

CMT 305: Communication Transmission Systems**Proposed Course Syllabus**

Semester: Fall/Winter – 3 credit hours

Class Times: 3 hours, 1 evening/week

Course Title: CMT 305 Communication Transmission Systems

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Course Description: This class will cover definitions of communication, transmission and system, and how all relate to what we do everyday. The student will examine source, encoder (transmitter), channel, and receiver functions in communication transmissions of all types. Emphasis will be placed on principles of line (wired) and air (wireless) communication, a study of various systems, and future developments in communication transmission systems.

Prerequisites: ENGL 121 Composition II: Research and Writing the Public Experience

Co-requisites: None

Rationale for the Course: The style and type of writing in technical fields differs from the typical scholarly (term) paper. Technical documents require the author to have a working knowledge of technical systems that they convey in a clear and concise manner. Typically these documents are written for the lay public or management, both of whom may not have an understanding of technology. Graduates will need skills in written and oral communication to address the technology needs of the industries in which they will work, specifically, proposal writing, presentations, technical journal summaries, and research for the application of technologies to address a business problem.

CMT 305 Communication Transmission Systems is a writing intensive course designed to help students write and present effectively. The course teaches students to organize technical information in an effective, persuasive document. Students address the mechanics of writing and the professional writing standards of the communication technology field.

Course Outcomes:

Upon satisfactory completion of this course the student will have practical experience and be able to:

1. Describe the difference between line and “air” technologies.
2. List the advantages and disadvantages of analog and digital signals.

3. Discuss the impact of the digital revolution in transmission systems.
4. Explain the distinctions between usage of twisted pair, coaxial cable and optical fiber.
5. Identify modulation techniques and their uses.
6. Identify methods of transferring messages through various types of channels.
7. Perform a task analysis in the proposal process.
8. Create a professional document and effectively present a product.
9. Design an operational system (theory) given a set of working parameters.
10. Find and identify career opportunities associated with transmission system technologies.
11. Utilize resources to research communication transmission systems and make informed recommendations/decisions given a set of requirements.
12. Analyze an assignment, work with a group, and assess the achievement of the group as a whole and the participation of the individuals.

Requirements and Assessment:

Two tests will be given during the course (midterm-final). The tests will be announced (and are on the syllabus). There will also be quizzes, class assignments and written assignments. Your grade will be based on the following:

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|---|----------|
| 1. *Abstracts (3 @ 30 pts.) | 90 pts. |
| 2. *Research Report | 100 pts. |
| 3. *Tests (2 @ 75 pts.) | 150 pts. |
| 4. Quizzes/Homework..... | 50 pts. |
| 5. *Group Proposal Assignment | 150 pts. |
| 6. Attitude, Participation, Attendance..... | ** |

*** *These assignments must be completed in order to obtain a passing grade – no exceptions!***

**** Not to be over-looked. There is no point value available for just these alone.**

However, points will be added or subtracted from each individual project with respect to your effort. Attendance in a discussion course is essential. You need to be present to learn the processes and to understand concepts. 1/2 letter grade will be subtracted from your final grade for each absence over 2. Your absence will affect others. Attendance records will be kept. However, certain circumstances do arise, please keep me informed if you are going to be absent - as soon as you know – via e-mail or voice mail.

Late assignments will be accepted with a penalty. A 5% reduction for each day up to 7 days. Please remember, I am not on campus, therefore, you are responsible to get late assignments to me in a timely manner. Total points available are (approximately) 540. Final grades will be determined by the following:

Grade	Percentage
A.....	94 - 100%
A-	91- 93%
B+.....	89 - 90%
B.....	84 - 88%
B-.....	81 - 83%
C+.....	79 - 80%
C.....	74 - 78%
C-.....	71 - 73%

Assignments:

1. Abstracts for discussion, 3 total.

Choose a Communication Technology article from an appropriate trade/professional journal. You must reference your source in your abstract, but do not need to attach the article. Please be sure to include source, title, author, and date (website address, if appropriate). The abstract should be 1 – 1 ½ pages in length. The first ½ to ¾ page should be a summary of the article. The last ½ to ¾ page should be your reaction (thoughts, opinions, and/or critiques) to the article. Be sure to discuss why you think this technology is good/bad, how it could be used, why it won't work well, etc. Each abstract is worth 30 points, 15 points for summary, 10 points for reaction, and 5 points for scholarly style and form (grammar, punctuation, etc.).

Abstract #1 – Any Communication Transmission System

Abstract #2 – An article that you are using as part of your research for your paper

Abstract #3 – An article regarding a Communication Transmission System that will be your next (possible) purchase

2. System Design (Proposal/RFP process)

The product of this assignment is a business document, a proposal, in response to a RFP (Request for Proposal). This assignment is worth 150 points total, 120 points possible for the written portion and 30 points for the presentation.

Each student will be required to write individual sections of the document: Manufacturer and product summary; Corporate Profile; Executive Summary. Each team will be required to synthesize those individual sections into a single, edited section of the finished proposal.

Each team will produce a written 40 page proposal, consistent with accepted business practices. Teams will also be required to present their proposal to the potential client (faculty evaluation team) in front of the entire class. Presentation should include a visual component (e.g. PowerPoint presentation) with handouts for the client and observers.

3. Homework from Voice & Data text (possible presentation on speakers)
4. Research Paper (7- 8 page, typed, APA, MLA, or other acceptable style).

Topic: A Communication Transmission System Technology – pending approval from instructor.

7 – 8 pages not including a bibliography/reference page. Paper should include a minimum of 5 resources, not all from the same source (e.g. not 5 different articles from *Telephony Today*).

The paper will be graded on the following criteria:

Problem Issue or Statement:	<u>10%</u>
Selection of Appropriate Literature:	<u>15%</u>
Review/Summary of Literature:	<u>30%</u>
Conclusion (opinions, thoughts, critiques):	<u>30%</u>
Scholarly Style/Organization:	<u>10%</u>
Form (see below):	<u>5%</u>
Title Page	Margins
Abstract	Paragraphs
Text	Headings
References	Quotations
Grammar	Spelling

This assignment is worth 100 points. Be sure to proofread paper and have someone else proofread your writing before you turn in your assignment. This assignment will also be peer reviewed in class.

All other assignments will be previewed in lecture. Demonstrations will take place in the class session. Video tapes and information sheets will be made available when needed.

Text: Required

Bates, R.J. & Gregory, D.W. (2000). Voice & Data Communications Handbook (4th Edition), McGraw-Hill.

References:

Communication Media in the Information Society; Straubhaar, Joseph and LaRose, Robert; Wadsworth Publishing Co., Boston, MA 1997.

Voice Over IP Telephony: Building the Converged Network, 2nd ed.; Miller, Mark; John Wiley & Sons, 2002.

PBX Systems for IP Telephony; Davidson, Jonathon; Pearson Education, 2002.

Internet Communications Using SIP: Delivering VoIP and Multimedia with Session Initiation Protocol; Sinnreich, Henry and Johnston, Alan B; John Wiley & Sons, 2001.

The Communications Miracle; Bray, John; Plenum Press, New York, 1995.

Technology and American History; Cutcliffe, Stephen and Reynolds, Terry, Ed.; The University of Chicago Press, 1997.

There are also journals and periodicals available in class and in Sill 101 for your use. You can use these resources for your written assignments.

Required Materials:

No materials are required for you to purchase at this time. However, you will need, as a group, “presentation” materials: binders for proposals, handouts, etc.

Course Delivery: The course is conducted as a lecture/laboratory, including but not limited to the following types of class approaches:

- Brief periods of focused instruction followed by writing exercises, technology and team based exercises, peer assessment, and class discussion.
- Share and discuss trade and professional journal articles and the impact to the industry.
- Group analysis of a writing project (the preparation of a proposal) and planning of strategy and research.
- Peer review of research reports.
- Panel discussion with industry professionals.

Outside the classroom, students focus on activities to support in-class work and written assignments:

- Search for sources, rating sources for relevance and expertise, notetaking for later use.
- Drafting, revising, and submitting parts of major papers for feedback and preparing the final papers.
- Team development of the proposal product.
- Review of documents by industry professionals and analysts.

Course Policies:

Research and Reference: Be ready to read, write, use your reference manuals, and research topics during every class session. In any activity, if a term or concept is not clear, students are expected to research the term as well as its usage in the technology field of study.

Retain All Work for Entire Semester: Retain all drafts, final papers, exercises, peer and adult reviews, and assessments. If there is a question during the class or after a grade has been awarded, these records serve as the basis for further discussion.

Assignment Due Dates: Keep to the assigned schedule. If an assignment is due on a particular day, it is due at the beginning of class. There will be frequent exercises that students must complete in an impromptu format. There is no make-up opportunity for these activities except for verified emergencies (injury or health-related crisis to the student or to an individual under the student's direct care). See or communicate with the instructor immediately if you have an emergency that prevents you from completing work.

Participation: University Policy states: “. . . regular class attendance and active participation in classes are important elements in the learning process. Students are at the University primarily for the sake of their intellectual growth and development. Attendance and participation provide appropriate opportunities for the evaluation of the student's progress. . . .

“Each student is personally responsible for the satisfactory completion of the course work prescribed by her/his instructors even though much of the work in this class is to be accomplished by a team. This means specifically that she/he is expected to attend class regularly, and that she/he is responsible for the work assigned in class, the material covered in class and for participation in class activities (including discussion and listening) designed by the instructor as part of the learning experience.”

Academic Honesty: See University policy. A main outcome of the CMT 305 course is the student's ability to incorporate the expertise of others into written documents. The course assesses the appropriate documentation of expert sources of ideas and words. Any concept that is not in the public domain or not the student's own creation must be documented for its source, whether in the form of a direct quote, a paraphrase, or part of a summary. Another main outcome of CMT 305 is to integrate the writing styles of members of a team. Therefore, one member of a team presenting the wording of another team member as his/her own is not appropriate just as submitting the work of another student as his/her own constitutes academic dishonesty.

Other: See the EMU undergraduate catalog about mandatory attendance at the final examination period. Also, please ask about guests attending class. Both the instructor and other students are affected by individuals who are not members of the class. Cell phones should be in silent mode if a student is required by employment to be available or if a serious situation has developed or is impending. Students are asked to leave the class quietly for emergency calls and return quietly upon their completion.

Course Topics and Tentative Schedule:

Session	Topics/Activities	Assignments
1	Introduction Topic: Communication Model	Get Book! And start reading. Chapter handout
2	Topic: History of Communications Group quiz	Due: Transfer of Info List Chapters 1-2
3	Topic: Electronic Communication; Abstract presentations <i>first look at the RFP; form groups for Proposal</i>	Due: Abstract #1 Chapters 9-10 <i>Review 7,39 for field trip</i>
4	Topic: Phone Systems/RFP/Proposal Process Field Trip: Technology Solutions (Livonia)	Due: Research Report Topic Chapters 3-5
5	Topic: The Telephone, Telephone Network Digital and Analog Signals	Chapters 11, 13
6	Topic: Voice and Data Applications Review	Due: Abstract #2; Product summary
7	MIDTERM - finish research papers -	Finish paper...
--	SEMESTER BREAK	Chapter 40
8	Topic: Making a Plan	Chapters 7, 39 Peer Review of Report
9	Topic: Telephony; Cabling	Due: Research Report Chapter 12
10	Topic: Computer Telephony Integration Field Trip: MI Public Radio	Due: Corporate Profile Chapter 38
11	Topic: Telecommunications Funding	Chapters 33, 35-36
12	Topic: PBX Systems and VoIP <i>sign up for Proposal presentation...</i>	Due: Abstract #3 Chapters 28-29
13	Topic: Cellular and Wireless Technology, DSL vs. Cable Final preparation for Proposals	Due: Executive Summary Remember proposal <u>due date/</u> <u>time</u> , and be ready to present...
14	Proposal Presentations to client Proposal decision & Debriefing session	Due: Proposal; Presentation
Final	FINAL EXAM	

Other references for the course include:

Alley, M. (2000). *The craft of editing: A guide for managers, scientists, and engineers*.
New York: Springer Science+Business Media, Inc.

American Library Association (ALA)/Association of College & Research Libraries
(ACRL)/STS Task force on Information Literacy of Science and Technology.
(current). *Information literacy standards for science and engineering/technology*

- (*DRAFT*). Retrieved 3/4/2006 from the world Wide Web:
<http://www.ala.org/ACRL> . (
- Chambers, H. E. (2001). *Effective communication skills for scientific and technical professionals*. New York: Basic Books.
- Friedland, A.J. & Folt, C. L. (2000). *Writing successful science proposals*. New Haven: Yale University Press.
- Hancock, E. (2003). *Ideas into words: Mastering the craft of science writing*. Baltimore: The Johns Hopkins University Press.
- Massachusetts Institute of Technology. (current). *MIT open courseware: Writing and humanistic Studies*. <http://ocw.mit.edu/OcwWeb/Writing-and-Humanistic-Studies/>
- Montgomery, S. L. (2003). *The Chicago guide to communicating science*. Chicago: University of Chicago Press
- Paradis, J. G. & Zimmerman, M. L. (2002). *The MIT guide to science and engineering communication (2d ed.)*. Cambridge: The MIT Press.
- Purdue University. *Online writing laboratory: Writing and technology*. Retrieved 3-5-2006 from the World Wide Web:
<http://owl.english.purdue.edu/internet/resources/writetech.html>
- University of Chicago Writing Program. (Current). Writing science and technology. Retrieved 3-5-2006 from the World Wide Web: <http://writing-program.uchicago.edu/courses/science.htm>
- Writing guidelines for engineering and science students*. (current). Alley, M., Crowley, L., Donnell, J. & Moore, C. (eds.) Retrieved 3-5-2006 from the World Wide Web: <http://www.writing.eng.vt.edu/> (Developed for use by programs at Virginia Technical Institute and State University, University of Illinois at Urbana, Georgia Tech and University of Texas at Austin.)