot: A Practical Guide to Productive Academic Writing*" Chapters 6 and 7
- Gladon et al. "*Getting Published in the Life Sciences*" Chapter 7 (Developing the Take-Home messages and the Provisional Title), Chapter 8 (Organizing and Outlining Your Manuscript) and Chapters 9 and 10 (Results I and II)
- Gopen & Swan article (on Canvas)
- **Quiz** on this reading material will be due at noon September 13

ASSIGNMENTS:

- **Writing Assignment II:** Model paper
  Instructions: Select a paper in your field that you think is an excellent, well written paper. It should not be one authored by your advisor. It should not be a review paper or "note" paper (*a "note" paper is an abbreviated article presenting a small study*). Write a paragraph explaining why you think it is an excellent, well written paper. Cite at least six examples of specific sentences, paragraphs, tables or figures, and other structural elements that effectively communicated the take-home message. For each example, explain why you believe the structural element was effective.

  Writing assignment II format: Double spaced. **Due at noon on September 6. Submit to both instructors through NMSU email**.

- **Writing Log Assignment**: Establish project goals and concrete goals. Keep ongoing writing journal entries (for monitoring your progress). Your writing log will be discussed during your meeting with instructors in Week 9.

- **Book Exercises**. Complete Exercises 2.1, 2.2, 2.3 "Getting Started Exercises" pp 20-22 in *Gladon et al.* **Due at 5:00 pm on August 30**. Submit to both instructors through NMSU email.

Draft tables and figures. Prepare drafts for the table(s) and figure(s) that you plan to present in your manuscript. Be prepared to share yourdraft table(s) and figure(s) with the class. **Due at beginning of class on September 6. Submit to both instructors through NMSU email.**

- September 13 & September 20, Weeks 5 and 6

  TOPICS: Organizing and presenting data publication
  - Preparing tables and figures
  - Developing the take-home message
  - Provisional Title

  READING:
  - Gladon et al. "*Getting Published in the Life Sciences*" Chapter 11 (Results III), Chapter 12 (Results IV) and Chapters 14 (References)
  - **Quiz** on this reading material will be due at noon September 27

  ASSIGNMENTS:
  - **Writing Assignment III:** Dissecting Results and Discussions
    Instructions: You will select two scientific articles. Read both and pay close attention to the results and discussion sections. You will write an essay that compares the results and discussion sections. To guide your comparisons, consider the following questions as you read:
    - Results: Which data and analyses do the authors emphasize ? What are the statements of significance? Are there data or analyses that are minimally reported or left out? How did the results section set the basis for the discussion?
    - Discussion: How do the authors expand the context of the results to larger issues? *Assignment description continues to next page.*

Your essay needs to include three paragraphs. The first paragraph should compare results sections. The second paragraph should compare discussion sections. In the third paragraph, indicate which of the two articles more strongly presents the take-home message(s). Conclude the third paragraph by stating why you believe one article is superior.

Writing assignment III format: Double spaced. **Due at noon on September 20. Submit to both instructors through NMSU email**.

- **Book exercises.** Complete Exercises 7.1, 7.2, 7.3 "Developing Take-Home Messages & Provisional Title", pp 80-84 in *Gladon et al.* **Due at noon on September 13. Submit to both instructors through NMSU email.**
- **Book exercises.** Complete Exercises 8.1, 8.3, 8.4 and 8.5+ as appropriate "Brainstorming Take-Home Messages", pp 100-105 in *Gladon et al*. Submit via Canvas. **Due at noon on September 20**. **Submit to both instructors through NMSU email.**
- **Writing Log Assignment**: Track your progress

September 27 and October 4, Weeks 7 and 8

TOPIC: The Results Section

READING:

- Gladon et al. "*Getting Published in the Life Sciences*" Chapter 15 (Materials and Methods), Chapter 16 (Introduction) and Chapter 17 (Discussion)
- **Quiz** on this reading material will be due at noon October 11

ASSIGNMENTS:

- **Manuscript section drafts**. You will start preparing a manuscript as the major class assignment, based on your own data. You will be asked to share electronic copies of manuscript sections with classmates.
- **Writing Log Assignment**: Track your progress

October 11, Week 9

- *You will meet individually with instructors.* ***Bring a paper or electronic copy of your writing log to the meeting.***

October 18, Week 10

TOPICS: References & Materials and Methods

READING:

- Gladon et al. "*Getting Published in the Life Sciences*" Chapter 13 (Revising and Editing), Chapter 19 (Title…) and Chapter 20 (Polishing)
- **Quiz** on this reading material will be due at noon October 25.

ASSIGNMENTS:

- **Manuscript section drafts**. You will start preparing a manuscript as the major class assignment, based on your own data. You will be asked to share electronic copies of manuscript sections with classmates.
- **Writing Log Assignment**: Track your progress

October 25 and November 1, Weeks 11 and 12

TOPICS: Introduction, Discussion; Finishing and polishing the writing

READING:

- Gladon et al. "*Getting Published in the Life Sciences*" Chapter 18 (Abstract), Chapter 21 (Manuscript review) and Chapter 24 (Peer review process).
- **Quiz** on this reading material will be due at noon November 8

ASSIGNMENTS:

- **Manuscript section drafts**. You will start preparing a manuscript as the major class assignment, based on your own data. You will be asked to share electronic copies of manuscript sections with classmates.
- **Writing Log Assignment**: Track your progress

November 8, Week 13

**********Draft of manuscript (minus abstract) is due**********

TOPICS:

- Editing, editing & editing ***It is not just about writing. It is about rewriting and rewriting***…..
- Abstract

ASSIGNMENT:

- **Manuscript review**: Review classmate's manuscript draft. **Due November 15**
- **Writing Log Assignment**: Track your progress

November 15, Week 14

TOPICS:

- Submitting the manuscript
- Cover letters
- Ethics in publishing

READING:

- Gladon et al. "*Getting Published in the Life Sciences*" Chapter 3 (Ethical issues in publishing), Chapter 22 (Cover Letter), Chapter 23 (Final Checklist), Chapter 25 (Response letter) Chapter 26 (Proofreading)

ASSIGNMENT:

- **Manuscript review**: Submit your manuscript review
- **Writing Log Assignment**: Track your progress

November 22, No class meeting – Manuscript Writing Week (National Holiday) – Give Thanks!

November 29, Week 15

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Final manuscript (with abstract and cover letter) is due
Writing journal (with project goals, and comments/reflections) is due

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TOPIC: The journal review process

- How to respond constructively to a review (without alienating the editor)
- How to proof-read your galley proofs

READING:

- Silvia "*How to Write a Lot: A Practical Guide to Productive Academic Writing*" Chapter 8

MONDAY, December 4th, 1:00 to 3:00 PM Final Exam

Writing Resources:

Alley, M., Craft of Scientific Writing, 3rd Edition, Springer Publishing.

Author's Guide for Manuscript Preparation. Ed. R.L. Gilbertson. 2006. Published in Phytopathology, Vol. 96, No. 1, 2006.

Conference of Biological Editors, Committee on Form and Style. 1964. Style manual for biological journals. Second edition. American Institute of Biological Science, Washington, D.C.

Day, R.A., 1998. How To Write and Publish a Scientific Paper, 5th Edition, Oryx Press. ISBN-13: 978-1573561655 ISBN-10: 1573561657

Editor's Handbook. 1999. Published by ASA, CSSA, and SSSA, Madison, WI. Gopen,

G.D. and J.A. Swan., 1990. The Science of Scientific Writing. Published in American Scientist (Nov-Dec 1990), Volume 78, 550-558.

Glasman-Deal, H. 2009. Science Research Writing for Non-Native Speakers of English, 1st edition, Imperial College Press. ISBN-13: 978-1848163102 ISBN-10: 184816310X

Gopen, G.D. and J.A. Swan., 2002. Internet resources for scientific writing. Published by the American Chemical Society, Vol. 31, No. 2 pp 60-62.

Hofman, A. H. 2010. Scientific Writing and Communication: Papers, Proposals, and Presentations. Oxford University Press, New York, NY. 682 pp.

Houp, K.W., and T.E. Pearsall, 1980. Reporting Technical Information, 4th Edition. Published by Glencoe Publishing Co., Encino, CA.

Kesling, R.V. Crimes in Scientific Writing. Published in Turtox News, Vol. 36, No. 12.

Luellen, W.R. 2001. Fine-Tuning Your Writing: Advanced Writing Techniques for Scientists, Engineers, Physicians and Other Professionals (Paperback). See attached.

Matthews, J.R., J.M. Bowen, and R.W. Matthews. 1983. Effective Science Communication: A Workbook for Biological, Medical, and Technical Writers. Published by the University of Georgia, Athens, GA.

Matthews, J.R. and R.W. Matthews. 2014. Successful Scientific Writing. A step by step guide for the Biological and Medical Sciences. Fourth Edition. Cambridge University Press, Cambridge, UK. ISBN 978-1-107-69193-3

Messer, R.K. 1982. Style in Technical Writing. Published by Scott, Foresman and Company, Glenview, IL.

Publications Handbook and Style Manual. 1998. Published by ASA, CSSA, and SSSA, Madison, WI.

Sword, H. Air & Light & Time & Space How Successful Academics Write. 2017. Harvard University Press.

Thaiss, C. 2019. Writing Science in the Twenty-First Century. Broadview Press, Peterborough, Ontario, Canada. 341 pp.

Walpole, J. 1980. A Writer's Guide: Easy Ground Rules for Successful Written English. Published by Prentice Hall, Englewood Cliffs, NJ.

Weisman, H.M., Basic Technical Writing, 4th Edition. Published by Charles E. Merrill Publishing Company, Columbus, OH.

Reviewing:

Research Ethics, Manuscript Review, and Journal Quality 1992. (H.F. Maryland and R.E. Sojka, eds.). Proceedings of a Symposium on the Peer Review-Editing Process. ACS Miscellaneous Publication. Published by ASA, Inc., CSSA, Inc., and SSSA, Inc., Madison, WI.

Rosenzweig, M., J.I. Davis and J. H. Brown. 1988. How to write and influential review. Maryland, H.F. and Bull. Ecol. Soc. Am. 69(3):152-155.

Waser, N.M., M.V. Price and R.K. Goldberg. 1992. Writing an effective manuscript review. 1992. BioScience 42(8):621-623.

Writer's Guides and Style manuals:

Hodges, J.C. and M.E. Whitten. 1982. Harbrace College Handbook. Published by Harcourt, Brace, Jovanovich, New York, NY.

Strunk, W. and E.B. White. The Elements of Style. 2000. Pearson Education, Inc.

Publishing

Choi, K.C. 2002. How to Publish in Top Journals. http://www.roie.org/how.htm Skousen, J. 2000. Publish or Perish: Some Reasons for Perishing. Published in CSSANews, March 2000: 16-18.

Miscellaneous Documents:

Crop Science Editorial Board Meeting 2001, documents.

Crop Science Session on Scientific Writing, Charlotte, N.C. Oct. 22, 2001

Kamoun, S. 2004. How to write a scientific paper and a bunch of related stuff. WAMBA Presentation, 2004.