



Teaching Undergraduates Scientific Writing: VU Perspective

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Freshman Year

- **Reading** Journal Articles
 - Bjerknes and Solberg (1922); Mass (1991); Semple (2003)
- **Write** about the evolution of a synoptic-scale system (i.e., mid-latitude cyclone)
 - Make maps via GEMPAK
 - Reference maps to describe evolution of event
 - 5-6 pages

MAPS + WRITING = METEOROLOGY

Junior Year

- Thermodynamic Meteorology
 - **Read** thermodynamic-based journal article
 - **Write** review of journal article
- Dynamic Meteorology II
 - **Read** dynamic-based journal articles
 - **Write** literature review of dynamic-based topic (10 pages)
- Scientific Writing in Meteorology (1 cr) **NEW!** (See Below)

Sophomore Year

- Meteorological Observations and Analysis
 - **Read** area forecast discussions
- Climatology
 - **Read** journal articles
 - **Write** journal article reviews
- MET Electives (Sophomore, Junior, and Senior)
 - **Read** journal articles
 - **Write** group projects



Senior Year

- Synoptic Meteorology (Writing Intensive Course)
 - **Written** weekly area forecast discussion (2/wk)
 - AFD Portfolio
 - **Written** Group Synoptic Case Study (10-15 pages)
 - **Draft/Revisions**
 - Final version
- Mesoscale Meteorology
 - **Read** journal articles
 - **Write** group case study
 - Optional **written** in-depth case study (in lieu of final exam)



Scientific Writing in Meteorology

NEW!

Goals

1. Explicitly introduce students to appropriate scientific writing standards in meteorology
2. Analyze scientific arguments and writing
3. Practice good scientific writing, reviewing, and revising habits

References

Bjerknes, J. and H. Solberg, 1922: Life cycle of cyclones and the polar front theory of atmospheric circulation. *Geophys. Publ.*, **3**, 3-18.
 Mass, C., 1991: Synoptic frontal analysis: Time for a reassessment. *Bull. Amer. Meteor. Soc.*, **72**, 348-363.
 Semple, A. T., 2003: A review and unification of conceptual models of cyclogenesis. *Met. Apps.*, **10**, 39-59.
 doi: 10.1017/S135048270300505X

Weekly Topics

- What is scientific writing? Where to begin?
- Argumentative Writing
- Structure of Scientific Writing
- Brainstorming, Outlining, and Drafting
- Constructing Effective Paragraphs
- Constructing Effective Sentences
- Effective Words and Phrases
- Editing/Revising
- Citations and References
- Figures and Tables
- Abstracts and Titles
- Journal Reading Club

