

**University of Siena  
Graduate Course  
Research Methodology**

**Meeting Day/Time:** 14:30-16:30 Tuesday  
**Meeting Room:** Science Park: Conference Room, 1<sup>st</sup> Floor

**Meeting Day/Time:** 17:00-19:00 Thursday  
**Meeting Room:** S. Miniato: *Room to be announced.*

**Instructor:** Lesly Temesvari, Ph.D.  
Professor of Biological Sciences, Clemson University  
Fulbright Lecturer, University of Siena

**Office Hours:** To be announced at first meeting  
**Office:** Room 320, Department of Molecular Biology  
**Phone Number:** 0577 234913  
**Email:** LTEMESV@clemson.edu

**Text:** None

**Sources:**

National Academy of Sciences. Committee on Science, Engineering, and Public Policy (1995). *On Being a Scientist: Responsible Conduct in Research*. 2<sup>nd</sup> Edition. National Academy Press, Washington, DC.

Glass, D.J. (2007). *Experimental Design for Biologists*. 1<sup>st</sup> Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Penrose A.M. and Katz S.B. (2004). *Writing in the Sciences: Exploring Conventions of Scientific Discourse*. 2<sup>nd</sup> and 3<sup>rd</sup> Editions. Longman, New York, NY.

Pechenik J.A. (2007). *A Short Guide to Writing about Biology*. 6<sup>th</sup> Edition. Longman, New York, NY.

Swales, J.M. and Feak, C.B. (2004). *Academic Writing for Graduate Students* 2<sup>nd</sup> Edition. University of Michigan Press, Ann Arbor, MI.

Primary Literature as Required

## COURSE DESCRIPTION:

This course will focus on scientific methodology, the social nature of scientific research, and the central role of communication in research. The topics may include the history of the scientific method, experimental design, collection and analysis of data, major communication genres, publication practices and openness, allocation of credit, authorship, social foundations in science, roles of science and scientists in society, values in science, conflicts of interest, errors and negligence in science, misconduct in science, and the impact of monolingualism in science communication.

While the course will consist of some lectures, the format will have a strong reliance on group discussion. The philosophy of the course will be to focus discussion on student work and assigned exercises, creating a student-centered rather than a teach-led workshop. To enhance student engagement, participants will be encouraged to analyze communications and produce work relevant to their own research interests.

## GRADING (TOTAL POINTS=100%):

Allocation	%
Major Assignments (2)	
Manuscript	30%
Grant Proposal	30%
Assignments	25%
Peer Review Assignments	15%

Grades will be converted to appropriate scale as required by the University of Siena.

## TENTATIVE CLASS SCHEDULE (SCIENCE PARK AND S. MINIATO):

<u>Date</u> Science Park	Topic	<u>Date</u> S. Miniato
16 March	Introduction and General Considerations for Scientific Manuscripts (Reader Expectations and Council for Science Editors)	18 March
23 March	Manuscripts: Methods and Results	25 March
30 March	<i>No class. Work on Manuscript Project</i>	1 April
06 April	<i>No class. Work on Manuscript Project-SCIENCE PARK ONLY</i>	
13 April	Manuscripts: Introduction, Discussion, Abstracts, Titles, Key Words, Authorship, Finishing Touches, Considering Ethics in Scientific Communication	8 April
	<i>No class. Work on Manuscript Project-S. MINIATO ONLY</i>	15 April
20 April	Survey of Other Communication Genres: Literature Reviews and Conference Presentations	22 April
27 April	History of the Scientific Method, Experimental Design	29 April
04 May	Experimental Design (continued)	6 May
11 May	Research Proposals	13 May
18 May	<i>No class. Work on Proposal Project-SCIENCE PARK ONLY</i>	
25 May	Research Proposals (continued), Values in Science and Society	20 May
01 June	<i>No class. Work on Proposal Project</i>	27 May
08 June	Values in Science, Science in Society (continued if necessary)	03 June