

DRAFT NOT FOR PUBLICATION OR DUPLICATION

**School of Engineering & Applied Science
University of Virginia
SPRING 2018**

STS 6000 Research Communication in Engineering for Non-Native Speakers

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STS Main Office: Thornton A-237

Media Specialist: Arthur Byrne

Class time: Wednesday 3:30 to 5:30

Location: Thornton TBD

COURSE DESCRIPTION: This course is designed to teach reading/writing/ speaking/ listening skills required for success in technical communication for graduate students whose first language is not English. Specialized instruction in academic/content area communication as well as personal expression in a variety of settings enables students to complete academic programs in a more efficient and timely manner. In addition to five oral presentations and six written assessments, students participate in a vigorous Engineering Library Orientation, weekly in-class pronunciation and vocabulary exercises, and individual conferences with the instructor.

3 credits, Graded-A, B, C, No-Credit.

COURSE OBJECTIVES

I. To achieve academically in all technical/content areas: students will use English to obtain, process, construct and provide subject matter information in spoken and written form.

Instruction and practice will include:

1. Comparing and contrasting information
2. Persuading, arguing, negotiating, evaluating and justifying
3. Listening to, speaking, reading and writing about subject matter information
4. Gathering information orally and in writing
5. Retelling information
6. Selecting, connecting and explaining information
7. Analyzing, synthesizing and inferring from information

II. To achieve academically in all technical/content areas: students will use English to interact in the classroom.

Instruction and practice will include:

1. Following oral and written directions, implicit and explicit
2. Requesting and providing clarification
3. Participating in full-class, group and pair discussions
4. Asking and answering questions
5. Requesting information and assistance
6. Negotiating and managing interaction to accomplish tasks
7. Explaining actions
8. Elaborating and extending other people's ideas and word

INSTRUCTIONAL COMPONENTS: To assess individual student needs, informal and formal assessments in reading, spelling, writing, listening and speaking will be administered. Individual Educational Plans (IEP's) will provide goals and methods of achievement for each student. Instructional components for all students include:

word study, spelling instruction, reading for fluency and comprehension in content areas, writing instruction, speaking and listening. Individual, pairs, small group and whole class instruction will be provided.

TEXTS: Available at UVa Bookstore *Denotes required texts

*Margaret Cargill, and Patrick O’Connor, *Writing Scientific Articles: Strategy and Steps* (April 2009, paperback), Wiley-Blackwell.

*Diana Hacker, *A Pocket Style Manual*, (Bedford/ St. Martin’s)

A college level dictionary and Roget’s Thesaurus

OVERVIEW OF ASSIGNMENTS

ORAL COMMUNICATION	WRITTEN COMMUNICATION	VOCABULARY DEVELOPMENT	PRONUNCIATION
1-Technical Description-process 2-Impromptu Speech Round #1 3-Impromptu Speech Round #2 4-Oral presentation of progress/proposal report 5-Final Presentation	1- Preliminary Annotated Bibliography 2-Patterns of paragraph organization-Writing topic sentences 3-Literature Review Paper (Part 1 of Progress/Proposal Report) 4-Short phrase outline of research progress/proposal report 5-Introductions and conclusions 6-Progress Report/Proposal	Word choice Agreement (syntax) Articles	Beginning consonants Final consonants /t/, /d/, /ing/, /s/ Vowel Placement Stress Patterns

OVERVIEW OF INSTRUCTIONAL COMPONENTS

<ol style="list-style-type: none"> 1. Why read? 2. Examination of the sound to print match in English, Initial assessments 3. Word study: review of written phonemes and morphemes 4. Developing a “useful ” vocabulary 5. Vowel patterns, stress, syllabication, contractions, building vocabulary with homographs, 6. Blends, digraphs and word families 7. Recognizing text patterns: How to Use Graphic Organizers 8. Putting it all together-In-class reading and mapping exercises, how to access prior knowledge 9. Strategy #1 K-W-L 10. Reading in the disciplines- Thesaurus exercises 11. Strategy #2 DRTA 	<ol style="list-style-type: none"> 1. Using abstracts/summaries as pre-reading strategy 2. Strategy #3 Target words 3. Reading fluency-using key words to create meaning 4. Strategy #4 Cornell Method of note taking, In-class lecture/video exercise 5. Examining documents by major - Understanding materials 6. Strategy #5 Using an I Chart 7. Creating annotated bibliographies 8. Strategy #6 Examining complex morphemes 9. Strategy # 7 Mapping the I-Chart, selected in-class reading exercises 10. Timed reading to increase fluency 11. Comprehension exercises, Self correction exercises 12. Final Assessment -Applied Word Study
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STS6000 Weekly Syllabus Spring 2018

<p>Week 1 January 16 Course introduction, Primary Assessment, In- class Writing Sample, Word processed copy DUE 1/21 in STS office, Introduction to language instruction skills, Discuss impromptu speech topics.</p>	<p>Week 2 January 23 Assignments: 1. Writing Workshop on Writing Sample. Revised sample Due 1/ 25, in STS office 2. Read, <i>Writing Scientific Articles: Strategy and Steps, Chapter 1</i>/Collab Assignments 3. Read <i>Hacker</i> ESL Section, 4. Introduction to graphic organizers as a reading and writing tool,.</p>	<p>Week 3 January 30 Assignments: 1. Read <i>Writing Scientific Articles: Strategy and Steps</i> Research-all sections /Collab Assignments. 2. Library Orientation/TBA 3.. Writing Assignment #2-How To Prepare A Literature Review- Preliminary Annotated Bibliography Due 2/4</p>	<p>Week 4 February 6 Assignment: Revised Writing Assignment #2 DUE 2/11 Assignments: 1. Read <i>Writing Scientific Articles: Strategy and Steps</i>: Methods of Development-all sections /Collab Assignments 2. Writing Assignment #3 Patterns of paragraph organization-Writing topic sentences 3. Print out and bring to class 2 technical articles.</p>
<p>Week 5 February 13 1. Writing Workshop on paragraph structure 2. In-class pronunciation exercises 3 Writing Workshop: How to write a progress report</p>	<p>Week 6 February 20 1. Report writing: Introductions and conclusions. Citation paraphrasing 2. In-class writing: short phrase outline of research progress report. Assignments: Word processed outline DUE in STS office 2/25</p>	<p>Week 7 February 28 Assignment: 1. Written Progress Report Due for in class review 2. Prepare oral presentation of progress report Assignment Due : Progress Report Due in STS Office 3/4</p>	<p>Week 8 March 6 Oral Presentation of Progress Report Appointments to review Progress Report/TBD</p>
<p style="color: red;">Week 9 March 13 NO CLASS! SPRING BREAK</p>	<p>Week 10 March 20 1. In-class grammar exercises: Verbs, Verbals, parallel structure. 2. Pronunciation exercises 3. Writing Workshop: How to write a Technical Report</p>	<p>Week 11 March 27 Grammar and pronunciation exercises continued. Assign Final Presentation Assignment Due : First Draft of Technical Report</p>	<p>Week 12 April 3 In-class Technical Report Revision Workshop Final draft Due 4/8</p>
<p>Week 13 April 10 Final Presentations/Technical</p>	<p>Week 14 April 17 Final Presentations</p>	<p>Week 15 April 24 Final Assessment Test</p>	

STS 6000 SPRING 2018/ INSTRUCTOR'S POLICIES

OVERVIEW OF COURSE CONTENT

To be effective creators and practitioners, engineers must not only master the content of science and technology, but also understand the social context in which this knowledge is embedded. It is not enough to know the equations the theory; it is also necessary to have a sense of the origins of this knowledge, the individuals and the institutions that have shaped it, and the way that society values this knowledge. Only when this context of professional knowledge penetrates and informs the very core of beliefs does an engineer become a true professional.

The primary goal of this course is to engage engineering and applied science students in a consideration of some of the significant issues raised by the interaction of technology and society. After an introductory unit, we begin by elucidating some of the beliefs that we hold about the role and value of science and technology.

In addition to helping students develop their understanding of how science and technology are shaped by social contexts and vice versa, the focus on analytic methods is aimed to help students prepare to apply similar analytic methods in writing their Research Papers in STS6000. In conjunction with your Technical Advisor, students will determine their topics and approaches they wish to take in researching them. To further refine the topics and approach each student will write an Outline for your Technical Paper, an Annotated Bibliography, two Reading response papers and finally, the Final Report. In the final deliverable, each student lays out what and how will be accomplished in the research project.

The course combines a range of assignments with readings and discussions in class. To pass the course, students must complete all its requirements. Important requirements include class attendance and participation in discussion. **Students missing more than two classes during the term will be penalized.** For that and other polices, see Instructor's Policies and Procedures handout on the Collab site. Note that you can expect unannounced quizzes in this class and a final examination. Assignments are due on time; late papers will be marked down. Always make and keep an extra paper copy of all assignments.

JOURNALS

Each student should keep a journal related to reading assignments. Journal entries should include brief summaries of the readings as well as the student's thoughtful reactions to the assignments. **A Sample Entry is posted in Collab/Resources.** The journal entries may be word processed or handwritten. If word-processed, they should be printed out as hard copies which students may use for guidance in class discussions. (NOTE that journal entries do not need to be completed for thesis-related readings such as the thesis modules.)

- Each journal entry must be prepared prior to class for which the reading was assigned, and each student should bring the journal to class.
- Prior to the beginning of some class discussion, I will briefly "inspect" randomly selected student journals.
- A student who has a journal entry for that particular class period will receive credit. A student who does not have a journal entry will receive a "0" for that day's journal.
- Grades will be distributed at mid-term, and the last week of class.

THE FLIPPED CLASSROOM

I will be conducting the class using a modification of what is known as the "flipped classroom." Twenty years ago, student use of computers in the classroom was considered revolutionary, with great potential. Unfortunately, the electronic classroom has evolved into a place that often does not encourage student interaction. In fact, it is quite frequently a room full of students looking down at electronic devices, often absorbed in non-classroom materials, instead of participating in vigorous class discussion. The flipped classroom approach, while not as revolutionary or seductive as the idea of the wired classroom model, is one

way of rectifying the faults of the electronic classroom. In the flipped classroom model, students read and prepare assigned readings or videos BEFORE each class meeting. Then during the class meeting, they discuss the assigned material WITHOUT INTERFERENCE OF ELECTRONIC DEVICES. Yes, during the class discussion all laptops, except as adaptive technology, and authorized and approved by the professor, tablets, phones, or other electronic devices are shut down! If students want to take notes, they should do so by hand.

Some of you who are addicted to your electronic devices might find the first few days to be challenging, but ultimately you should discover the value of NOT multi-tasking-of sharing ideas and really looking at your classmates! Class should be an invigorating experience-maybe even fun! Since you have only one text, take some of the money you have saved on books, and print out the essays posted on Collab and write notes on them.

Course Policies:

1. Attendance – Class participation and in-class work constitute an important part of the STS courses. It is imperative that students attend class regularly.
 - a. Class begins at the time indicated in the Course Offering Directory. A student who misses the first ten minutes of a class will be considered absent for that class, no matter the eventual time of arrival, unless there is a reasonable excuse for the delay.
 - b. Each student will be allowed two absences supported by memos during the course. Beyond that number, each absence will result in a penalty to the student's class participation grade.
 - c. Students will submit memos for all absences. A memo clearly stating the class date and the reason for a planned absence should be submitted in advance of the absence. In case of illness, a memo indicating that fact should be submitted the day that the student returns to class. Each memo should be submitted individually, either by standard e-mail or on a sheet of paper in my mailbox in the STS Office.
2. In-class Behavior-UVA's SEAS aims to produce productive professionals and strives to maintain a professional atmosphere in and out of class. Students in STS courses are expected to act as young professionals in training. Although it is not necessary to dress up for class, it is important to leave unprofessional habits outside the classroom. Caps,(unless authorized for religious or medical reasons) gum, turned on cell phones, and naps are not professional! This semester we will also be open to visitors from various organizations who are interested in seeing what we do. Also during Oral Presentations we will have invited guests, even if you are not presenting your demeanor is a factor in the overall impression.
3. Journals-Each student will keep a daily journal related to the assigned course readings/lectures. The journal entries should include summaries of readings as well as thoughtful reactions to the readings, and any questions you feel need to be answered in subsequent discussions.
 - a. Each journal entry should be prepared prior to the class for which the reading was assigned.
 - b. I will not check the journals every class. Prior to beginning of class discussions I will briefly "inspect" journal entries and require students to read their entries or prepare overheads as part of the class discussion process.
 - c. Students whose journal entries are reviewed on a particular day will receive points toward the total points rewarded during the semester for journals and quizzes. As these entries serve the same function as 'pop' quizzes, journal entries may not be submitted after the fact.
4. Papers-Hard copies of papers are due on the dates announced in class. It is extremely unfair to those students who complete their assignments on time to give other students extensions on the assignments. Consequently, the ONLY times students will be given extensions without penalty will be in extreme cases of illness, family problems, or acts of nature.
 - a. This is not a remedial class and it is assumed that students can write a solid paper. If you have problems with your writing, it is your responsibility to work on them. **Since you are being**

graded on your own work, you should not have anyone else write, edit or proofread your papers unless authorized to do so by the instructor.

- b. Late papers without proper extensions, other than the thesis report will be penalized one letter grade for each class day late.
 - c. Papers that are late as a result of problems related to word processing or photocopying will be penalized a half letter grade for the first class day late and a whole letter grade for each day thereafter.
 - d. It is possible that late papers will not be graded and returned until the end of the semester.
 - e. Late papers will be returned without written marginal comments
 - f. All thesis-related papers must be submitted; otherwise the course grade is an “F,” regardless of the quality of the submitted work. The penalties for late thesis reports are outlined in the core STS6000 syllabus.
5. E-mail-Students are requested to please use this judiciously. This is especially true of questions about ‘housekeeping.’ Check the core syllabus, and the supplemental syllabus before writing.
 6. Portfolios-Each student should maintain a portfolio of all written work. This includes notes, summaries, questions you need answered etc.
 7. Class discussion-Students are expected to participate with enthusiasm, knowledge, maturity and respect for others’ opinions. You will also be expected to lead class discussion and need to understand the process of building both group consensus and creating an atmosphere, which encourages thoroughness.
 8. Class participation grade-Attendance is only a part of this process. You can have perfect attendance and receive a low class participation grade if you fail to contribute to the class discussion. A colleague of mine loves the word ‘bloviate.’ Don’t do it! Come to class prepared to share, absorb, reflect, and summarize ideas.

The Honor System and the School of Engineering and Applied Science

The School of Engineering and Applied Science relies upon and cherishes its community of trust. We firmly endorse, uphold, and embrace the University’s Honor principle that students will not lie, cheat, or steal, and we expect all students to take responsibility for the System and the privileges that it provides. We recognize that even one Honor infraction can destroy an exemplary reputation that has taken years to build. Acting in a manner consistent with the principles of Honor will benefit every member of the community both while enrolled in the Engineering School and in the future.

As a professional, you will find that your ideas are one of the most valuable things you can contribute; your ideas and the work you develop from them are the lifeline of your professional existence. Without them, you will sink and drown. Therefore, it is critical that the individual ownership of ideas and work is held in the highest respect. Violating that ownership is the most serious academic offense, and will result in the most serious academic consequence.

You are responsible for knowing and following the University Honor Code and the STS Honor Guidelines Handout. The Honor pledge must be written out in full and signed on every submitted assignment. Papers found to be in violation of the Honor Code will be submitted to the Honor Committee without delay.

If you have questions about your Honor System or would like to report suspicions of an Honor offense, please contact your Honor Representative

Plagiarism

Plagiarism is the use of someone else's expression of an idea in such a way that it appears to be your own expression. By expression, I mean the way in which a writer chooses to portray an idea using specific words and sentences in a certain order. You are guilty of plagiarism if you do any of the following without giving credit:

- Using verbatim phrases, sentences, or paragraphs from someone else's work without indicating that the material is quoted (i.e.: without quotation marks and a correct, complete citation, including the page number).
- Presenting the conclusions of someone else's research or investigation as if it were the fruits of your own effort.
- Paraphrasing someone else's work without expressly indicating that you are paraphrasing and without crediting the work you are paraphrasing.
- Presenting a complicated idea using someone else's structure for that information, and not giving credit to that person's organizational plan.

Plagiarism is a serious offense under the Honor system, and it generally results in dismissal from the University. Whether or not you intended to cheat, it is still plagiarism. Please make sure you understand what plagiarism is and how to avoid it. If you are in doubt about the need to cite the source of an idea, go ahead and do it: one rule is to cite all facts not generally known to an educated general reader. It is better to have too many citations than not enough.

Your Well Being Is Important To Me!

The School of Engineering and Applied Science proudly serves as a safe space for its students and aims to promote their wellbeing. If you are feeling overwhelmed, stressed, or isolated, there are many individuals here who are ready and wanting to help. If you wish, you can make an appointment with me and come to my office to talk in private. The staff members in the Student Services Office, located on the first floor of Thornton Hall, are also readily accessible to talk during walk-in hours or by setting up an appointment.

Alternatively, there are also other University of Virginia resources available. The Student Health Center offers Counseling and Psychological Services (CAPS) for its students. Call 434-243-5150 (or 434-972-7004 for after hours and weekend crisis assistance) to get started and schedule an appointment. If you prefer to speak anonymously and confidentially over the phone, call Madison House's HELP Line at any hour of any day: 434-295-8255.

Summary of Student's Responsibilities

- A. Prepare for each class period
- B. Keep a journal of all course readings/lectures, and a portfolio of all written work.
- C. Keep up with the syllabus.
- D. If you miss a class, find out what you missed and make it up.
- E. Submit each assignment on its due date.
- F. Have fun!

SEAS GRADUATE ASSESSMENT REQUIREMENTS

<i>Graduate Engineering Analysis Criteria</i>
<i>Defining the problem</i> Has the student clearly stated the purpose/ goal of the analysis? Has the student adequately captured the parameters of the problem?
<i>Evaluation Criteria</i> Has the student adequately defined the measure(s) to be evaluated? Does the measure adequately represent the desired analysis goal?
<i>Analysis model</i> Has the student developed a model for performing the desired analysis? Is the model appropriate for the intended analysis?
<i>Assumptions</i> Has the student clearly articulated the assumptions? Are the model assumptions valid for the system being analyzed?
<i>Solution Approach</i> Is solution of the model well executed? Does it appear to be correct?
<i>Sensitivity or uncertainty analysis</i> Has the student considered the extent to which the results depend on the accuracy of the parameters and assumptions?
<i>Considering limitations</i> Has the student recognized the limitations and implications of the work?
<i>Graduate Engineering Design Criteria</i>
<i>Evaluation Process</i> Is there a well-defined model for evaluating the design and alternatives? Are design choices justified using a model?
<i>Solution Approach</i> Is the approach taken well executed? Does it appear to be correct? Does the student utilize appropriate professional standards?
<i>Understanding the context</i> Has the student adequately considered the broader research context in which this work appears? Has prior art been considered and evaluated?
<i>Innovation and Risk</i> To what extent is the design innovative or has the student taken a risk in applying the chosen approach?
<i>Considering limitations</i> Has the student recognized the limitations and implications of the work?
<i>Success Criteria</i> Has the student adequately defined the measure(s) of success to be used to evaluate the design? Is there a well defined metric with a goal? Does the metric adequately represent the desired success criteria?

Engineering Oral Communication Assessment

Scoring: Scoring: 5 = excellent; 3 = adequate; 1 = unsatisfactory (NA if not applicable)

Structure and Organization

Is the presentation clear, logical and organized?
Can the listener follow the line of reasoning?

Communication Aids

Do the communication aids enhance the presentation?
Are they prepared in a professional manner?
Is the information organized to maximize audience understanding?
Are the details minimized so that the main points are emphasized?
Do the graphics explain and reinforce the spoken presentation?

Technical Exposition

Is the technical material presented clearly and logically?
Is the material presented at the appropriate level of detail?
Are applications of theory included to illuminate issues?

Clarity

Is the spoken presentation clear, unambiguous and direct?
Is there excessive use of jargon, acronyms or undefined terms?

Style

Is the level of presentation appropriate for the audience?
Is the presentation a planned conversation, paced for audience understanding?
Is the speaker comfortable in front of the group?
Can the speaker be heard and understood?
Are sentences complete and grammatical and flow together easily?

Length

Is the length of the presentation appropriate to the technical content?

Interaction with Audience

Does the presenter make eye contact with the audience?
Does the presenter clarify, restate and respond to questions?
Is the presenter's personal appearance appropriate for the occasion and audience?

Engineering Technical Writing Assessment

Scoring: 5 = excellent; 3 = adequate; 1 = unsatisfactory (NA if not applicable)

Structure and Organization

Does the organization of the paper enhance understanding of the material?
Is the flow logical with appropriate transitions between sections?

Introduction, Background

Is the work properly introduced?
Is the problem well stated?
Is the background appropriate?
Is the motivation clear?

Technical Exposition

Is the technical material presented clearly and logically?
Is the material presented at the appropriate level of detail?

Clarity

Is the writing clear, unambiguous and direct?
Is there excessive use of jargon, acronyms or undefined terms?

Style

Does the writing adhere to conventional rules of grammar and style?
Are the references sufficient and appropriate?

Length

Is the length of the paper appropriate to the technical content?

Summary & Conclusions

Does the summary emphasize the relevant points?
Are the conclusions stated clearly and well justified?

Illustrations

Do the figures and tables enhance understanding of the text?
Are they well explained?
Are they of appropriate number, format and size?

Engineering Thesis or Dissertation Assessment

Scoring: 5 = excellent; 3 = adequate; 1 = unsatisfactory (or NA)

Defining the problem

Has the student stated the problem clearly, provided its motivation, and the requirements for a solution?

Analysis of previous and related work

Has the student evaluated prior/current approaches and clearly described how they are lacking?
Has the student's work been compared with previous/competing work?

Establishing success criteria

Has the student adequately defined the measure(s) of success to be used to evaluate the work?
Is there a well defined metric with a goal?
Does the metric adequately represent the desired success criteria?

Solution

Is the approach taken well executed? Does it appear to be correct? Is the work technically challenging? Does the student utilize appropriate professional standards?

Innovation and Risk

To what extent is the work innovative?
Has the student taken a risk in applying the chosen approach?

Broader implications

Has the student considered the broader implications of the work?
Broader implications may include social, economic, political, technical, ethical, business, etc. aspects.

Writing Quality

Presentation Quality

Ability to answer questions

Publication

Has the work been submitted for publication? (Score 1 - 5 on the committee's assessment of the quality of the publication record)