ASTR375: Literature Review Practicum (WI)
Fall 2014: August 25–December 17
TBD (infrequent), STB ???

Version 1: August 24, 2014 (subject to change)

Instructor:	Kathy Cooksey, Ph.D.; STB 219; kcooksey@hawaii.edu; 808-932-7195
Office Hours:	M 1–2 PM, T 12–1 PM, W 10–11 AM, and by
Website:	Laulima ASTR-375-001 (HIL.14241.FA14)
Textbook:	None

Course Description:

A guided course for writing a literature survey on a topic in physics or astronomy. This course can be repeated if a different writing topic is approved. Credits earned in this course may not be counted as upper-division physics or astronomy electives needed for the BA in Physics or the BS in Astronomy degrees. (CRN: 14241, Section: 001)

Pre-requisites: 9 credit hours in Physics or Astronomy courses at the 200 level or above and permission of the instructor.

Learning Objectives:

- Technical writing: an infinitely transferable skill
    1. The final product will be a $\geq$2500-word literature review of a current topic in astronomy or related field. This will be a synthesis of the articles read, not a "book report." The student will make connections across articles: detail agreements, elucidate the disagreements, etc.
    2. The literature review requires detailed evaluation of at least five science journal articles. For these articles, the student will write a $\geq$250-word summary for each.
    3. The student will be encouraged to write "annotations" (brief sentences) summarizing the main points of any other articles read.
    4. There will be at least two iterations on the outline for the final document. The first will be the typical, brief bullet-points format, which will be due early in the semester to focus the students' efforts. The second will be a detailed, $\geq$500-word version that is essentially the topic sentences for each major concept, in outline form so that the flow of logic is immediately assessable. This will be due no later than mid-semester.
- Giving and receiving feedback: improvement only comes with conscious effort[1]
    1. The goal is to give the students feedback early in the writing process so that major problems can be addressed quickly. It is not useful for the students to work in isolation, only to realize they were on an unsatisfactory path.
    2. The course instructor will provide extensive feedback on all required writing assignments (5 article summaries, 2 outlines, final-paper draft, and final paper). The course instructor will focus on the mechanics of proper technical writing. Since writing is an iterative process, the level of feedback detail will vary from large-scale organization and format to minutiae of word choice, syntax, grammar, and punctuation. Feedback will be given

[1] "Malleable mindset" is the key to so much (see Dweck 2008, *Scientific American Mind*, 18, 6, 36; `http://www.ccsf.edu/Campuses/Downtown/scientific_american.pdf`).

to all students, when the comments are about common issues, and to specific students, to accommodate their specific needs.

3. Every student will each have a "science advisor," who may also comment on writing mechanics but will largely focus on developing the student's science comprehension, which greatly influences the clarity of technical writing.
4. The students will also provide feedback to each other on one article summary, the detailed outline, and one draft of the final paper.
5. Feedback and revision go hand-in-hand. The student is expected to incorporate the feedback from the previous assignment(s) into the next, because they all build upon each other. There will be a forced revision of the final paper. The instructor welcomes the students to submit intermediate writings for feedback as they see fit.

- Science: the students will learn about a science topic of their choosing, and writing can further the process of learning.[2]

Email, Textbook, and Websites:

- UHH considers email and Laulima an official form of communication; students are responsible for receiving and returning information in a timely manner.
- The student must ensure that the instructor has her/his correct email address.
- There is no required textbook. Students will be reading refereed journal articles.
- The Laulima course website is listed under ASTR-375-001 (HIL.14241.FA14). This site will be the hub for all course information.

Class Rules:

1. Students are responsible for their own learning, which includes preparing for class, submitting work, asking questions, and seeking additional help.
2. Students should be respectful and supportive of their peers' learning, which means helping each other with difficult concepts but not just giving the answer.
3. Students should convey (either in person, by email, through an intermediary, or somehow) to the professor questions, comments, and concerns about the course.
4. The professor should be receptive to and respectful of the students' needs and interests and should generally follow the class rules as detailed for the students.

[2]See "The Writing Revolution" by Peg Tyre, *The Atlantic Monthly*, October 2012; `http://www.theatlantic.com/magazine/archive/2012/10/the-writing-revolution/309090/`.

General Course Outline (subject to change):

Week	In-class	Assignment
1: 25–29 Aug	First meeting (TBD)	Read "ASTR375: The Goal" (in Laulima:Resources); identify science topic to review (due by Week 2 class)
2: 1–5 Sep *M 1 Sep*	Discuss "ASTR375: The Goal" and science topic (TBD) *Labor Day*	Identify and read 1 journal article related to science topic; discuss with science advisor; write $\geq$ 250-word summary (due before Week 3 class)
3: 9–12 Sep	Peer review article summary #1 (TBD)	Revise article summary #1 (due W 17 Sep 5:00 PM); read 2 more journal articles; discuss with science advisor; write $\geq$ 250-word summary for each (due W 24 Sep 5:00 PM)
4: 15–19 Sep		
5: 22–26 Sep	(Return summary #1 edited by instructor)	
6: 29 Sep–3 Oct	(Return summaries #2–3 edited by instructor) Text	Read $\geq$ 2 additional articles; discuss with science advisor as needed; write $\geq$ 250-word summary for 2 articles (due W 15 Oct 5:00 PM)
7: 6–10 Oct		
8: 13–17 Oct		Construct brief outline of final paper (due W 22 Oct 5:00 PM)
9: 20–24 Oct	(Return summaries #4–5 edited by instructor)	
10: 27–31 Oct	(Return brief outline edited by instructor)	Write detailed, $\geq$ 500-word outline (due before Week 11 class)
11: 3–7 Nov *T 4 Nov*	Peer review detailed outline (TBD) *Election day*	Write $\geq$ 2500-word final-paper draft (due W 19 Nov 5:00 PM; one copy to instructor and one to assigned peer reviewer)
12: 10–14 Nov *T 11 Nov*	 *Veteran's Day*	
13: 17–21 Nov		Peer review draft papers (due W 26 Nov 5:00 PM)
14: 24–28 Nov *R 27 Nov* *F 28 Nov*	(Return final-paper drafts edited by instructor and a peer) *Thanksgiving* *Thanksgiving break*	Work on final $\geq$ 2500-word paper (due M 15 Dec 5:00 PM)
15: 1–5 Dec		
16: 8–11 Dec	Course evaluation (TBD)	
17: 15–19 Dec	Final Exam Week: paper due (M 15 Dec 5:00 PM)	

Students may write using whatever digital or analog medium produces typed, formatted documents. The instructor strongly prefers editing digital copies, but this only works if the student(s) uses a medium the instructor uses. Such digital media include LaTeX,[3] Microsoft Word, Google Docs, OpenOffice, and, of course, PDFs.

Proper citations are required of any technical/science writing. Therefore citations are required in all assignments, but a bibliography is only required for the detailed outline and final paper (including draft). Citations should follow standard conventions in astronomy, which are either the *The Astronomy Journal*/*The Astrophysical Journal* requirements[4] or *Nature*'s standards.[5]

Instructor's two-cents: 1¢: It is very useful to know LaTeX.[3] 2¢: It is highly recommend for the students to implement some system of version control, which refers to tracking changes of files.[6] Version control enabled the instructor to drag out the first submitted version of the Cooksey et al. (2008) paper (see "ASTR375: The Goal"). The instructor is happy to support students' learning either/both of these but will not require it.

[3] LaTeXis a "document preparation system and document markup language" (Wikipedia). It's how Cooksey makes the vast, vast majority of her documents. It's like a programming language, in that it has its own syntax and compiler. LaTeX, through `BibTeX`, also makes handling citations and mathematical notation exceedingly easy.

[4] See `http://aas.org/authors/manuscript-preparation-aj-apj-author-instructions#references`. This is what's used in "ASTR375: The Goal" example; it useful for show who is important (and also easier to remember than numbers).

[5] See `http://www.nature.com/nature/authors/gta/#a5.4`, which describes square-bracket notation where citations appear in numerical ordered, thus the bibliography is not alphabetical.

[6] A brute-force version control would be saving each draft to its own file. More refined would be e.g., tracking changes in Microsoft Word. There are various version-control programs recommended by the instructor: `Git`, `SVN`, `Mecurial`, etc.

Grading:

- The grade depends on the following items: writing assignments (70%); peer reviewing (20%); and attendance (including with science advisor, 10%). The 70% of the grade for writing assignments will be divided as follows: 25% for article summaries, 5% for brief outline, 10% for detailed outline, 10% for final-paper draft, and 20% for final paper.
- There will be no make-up work since due dates are known in advance. It is the student's responsibility to turn in the assignments somehow, either by giving it to another student to submit or by scanning and emailing it to the professor.
- Cheating is not tolerated. Any question of cheating will be tested with an oral exam, to see whether the student(s) involved understand the material.
- Plagiarism is not tolerated. Plagiarism prevention software will be used to assess originality and appropriate citations.
- Word count will be determined by the instructor cutting and pasting into Microsoft Word. Citations, mathematical expressions, etc. will thus count but not the bibliography. For example, in "ASTR375: The Goal" the example is ≈ 3300 words. Though, the resulting introduction in Cooksey et al. (2008, ApJ, 676, 262) was ≈ 1100 words.
- The letter grade will be given based on the chart below:

Grade	% Required
A	≥ 93
A−	$[90, 93)$
B+	$[87, 90)$
B	$[83, 87)$
B−	$[80, 83)$
C+	$[77, 80)$
C	$[73, 77)$
C−	$[70, 73)$
D	$[60, 70)$
F	< 60

where e.g., $[90, 93)$ means $\geq 90\%$ and $< 93\%$.

Disability Support: Any student with a documented disability who would like to request accommodation should contact the University Disability Services Office at 932-7623 (V) or 932-7002 (TTY), as early in the semester as possible.

Advising: Advising is a very important resource designed to help students complete the requirements of the University and their individual majors. Students should consult with their advisor at least once a semester to decide on courses, check progress towards graduation, and discuss career options and other educational opportunities provided by UH Hilo. Advising is a shared responsibility, but students have final responsibility for meeting degree requirements.

Kilohana Academic Success Center: The KASC provides academic support opportunities for all UH Hilo students that foster their development into independent, self-motivated learners. Students who visit Kilohana have access to subject-specific and academic skills tutoring from UHH students selected for their academic achievement and dedication to helping others succeed. Kilohana is located on the lower level of the Mookini Library and on the web at `http://hilo.hawaii.edu/kilohana/`.

Human Rights: The University of Hawai'i at Hilo prohibits discrimination in its education programs based on race, national origin, color, creed, religion, sex, age, disability, veteran status, sexual orientation, gender identity or associational preference. If at any time during class you feel uncomfortable about what is being talked about, or feel that your human rights have been violated, please feel free to leave the room. However, the professor asks that you confer with her as soon as possible about what happened so that appropriate action can be taken if necessary to avoid future problems. If you are uncomfortable speaking with the professor about your concern, please contact Kalei Rapoza (`kaleihii@hawaii.edu`), Interim EEO/AA Director, at 932-7641.

UH Hilo Sexual Assault Policy: UH Hilo provides confidential assistance for victims of sexual assault. Counseling Services on-campus and the YWCA Sexual Support Services off-campus offer guidance regarding medical assistance and emotional help and can discuss options for reporting sexual assaults to law enforcement. All conversations are private and confidential. The UH Hilo Sexual Assault Policy can be found at: `http://hilo.hawaii.edu/uhh/vcsa/documents/UHHSexualAssaultPolicy.pdf` For assistance during the day, contact UH Hilo Counseling Services at (808) 932-7465; or, after hours and on weekends, contact the YWCA Sexual Assault Support Services at (808) 935-0677.

Student Conduct: Students are expected to follow the University of Hawai'i at Hilo Student Code of Conduct available at the following URL: `http://www.uhh.hawaii.edu/catalog/student-conduct-code.html`.