INSTRUCTIONAL DESIGN AND SOFTWARE DOCUMENTATION

Carly Finseth, Boise State University

INTRODUCTORY ESSAY

In Fall 2016, the technical communication program at Boise State University underwent major curricular changes, including the development of several new courses. This course, Instructional Design and Software Documentation was one such new course, designed to focus on teaching upper-level undergraduate students the principles of instructional design and how to write effective documentation. The course is a hybrid course, and serves approximately 15-18 students every fall semester. We meet face-to-face approximately every 2-3 weeks throughout a 15-week semester. The remaining time is spent in online discussions with students working independently on a variety of projects.

One of the challenges of designing and teaching Instructional Design and Software Documentation is the lack of a readily available, currently existing textbook; nor are there any significant alternative readings. The only well-known text on the subject is 14-years old and retails at $138.00. As an instructor focused more on student learning than textbook selection, I wanted to design a class that would allow students to meet course outcomes without being forced to purchase an outdated and expensive book. Furthermore, I wanted the concept of instructional design to be a primary focus of the learning experience for the students. Therefore, I was determined to ensure that the course materials – from the syllabi to the assignments – were rooted in sound instructional design theory and could serve as effective models of instructional design for the students in the course.

To that end, I decided to construct the course as a game. My research area includes games and learning within the context of instructional design, documentation, and technical communication, and so I could utilize a variety of both proven and experimental methods in learning and gamification to construct my course. I piloted this idea in a graduate-level technical communication course in Spring of 2016, to much success. The syllabus presented here represents the culmination of what I learned during that pilot study, as well as what I have since learned while teaching "Instructional Design and Software Documentation" during Fall 2016.

COURSE STRUCTURE:

In Instructional Design and Software Documentation there is no assigned textbook, nor are there any required readings or assignments. Instead, students are provided with a list of challenges from which they may choose to accumulate points in the course. I also ask the students to purchase two books, neither of which would be considered a traditional textbook. The first is a children's picture book: *Instructions* by Neil Gaiman, which I use as a starting point for the class to rhetorically and contextually analyze what makes good instructions. The second is a how-to book of their choice, which they use continually throughout the course as a model of instructional design, and something they use to analyze for its strengths, weaknesses, structure, content, design, and so on.

In addition, there are no traditional due dates for this course; students, instead, are presented with a series of optional milestones. If they meet the milestones, they earn a small reward; if they miss the milestones, they accrue a small penalty. As a result, I have found when teaching this course that students will use the course syllabus and accompanying materials (such as the list of available challenges, which I call the Challenge Database) to strategize and plan how they will manage their time and contribute their efforts in the course.

The challenges I provide for the students are carefully constructed, with a variety of point levels and types of deliverables. On a 1,000 point scale, challenge opportunities range from 20 points (for, say, writing a short blog post) to 600 points (for proposing, usability testing, and constructing a full-length set of instructional documentation). Most challenges fall in between these areas, such as 50 points a week for reading articles and participating in a class discussion, or 200 points for designing and writing a short software or game manual. Student progress is made anonymously visible; students are asked to create an anonymous username that they keep private and only reveal to their instructor. I then post updates on a running class leaderboard in our course Blackboard site, so that students always know where they stand, particularly in regard to other students in the class. This has proven to be a good way to hold students accountable in what may otherwise be deemed as a mere "fun" class, while also accounting for privacy.

While designing the challenges, I created a curricular map that helped guide my decisions and point allocations based on what I wanted the students to learn. For instance, could a student do nothing but read and discuss assigned articles, and write up weekly blog posts and still meet the course objectives? If not, how could I reassign the points so that it would force them to complete a higher-point (and therefore higher-difficulty level) challenge? What might happen if I introduced penalties and rewards based on standard syllabus items, like due dates and attendance? Which types of strategies might students use to succeed in the course? What might lead to failure, and how could I try and prevent that? These questions, and more, led to the creation of the following syllabus, which outlines the overall structure and policies for the course. Due to space requirements, I was unable to include the Challenge Database with this article; however, I encourage interested readers to please email me if you would like to learn more.

SYLLABUS: INSTRUCTIONAL DESIGN AND SOFTWARE DOCUMENTATION

This course provides an advanced study and application of the principles involved in planning, creating, writing, and designing informational and instructional content in genres such as websites, product documentation, FAQs, and video tutorials. Students who are interested will have the opportunity to explore writing documentation, manuals, walk-throughs, and tutorials for the game industry, focusing on best practices in making effective gaming documentation.

You are going to learn how to teach people things.

WHAT YOU WILL NEED FOR THIS CLASS:

REQUIRED TEXTS:

- *Instructions* by Neil Gaiman
- A how-to or instructional book of your choice*

Additional readings, on Blackboard

Access to email, Blackboard, and Google Hangouts

* The how-to or instructional book can be anything that interests you—whether it's a DIY crafting book or a role-playing game manual, how to guide or cookbook. It must be a book, though, and it must be intended as an instructional guide or manual of some kind. That is, it must teach people things.

Example topics that students have successfully used in the past include: HTML/CSS, clay modeling, knitting, Arabic language learning, leather braiding, video editing, baking, electrical wiring, household organization, self-help, and more. You may feel free to be as serious or as silly as you like in your selection. However, this may be a great opportunity for you to pick up a skill, piece of software, technique, or anything else you've been meaning to learn but haven't had the time.

Feel free to email me if you want to run an idea by me or if you have any questions.

COURSE OBJECTIVES:

Upon completion of this course, you should be able to:

1. PLAN, WRITE, AND DESIGN EFFECTIVE INSTRUCTIONAL DOCUMENTATION
2. CRITIQUE EXISTING GENRES, STYLES, AND PATTERNS IN INSTRUCTIONAL DOCUMENTATION
3. IDENTIFY BEST PRACTICES IN WRITING INSTRUCTIONAL DOCUMENTATION
4. DISCUSS AND CRITICALLY RESPOND TO THEORIES RELATING TO TECHNICAL COMMUNICATION AND INSTRUCTIONAL DOCUMENTATION
5. ANALYZE YOUR OWN LEARNING STYLE(S) AND INVESTIGATE PERSONAL EXPERIENCES ABOUT HOW YOU LEARN THROUGH VARIOUS FORMS OF INSTRUCTIONS AND DOCUMENTATION

WHAT DOES "HYBRID COURSE" MEAN?

This course is officially listed as a hybrid course, meaning that we will meet both in-person and online, sometimes synchronously and other times asynchronously. Our class schedule will detail when we will meet and under which mode (face-to-face or discussion forum). The most up-to-date class schedule will always be posted on Blackboard. Students are responsible for keeping up-to-date on this schedule and attending class, participating, turning in assignments, and so on when required.

CLASS STRUCTURE:

Challenges

In this course, you will be given a collection of activities, assignments, and projects from which to choose; these will be called **challenges**. For each completed challenge, you will earn up to a maximum number of points.

Each challenge will consist of the following information:

1. An indication of whether it is a required challenge or an optional challenge.
2. A detailed description of what must be completed, and how to turn it in to earn points.
3. The maximum number of points possible for completing the challenge.
4. A note on whether or not the challenge is repeatable for additional points.

A few challenges may be required, but most will be optional. Some will lead to additional challenges, depending on the order in which you complete them. However, each challenge will have a maximum number of points possible.

MILESTONES:

Although most (if not all) challenges do not have a specific due date, you do have a series of **required milestones** in this course, that indicate when you must have ***attempted*** a certain amount of points. These milestones are as follows:

1	Friday of Week 2, by midnight	50 points
2	Friday of Week 4, by midnight	200 points
3	Friday of Week 7, by midnight	400 points
4	Friday of Week 10, by midnight	600 points
5	Friday of Week 13, by midnight	800 points
6	Friday of Week 16, by midnight	1000 points

This means that, for instance, by Friday of Week 2 at midnight, you must have attempted at least one 50 point challenge or two 25 point challenges. (Attempting a challenge means turning it in.)

Because of the unique structure of this course, it will be up to you to be self-directed as to when you complete challenges, and which challenges that you choose to attempt. The point structures in this class are meant to be minimum guidelines to help you stay on track so you do not get behind.

WORKING AHEAD:

You always have the option to turn in challenges early; and you are also welcome to work ahead. That is, as an example, if you want to attempt 300 points worth of challenges (rather than the required 200 points) for the September 16th milestone, you are more than welcome to.

LATE WORK:

My policy for late work is simple: either meet the milestones or don't, and then earn bonuses or penalties per the following policy:

- For every milestone you **meet**, you **gain** 50 points.
- For every milestone you **miss**, you **lose** 50 points.

No late work past the final milestone of December 9th will be accepted, for any reason.

GRADING:

Because this course will be largely self-directed, most of your challenges will be turned in to me via email. I will then send detailed feedback on your challenges back to you through email.

Final letter grades will be assigned as follows:

A	900-1000+
B	800-899
C	700-799
D	600-699
F	0-599

Note that only full letter grades will be assigned; no plus (+) or minus (-) grades will be awarded.

Unless otherwise noted, your challenges will be graded according to a rubric that I will provide. (See Appendices A and B.) However, in general, and particularly when there is a challenge without a rubric attached, your work will be graded as follows:

A: Superior – Work is of near professional quality. The assignment meets or exceeds all of the assigned objectives. The content is mature, thorough, and well-suited for the audience; the style is clear, accurate, and forceful; the information is well-organized, designed, and formatted so that it is accessible and attractive; the mechanics and grammar are correct.

B: Competent – The assignment meets the assigned objectives, but it may need improvement in areas such as style, design, grammar, format, audience consideration, or content, or its content is superficial.

C: Average – The assignment needs significant improvement in concept, details, development, organization, grammar, or format. It may be formally correct but superficial in content. It may not fully suit the needs of the target audience, or not fully meet the terms of the assignment.

D: Marginally Acceptable – The assignment may meet some of the objectives but ignores others; the content is inadequately developed, or it contains numerous or major errors.

F: Unacceptable – The assignment does not have enough information or does something other than what is required. It may contain major or excessive errors.

Earning an "A":

Successfully earning 900-1000 points will earn you an A. (Note that this is not merely *attempting* 900-1000 points, but *earning* those points, based on graded feedback from your instructor.) However, you are welcome to complete more than that, and in fact are encouraged to move well beyond 1000 points, depending on your own interests and goals.

Leaderboard:

At the beginning of the semester, each student will choose an anonymous username that only they and I know. I will then use those usernames to post an **anonymous** tally of everyone's running points on Blackboard. To that end, you will always know where you stand in the class, including how well you are matching up against your classmates.

Attendance and Participation Grades:

Your participation grade will be based off of how often you attend class and how well you engage in class discussions, activities, and other content. Specifically, your attendance and participation grade will be calculated as follows:

Days of Class Missed	Points	Participation	Points
0	+50	Engaged; participates in all discussions and class activities	+50
1	0	Mostly engaged; participates in most discussions and class activities	0
2	-200	Not very engaged; attends class but rarely participates; reluctant in activities	-200
3-4	-500	Not engaged; plays on cell phone, sleeps, or otherwise disengages from the course; does not participate in discussions or activities	-500
5+	Automatic failure of the course		

Participation scores will be added (or subtracted) to your overall course points at the end of the semester, after all challenges have been calculated.

LIST OF CHALLENGES:

Challenge opportunities will be made available to you via a PDF manual, as well as posted on our course Blackboard site. Specifically, the below list outlines the challenges available to you. Please note this list is subject to change. Students are also welcome to propose additional challenges to the instructor, per approval.

Tier 1 Challenges: Challenges Worth 25-99 Points		
Challenge	***Points Possible***	***Course Objectives***
Challenge #1: Read and Discuss • **WEEK 2: "Why Don't People Read the Manual?" by Novick and Ward** • **WEEK 4: The "Writing Great Documentation" series by Jacob Kaplan-Moss. This is a three-part reading, which also includes these pages: "What to Write," "Technical Style," and "You Need an Editor."** • **WEEK 5: "The Science of Scientific Writing" by George Gopen and Judith Swan** • **WEEK 7: "Teach, Don't Tell" by Steve Losh** • **WEEK 8: "RTFM? How to Write a Manual Worth Reading" by Rich Bowen** • **WEEK 10: "Empathy: Your Secret Weapon in Designing for the Web" by Nathalie Nahai [video, 34 minutes]** • **WEEK 11: *Don't Make Me Think*: Chapters 1-3 (pp. 1-39) by Steve Krug**	Up to 50 points per week	Discuss and critically respond
Challenge #2: Instructional Design Scavenger Hunt	Up to 25 points per week	Critique; Identify best practices; Discuss and critically respond
Challenge #3: Read and Analyze Game Manuals	Up to 50 points	Critique; Identify best practices; Discuss and critically respond
Challenge #5: Write a Blog	Up to 60 points per week	Plan, write, and design; Critique; Discuss and critically respond; Analyze your own learning style
Challenge #11: Read and Analyze Software and Product Manuals	Up to 50 points	Critique; Identify best practices; Discuss and critically respond

Challenge #13: Show and Tell!	Up to 25+ points per week	Critique; Identify best practices; Discuss and critically respond
Challenge #26: Write a Wiki Page about Best Practices in Instructional Design	Up to 50 points	Plan, write, and design; Identify best practices
Tier 2 Challenges: Challenges Worth 100-199 Points		
Challenge	***Points Possible***	***Course Objectives***
Challenge #6: Join Write the Docs Boise, Attend Meetings	Up to 120 points	Discuss and critically respond
Challenge #7: Write an Instructional Set with No Words	Up to 100 points	Plan, write, and design
Challenge #8: Tell Me a Story	Up to 100 points	Plan, write, and design
Challenge #9: Interview a Technical Communicator	Up to 150 points	Plan, write, and design; Identify best practices; Discuss and critically respond
Challenge #14: End-of-Semester Class Presentation	Up to 100 points	Plan, write, and design; Identify best practices; Discuss and critically respond; Analyze your own learning style
Challenge #25: Rewrite and Redesign an Existing Manual or Guide	Up to 150 points	Plan, write, and design; Critique; Identify best practices
Challenge #27: Create a Short Instructional Video	Up to 100 points	Plan, write, and design
Tier 3 Challenges: Challenges Worth 200-399 Points		
Challenge	***Points Possible***	***Course Objectives***
Challenge #4: Create a Short Game Manual	Up to 200 points	Plan, write, and design
Challenge #10: Create a New Game/Sport/App	Up to 200 points	Plan, write, and design
Challenge #12: Create a Short Software or Product Manual	Up to 200 points	Plan, write, and design
Challenge #16: Map the Format of an Instructional Manual or Guide	Up to 300 points	Plan, write, and design
Challenge #24: Play a New Game and Document Your Experience	Up to 200 points	Plan, write, and design; Critique; Identify best practices; Analyze your own learning style
Tier 4 Challenges: Challenges Worth 400+ Points		
Challenge	***Points Possible***	***Course Objectives***
Challenge #15: Learn Something Cool and Document Your Journey	Up to 400 points	Critique; Identify best practices; Analyze your own learning style
Challenges #17-19: Propose, Test, and Write a Full Documentation Set	Up to 600 points	Plan, write, and design

• **Challenge #17: Documentation Proposal (150 pts.)** • **Challenge #18: Draft and Usability Test Your Documentation (150 pts.)** • **Challenge #19: Create a Full Documentation Set (Final Draft) (300 pts.)**		
Challenge #20: Create Documentation for Our Computer Lab	Up to 400 points	Plan, write, and design
Challenge #23: Teach Yourself Something Cool and Document Your Journey	Up to 400 points	Critique; Identify best practices; Analyze your own learning style

CLASS SCHEDULE

Note this schedule is subject to change. Students are responsible for checking this regularly for scheduling updates.

DATE	MEETINGS	TOPICS	READINGS	THINGS TO DO
WEEK 1	Face-to-face	Welcome Course intro What is instructional design?	*Instructions* by Neil Gaiman (entire book)	Email instructor by Sunday at midnight with your anonymous username for class leaderboards.
WEEK 2	Online discussion forums, via Blackboard	Online vs. print documentation Usability of documentation	Novick and Ward: "Why Don't People Read the Manual?"	MILESTONE #1 Attempt a minimum total of 50 points by Friday at midnight Challenge #1A [Optional]: Initial discussion posts due Wednesday at midnight Follow-up discussion posts due Friday at midnight
WEEK 3	Face-to-face	Writing instructions Writing and designing for how people read, remember, and think Instructions and games	Read/work from your individual instructions book	Bring your individual instructions/how-to book to class Challenge #13A [Optional]: Show and Tell!
WEEK 4	Online discussion forums, via Blackboard	Style, content, and editing	Jacob Kaplan-Moss: "Writing Great Documentation" (three-part series: "What to Write," "Technical Style," and "You Need an Editor")	MILESTONE #2 Attempt a minimum total of 200 points by Friday at midnight Challenge #1B [Optional]: Initial discussion posts due Wednesday at midnight Follow-up discussion posts due Friday at midnight

DATE	MEETINGS	TOPICS	READINGS	THINGS TO DO
WEEK 5	Online discussion forums, via Blackboard	Anticipating reader needs Writing with the reader in mind	Gopen and Swan: "The Science of Scientific Writing"	Challenge #1C [Optional]: Initial discussion posts due Wednesday at midnight Follow-up discussion posts due Friday at midnight
WEEK 6	Face-to-face	Designing for online audiences Overview of digital genres and multimedia modes	Read/work from your individual instructions book	Bring your individual instructions/how-to book to class Challenge #13B [Optional]: Show and Tell!
WEEK 7	Online discussion forums, via Blackboard	Using documentation to teach effectively	Steve Losh: "Teach, Don't Tell"	MILESTONE #3 Attempt a minimum total of 400 points by Friday at midnight Challenge #1D [Optional]: Initial discussion posts due Wednesday at midnight Follow-up discussion posts due Friday at midnight
WEEK 8	Online discussion forums, via Blackboard	How to get people to read the f*^king manual	Rich Bowen: "RTFM? How to Write a Manual Worth Reading"	Challenge #1E [Optional]: Initial discussion posts due Wednesday at midnight Follow-up discussion posts due Friday at midnight
WEEK 9	Face-to-face	Layout, organization, content planning	Read/work from your individual instructions book	Bring your individual instructions/how-to book to class Challenge #13C [Optional]: Show and Tell!
WEEK 10	Online discussion forums, via Blackboard	Empathy – and why it matters in technical communication	Nathalie Nahai: "Empathy: Your Secret Weapon in Designing for the Web" [video, 34 mins]	MILESTONE #4 Attempt a minimum total of 600 points by Friday at midnight Challenge #1F [Optional]: Initial discussion posts due Wednesday at midnight Follow-up discussion posts due Friday at midnight

DATE	MEETINGS	TOPICS	READINGS	THINGS TO DO
WEEK 11	Online discussion forums, via Blackboard	Introduction to usability	Steve Krug: Don't Make Me Think: Chapters 1-3 (pp. 1-39)	Challenge #1G [Optional]: Initial discussion posts due Wednesday at midnight Follow-up discussion posts due Friday at midnight
WEEK 12	Face-to-face	Usability workshop	Read/work from your individual instructions book	Bring your individual instructions/how-to book to class Challenge #13D [Optional]: Show and Tell! [Optional]: Bring a set (or draft) of instructions that you have created for one of the course challenges.
WEEK 13	Online discussion forums, via Blackboard	Writing for user interfaces Revising and polishing your work	None; work on your challenges	MILESTONE #5 Attempt a minimum total of 800 points by Friday at midnight
WEEK 14	Face-to-face	Course review Q&A Presentations Part 1	None; work on your challenges	Challenge #13E [Optional]: Show and Tell! Challenge #14 [Optional]: Presentations Part 1 [Optional, Time Permitting]: Bring anything you would like to work on in class, either individually or collaboratively.
WEEK 15	Face-to-face	Course review Q&A Presentations Part 2	None; work on your challenges	Challenge #13F [Optional]: Show and Tell! Challenge #14 [Optional]: Presentations Part 1 [Optional, Time Permitting]: Bring anything you would like to work on in class, either individually or collaboratively.

				MILESTONE #6 >>>>>>>>>>>>>> FINAL DEADLINE FOR ALL CHALLENGES >>>>>>>>>>>>>> Attempt a minimum total of 1000 points by Friday at midnight

APPENDIX A: RUBRIC FOR DISCUSSION FORUM POSTS

	UNACCEPTABLE	ACCEPTABLE	GOOD	EXCELLENT
INITIAL ASSIGNMENT POSTING	Posts no assignment.	Posts adequate assignment with superficial thought and preparation; does not address all aspects of the task.	Posts well developed assignment that addresses all aspects of the task; lacks full development of concepts.	Posts well developed assignment that fully addresses and develops all aspects of the task.
FOLLOW-UP POSTINGS	Posts no follow-up responses to others.	Posts shallow contribution to discussion (e.g., agrees or disagrees); does not enrich discussion.	Elaborates on an existing posting with further comment or observation.	Demonstrates analysis of others' posts; extends meaningful discussion by building on previous posts.
CONTENT CONTRIBUTION	Posts information that is off-topic, incorrect, or irrelevant to discussion.	Repeats but does not add substantive information to the discussion.	Posts information that is factually correct; lacks full development of concept or thought.	Posts factually correct, reflective and substantive contribution; advances discussion.
REFERENCES AND SUPPORT	Includes no references or supporting experience.	Uses personal experience, but no references to readings or research.	Incorporates some references from literature and personal experience.	Uses references to literature, readings, or personal experience to support comments.
CLARITY AND MECHANICS	Posts long, unorganized or rude content that may contain multiple errors or may be inappropriate.	Communicates in friendly, courteous and helpful manner with some errors in clarity or mechanics.	Contributes valuable information to discussion with minor clarity or mechanics errors.	Contributes to discussion with clear, concise comments formatted in an easy to read style that is free of grammatical or spelling errors.

APPENDIX B: GENERAL RUBRIC FOR CHALLENGES

	UNACCEPTABLE	ACCEPTABLE	GOOD	EXCELLENT
AUDIENCE	Document does not match audience needs. May have unethical aspects.	Some mismatches of document to audience needs.	Good match of document to audience needs.	Excellent match of document to audience needs.
DESIGN	Design elements do not match document genre. May show a lack of implementation of design principles. May have problems with typography that defeat usability. May lack required graphics or use graphics unethically.	Poor match of design elements to document genre. May implement poor design principles and/or demonstrate significant problems with typography. Poor use of graphics or graphics with questionable ethics.	Good match of design elements to document genre. Implements design principles in most areas. May have a few problems with typography. Ethical use of graphics.	Excellent match of design elements to document genre. Effective use of design principles. Clear, readable typography. Excellent and ethical use of graphics.
STYLE & EDITING	May have significantly unclear and/or wordy prose. May have extensive mismatches of level of formality and/or technicality. May show significant problems with sexist or racist language. Has excessive grammatical, mechanical, or typographical errors that make the document fail in its goals.	May have unclear or wordy prose. May show a clear mismatch of level of formality and technicality to audience. May have some problems with racist or sexist language. Grammatical, mechanical, and/or typographical errors may distract or unintentionally amuse users.	Almost always clear and succinct prose. Good matching of formality and technicality to audience. Uses gender and culture appropriate language. Has only a few grammatical, mechanical, and/or typographical errors and they only mildly affect usability.	Clear and succinct prose. Excellent matching of level of formality and technicality to audience. Gender and culture appropriate language. No grammatical, mechanical, or typographical errors. Any errors that may exist do not affect usability.
STRUCTURE	Does not follow significant structural conventions for the	May not follow some structural conventions for	Follows structural conventions for	Follows structural conventions for the genre. Uses

	genre. Does not use headings or transitions successfully. Arranges parts illogically. Does not state the purpose of the document.	the genre. May use ambiguous or non-descriptive headings and transitions. May include illogical arrangements. States the purpose unclearly or in a way that confuses the reader.	the genre. Uses mostly clear headings and transitions. Arranges parts logically. States the purpose mostly clearly.	clear headings and transitions. Arranges parts logically. States the purpose clearly.
ASSIGNMENT COMPLETION	Does not fulfill the assignment. Missing multiple and/or significant parts of the assignment. Provides incomplete or inappropriate citation of sources.	Does not adequately fulfill the assignment. Missing a portion of the assignment. Incomplete or inappropriate citation of sources.	Fulfills the assignment description. Includes all parts of the assignment. Complete and appropriate citation of sources.	Fulfills assignment precisely and fully. Includes all parts of the assignment. Complete and appropriate citation of sources.