HU333: Technical and Scientific Writing

Instructor: Julia Jasken
Class time: MWF 10:05-10:55 RO8 (Summer 2000)
E-mail: jjjasken@mtu.edu

Room: Walker 116
Office: Walker 311 (or CCL113)
Office Hours: MW 11-12

Textbook

Course Goals
- to analyze the rhetorical situations in which documents are both created and consumed
- to understand the rationale behind design and textual decisions made by others
- to gain familiarity with the main genres of technical communication
- to be aware of the communication responsibilities you accept when you assume the role of a technical communicator.

Grading and Assignments

- professional organization memo .............................................. 25 pts.
- intercultural presentation ............................................................. 25 pts.
- preliminary and final proposal ..................................................... 75 pts.
- progress report ........................................................................... 50 pts.
- project report ................................................................................ 50 pts.
- document evaluations ................................................................... 50 pts.
- document testing notes ................................................................. 50 pts.
- participation .................................................................................. 150 pts.
- alternative audience presentation .................................................. 100 pts.
- technical manual (1, 2, 3, final) ..................................................... 200 pts.

Total: 775 pts.

Absence
A substantial portion of this class revolves around in-class collaborative work. If you are absent, you miss valuable class time with your peers and will have difficulty keeping up with the pace of the course. As emergencies do arise, you will be allowed two unexcused absences, but you will still be responsible for getting in contact with your peer group and/or completing the work for that day. A third unexcused absence will make the difference in borderline final grades. Each absence after that can bring your grade down one level.

Excused absences are allowed in cases of serious illness, the death of a family member, or official university activities. In order to receive an excused absence for an illness, you must notify me before class time or bring official notification from the Dean of Students or appropriate department.

Completing Work
To receive a passing grade in this course, you must complete all of the work assigned during the quarter. Late work loses one grade level per day. I reserve the right not to accept late work.
## Americans with Disabilities Act

MTU complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990. If you have disability and need reasonable accommodation for equal access to education or services at MTU, please call Dr. Gloria Melton, Associate Dean of Students (2212). For other concerns about discrimination, you may contact your advisor, department chair, or the Affirmative Action office (3310).

## Course Calendar*

<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>In class activity</th>
<th>Reading Due</th>
<th>Assignments due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>W 6.7</td>
<td>introduction to technical communication</td>
<td>five steps (xiii-xx)</td>
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<tr>
<td></td>
<td>F 6.9</td>
<td>origami workshop</td>
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<tr>
<td>2</td>
<td>M 6.12</td>
<td>professional organization sites, past projects</td>
<td>skim through handbook, search engines (577-580)</td>
<td>e-mail memo of professional organizations</td>
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<tr>
<td></td>
<td>W 6.14</td>
<td>sales proposals</td>
<td>proposals (496-525), technical manual (619-21), process explanation (482)</td>
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<tr>
<td></td>
<td>F 6.16</td>
<td>discuss potential ideas, correspondence</td>
<td>technical writing style (621-23), correspondence (130-144), memos (378-84)</td>
<td>e-mail preliminary technical manual proposal to list</td>
</tr>
<tr>
<td>3</td>
<td>M 6.19</td>
<td>intercultural communication</td>
<td>reading online, global communication (251-52), global graphics (252-254)</td>
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<tr>
<td></td>
<td>W 6.21</td>
<td>instructions, discuss task analysis, audience</td>
<td>international correspondence (298-305), readers (542-43), purpose (527-28), instructions (292-95)</td>
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<tr>
<td></td>
<td>F 6.23</td>
<td>intercultural presentations</td>
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<td>intercultural presentation, final proposals due</td>
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<tr>
<td>4</td>
<td>M 6.26</td>
<td>intercultural presentations, discuss usability testing, ethics</td>
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<td>intercultural presentation</td>
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<tr>
<td></td>
<td>W 6.28</td>
<td>talk about progress reports, peer critique task analysis</td>
<td>progress and activity reports (482-87)</td>
<td>document evaluation memo</td>
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<tr>
<td></td>
<td>F 6.30</td>
<td></td>
<td></td>
<td>task analysis due (two copies)</td>
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<tr>
<td></td>
<td>M 7.3</td>
<td>W 7.5</td>
<td>F 7.7</td>
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<td>5</td>
<td>*pick up task analysis</td>
<td>*notetaking (406-08), quotation marks (538-541), layout and design (343-49), headings (267-70)</td>
<td>*set up usability testing by now</td>
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<td>6</td>
<td>M 7.10</td>
<td>W 7.12</td>
<td>F 7.14</td>
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<td></td>
<td>*warnings, troubleshooting</td>
<td>*outside manual critique</td>
<td>*general design</td>
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<td>*course evaluation</td>
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<td>*graphics</td>
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<td>7</td>
<td>M 7.17</td>
<td>W 7.19</td>
<td>F 7.21</td>
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<tr>
<td></td>
<td>*general design</td>
<td>*all day peer critique</td>
<td>*resume workshop (optional)</td>
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<td>*introductions/conclusions</td>
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<td>8</td>
<td>M 7.24</td>
<td>W 7.26</td>
<td>F 7.28</td>
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<tr>
<td></td>
<td>*oral presentations</td>
<td>*editing</td>
<td>*editing</td>
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<td>9</td>
<td>M 7.31</td>
<td>W 8.2</td>
<td>F 8.4</td>
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<td></td>
<td>*all day manual critique</td>
<td>*set-up presentations</td>
<td>*catch-up</td>
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*progress report, usability testing sheets and notes
*first substantial draft of manual (bring two copies)
*third draft of technical manual
*final draft of technical manual
*project report
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>M</td>
<td>8.7</td>
<td>alternative audience presentations</td>
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<tr>
<td>W</td>
<td>8.8</td>
<td>presentations</td>
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<tr>
<td>F</td>
<td>8.9</td>
<td>presentations evaluations</td>
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</tbody>
</table>
Technical Manual Project

Technical Manual Overview
Summer 2000

Project Description
The main project for the term is a technical manual you will create for some system or process (e.g., a software package, a physical fitness program, a laboratory exercise). This manual will focus around an instruction set designed to guide an audience through a series of steps toward a specific goal—the completion of a task.

You will select a format for your document (e.g., traditional printed manual, video, website or other electronic document) based on your audience's expectations and needs, and on your own expertise.

Scope of the Technical Manual
As a general guideline, select a task or set of tasks related to a system or process that you can guide your audience through in **fifteen to twenty minutes** of actual work time—that is, a task that takes fifteen to twenty minutes to complete. Although I encourage you to select a project that relates to your profession in some way, this is not a requirement.

For example, if I were to do this assignment myself, I might write an instruction set to guide people through the creation of a simple newsletter in QuarkXpress. I could do this project on my own, or I could expand the focus and invite others to work with me.

Collaborative Opportunities
You may want to attempt a project that requires two people (e.g., a multi-stage laboratory exercise, a complex problem-solving tool, a small system or process. Use the same time guideline as for individual projects, that is, each of you will document a section of the whole task that can be completed in fifteen to twenty minutes. All parts will then be incorporated into one complete manual.

Document Stages
Your Technical Manual will develop over a series of stages, each with specific goals. The remainder of this document provides descriptions of those stages.

Assignment Sequence and Timetable
Table 1 provides the dates that individual assignment stages are due to be completed, and also serves as a table of contents for this Technical Manual Project description.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Date Due</th>
<th>Page</th>
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<tbody>
<tr>
<td>Technical Manual (task analysis)</td>
<td>6/30</td>
<td>3-4</td>
</tr>
<tr>
<td>Usability Testing</td>
<td>7/3-7/9</td>
<td>4-5</td>
</tr>
<tr>
<td>Progress Report and Notes</td>
<td>7/10</td>
<td>5</td>
</tr>
<tr>
<td>Technical Manual (first draft)</td>
<td>7/19</td>
<td>3-4</td>
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<tr>
<td>Technical Manual (2nd draft)</td>
<td>7/24</td>
<td>3-4</td>
</tr>
<tr>
<td>Technical Manual (final draft)</td>
<td>8/4</td>
<td>3-4</td>
</tr>
<tr>
<td>Audience Presentation</td>
<td>8/7-8/9</td>
<td>7</td>
</tr>
<tr>
<td>Project Report</td>
<td>8/4</td>
<td>7</td>
</tr>
</tbody>
</table>
Technical Manual Proposal

Proposal Purpose
In this Technical Manual Proposal you will identify a project that you are interested in focusing on for the Technical Manual Project. This proposal is your opportunity to describe a project and its central problem, argue for its appropriateness to your professional or personal goals, and convince me that you are qualified to attempt the project. This Technical Manual Proposal is an informal memo from you to me.

Document Description
The Technical Manual Proposal should be relatively brief, but must include enough detail to adequately describe the project. The proposal will develop in two stages: the preliminary proposal, and the final proposal. See proposals (496).

Preliminary Proposal
The Preliminary Proposal is a very short, informal memo in which you will identify possible projects for the Technical Manual. In this memo you will write brief descriptions (50 to 100 words each) of two projects, complete with their primary importance to readers. You will have time in class to discuss these possibilities and decide whether or not to invite others to collaborate with you on the projects. See collaborative writing (97).

Final Proposal
Your Technical Manual Proposal is a more-formal memo (approx. 500 words) directed to me, and must include the following sections (use the title for each as a subheading in your memorandum). See memos (378) and titles (631).

Project Description—Explain the system or process you want to document, including explanation of your intended scope, plans for collaboration (including who will document what parts of the whole project), a brief examination of any previously existing documentation (e.g., why does it need to be redone?).

Problem Description—Explain why this system or process needs to be documented. Explain any project-specific challenges that you are likely to face (e.g., complex information, difficult process, audience difficulties).

Audience Description—Explain who the audience is for your Technical Manual. Identify some preliminary assumptions you are making about their knowledge level, information needs, and task goals regarding the system or process.

Qualifications, Professional or Personal Interest—Explain your qualifications and/or interest in taking on this project.

If you decide to work in collaboration with another, you may submit one complete proposal that describes the overall project. However, the Project Description and Qualifications sections of the proposal must clearly establish the responsibilities and credentials of each of you.
Technical Manual

Technical Manual Purpose
Technical Manuals provide readers with the information they need to operate a system or process. Instruction sets are the building blocks of such documents. Instruction sets inform, instruct, and guide readers toward the completion of one or more tasks.

Because Technical Manuals must serve either very specific or very general reader groups, the biggest challenges in designing Technical Manuals are often connected to determining and meeting the needs of their intended audiences. A Technical Manual that has not been designed to anticipate the needs of its audience does not serve much good, and in fact may result in costly damages. See technical manuals (619-21).

Technical Manual Description
Your Technical Manual may take one of several possible forms. You may design a printed book or brochure, a poster or poster series, a video, a web site or other electronic document. Select a format that is appropriate to your audience and subject matter, and one that you can actually produce with the technology available to you. Consider also the kind of task you are documenting and the work environment of the intended audience.

For example, you would not provide a paper manual to a diver conducting maintenance checks on boats. However, you might provide that diver with a series of laminated posters that can be connected somehow to the hull of a boat.

Technical Manual Elements
To be complete, your Technical Manual must include each of the elements listed and described below.

Task Overview—Your Technical Manual must provide some beginning point of reference for readers; that is, create a context in some sort of introductory section that will help readers understand the general logic behind the system or process that you are documenting. See introductions (322).

Instruction Set—The center point of your Technical Manual is an instruction set that readers may follow to complete one or more tasks. This is the operation that you should use the 10 to 20 minute time guideline to determine what is appropriate for this assignment. See instructions (292).

Appropriate Graphics—Include graphics that are appropriate to your task, audience, work environment, and that you can produce and integrate according to your technological expertise and access. See illustrations (277), drawings (188), photographs (450), schematic diagrams (575).

Troubleshooting—Just in case something goes wrong, you need to provide readers with assistance for troubleshooting; this may be a separate section of the document, or it may be integrated into the instructions themselves.

Warnings/Precautions—You need to provide your readers with some sense of how to protect themselves, their property, their work; like the troubleshooting information, this may be a separate section of the document, or it may be integrated into the instructions themselves.

These elements are the minimum requirements of your Technical Manual. I have listed some other elements that often prove helpful to readers.
Technical Manual Length

Technical Manuals vary in length according to the demands of the task that they document. Some of the documents produced in this class will be longer than others, perhaps because of greater reliance on graphics. Use the twenty-minute task time frame as a guide to the amount of documentation needed for your manual. (If you have questions about your specific project, please stop after class to talk with me.)

Technical Manual Drafts

The first draft of your technical manual is called a task analysis and is due in class on June 30th. The final draft is due in class on August 2nd. That means your Technical Manual will develop from beginning to end in just four weeks. For that reason, we will conduct several workshops to allow you opportunities to give and receive feedback on your documents.

Workshop Drafts—Always bring the most complete draft or revision of your Technical Manual that you possibly can. If you bring something that is incomplete or “thrown together,” not only will you not benefit much from the workshop, but your classroom participation grade will also suffer.

Keep notes on all discussions you have regarding your Technical Manual. These notes will be very useful when you draft your Project Report.

Final Draft—This version of your Technical Manual ought to appear as it would in final production. That is, if your design requires a special format (e.g., web site, poster, video), you must provide the document in that format. If your document is meant to be laminated, laminate it. Printed Technical Manuals must be produced using a high quality printer, and must have some sort of cover (even if it is only a report cover from the bookstore).

Usability Testing

Usability Testing Purpose

When technical communicators want to get a sense of how real audiences will respond to a set of instructions, they perform a Usability Test. Usability Testing takes on many forms, including some that are very formal. For this assignment, you will only conduct Usability testing on the task analysis portion of your manual.

You will need to organize your test results into some orderly representation of your testing process. For this class, you will incorporate feedback from the Usability Testing stage with feedback from me and your group members into a Progress Report that describes your revision plan for your Technical Manual.

Usability Testing Description

Some document testing strategies are complex; they incorporate reader protocols (recordings of reader’s thoughts as they attempt to complete instructions), recording of reading times and time required to complete steps, and involve dozens of test subjects (for small tests). The document testing that you do here will be much smaller scale and less complicated.
You will test your Technical Manual with 3 people. These test participants must represent as closely as possible your intended Technical Manual audience. (For example, if you identify "novice" readers and doers as your audience, then you must locate 3 novice readers. Expert feedback may be helpful, but will not provide you with the same kind of information you are likely to get from novice readers.)

**Taking Notes**

Use the Usability Testing Form (next page) to invite feedback from your test participants. Make sure that you photocopy enough forms so that each participant can fill out a separate form.

In addition, you must keep field notes of your observations of each test participant as she or he works through your Technical Manual. Make note of the following kinds of things:

- if the participant seems to struggle at any stage;
- if the participant has to ask for a clarification of any step or stage;
- if the participant moves quickly from step to step with no difficulties.

The purpose of your field notes is to provide you with information that the Usability Testing Form will not provide you.

After each participant has completed the task described in the Technical Manual and completed the Usability Testing Form, ask if they have any other questions, comments, or suggestions regarding your Technical Manual.

***Attach the field notes for each participant to their Usability Testing form. Turn these in as an appendix (56) to your Progress Report.

**Writing the Progress Report**

After you have completed all Usability Testing procedures and taken time to study the data you received from the Usability Testing Forms and your Field Notes, you are ready to put together your Progress Report.

Draft this Report as a memo to me. Use a descriptive subject line to identify your Report and Technical Manual. Include the following sections (using the subheads provided) in your report.

- **Reader Feedback**—Summarize comments you have received on your Technical Manual from others (e.g., writing group members, usability testing participants, writing center coaches, anyone else). Include as support for your findings representative comments that characterize the feedback you have received.

- **Plans for Revision**—Formulate and explain an organized plan for revising your Technical Manual. Draw on your discussion of reader feedback to guide your decisions for making the changes you need. If it is appropriate to your project, include discussions of any design strategies that you had hoped to include in the initial drafts but might not have had time to incorporate.
Usability Testing Form

<table>
<thead>
<tr>
<th>Document Designer</th>
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<tbody>
<tr>
<td>Document Title</td>
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<tr>
<td>Course Instructor</td>
<td>Julia Jasken</td>
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<tr>
<td>Document Tester</td>
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<tr>
<td>Document Tester Signature</td>
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<tr>
<td>Date of Test</td>
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1) Did you need to ask for clarification of any steps? Which ones and why?

2) What additional information or explanation might you have found helpful for completing the task(s) described in these instructions?

3) If the task analysis had graphic components, in what way were they helpful/confusing? If they did not, specifically would you have liked to see graphics included and why?

4) What suggestions do you have for improving these instructions? Please be as specific as possible.
Project Report

Project Report Purpose
The Project Report is the final stage of your Technical Manual Project. This Report will describe the working history of your Technical Manual, from the original problem to the final version of your manual. This also provides you with your final opportunity to demonstrate the thinking you have done about technical communication this quarter by describing your strategies for solving communication problems.

Project Report Description
This Project Report will bring together the writing and speaking that you have already done during the many stages of this Project. The elements needed for this report are as follows:

Cover Page—For example, “Project Report on (Manual Title) by (Author).”

Table of Contents.

Problem Statement—Explain the initial problem that you set out to address with your Technical Manual. (50-100 words).


Technical Manual Features and Responsibilities—Discuss the design decisions you made during the development of your Technical Manual. Discuss how those decisions helped you meet your responsibilities to your audience. Use feedback you received during the workshops and document testing as support for your decisions when it seems appropriate. Include the following information:

• Explain why you selected the format you did for your Technical Manual.
• Explain why you chose to present the information as you did (e.g., as a simple procedure, as a tutorial with sample problems or situations).
• Explain why you chose to include the kind of graphic elements that you incorporated.
• Explain any special features of your Technical Manual that you have not already had an opportunity to discuss in this section of the Report.

Project Challenges—Discuss any problems you faced during the development of your Technical Manual, and how you addressed them. Discuss problems that you still have with the Manual (that is, things you would change given the chance).

Plans for Implementation—Discuss plans for implementation, or explain why your Technical Manual is somehow incomplete or inappropriate for its audience or worksite.

Alternative Audience Presentation
This presentation will give you an opportunity to discuss the process of creating your manual and explain how you would shape this manual for a different audience. Each individual or project group will prepare an 8 to 10 minute presentation. Designate 6 to 8 minutes of that time for the actual presentation and leave 2 minutes for questions and comments. When making your presentation, do consider using Powerpoint overheads or slides.

Rehearse your presentation before giving it to make sure you can complete it in the time provided. I will stop presentations at 10 minutes to make sure everyone or every group has enough time.