



Fall Semester 1396 (2017)

*Sharif University of Technology*  
*School of Mechanical Engineering, Tehran, IRAN*

**COURSE TITLE: GRADUATE SEMINAR for Mechatronics Students**

This is a **two-credit hour** graduate level course on how to prepare and deliver an effective scientific seminar. The course is designed to have minimal lecture material and provide maximum presentation practice for each student. Lecture and practice topics will include writing your abstract, searching for literature, speaking skills and preparing quality illustrations. In addition, we shall also cover methodologies for preparing a research/project proposal which may lead to a M.Sc./Ph.D. Thesis proposal.

**COURSE OBJECTIVES:**

- ❖ To prepare students to present a full scientific seminar.
- ❖ Guide students through selection of good primary journal/conference articles suitable for a seminar presentation.
- ❖ Guide students through proper presentation of data for a seminar.
- ❖ Help students develop a good speaking style suitable for a broad scientific audience.
- ❖ Guide students through proper preparation of a research/project proposal.

**TIME & CLASS:** Thursdays & Saturdays (Every other Week), SSE

**INSTRUCTOR:** Ali Meghdari, Ph.D., Professor; <http://meghdari.sharif.edu>

Tel: (021) 6616-5541, Email: [meghdari@sharif.edu](mailto:meghdari@sharif.edu)

**TEXT BOOK:** Lecture Notes, Handouts, Presentations, and Data available on the Internet.

**COURSE ASSIGNMENTS\*:** Each student will be graded on **attendance and seven class exercises:**

No.	Exercise	points
1	Presentation: Text and Data Slide	5
2	Presentation: Published Abstracts	5
3	Presentation: Introduction	10
4	Full M.Sc./M.A. Research Proposal	20
5	Presentation: Methods/Results	15
6	Presentation: Discussion/Conclusion/Acknowledgments	5
7	Presentation: Final Seminar with Abstract	30
8	Class/Seminar Attendance	10
	<b>Total</b>	100

\* Homework may be assigned and collected every session, and penalties for unexcused absences will be deducted from the gross course score to yield the final course grade.



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**Assignment 1: Text and Data Slides:** Each student will prepare **3 slides (5 minutes Max.)** that demonstrate their ability to present scientific information using **Microsoft Office PowerPoint**. All students will be provided text and data to be used for the slide design. This assignment will be used to discuss proper slide design for a formal scientific presentation based on the students' current computer ability.

**Assignment 2: Selection of Topic and Published Abstracts.** Each student must collect **three or more** abstracts from **peer-reviewed** scientific publications in an area of his/her research interest to be used as the basis of a full seminar. Full credit will be awarded only for full-text abstracts of articles published in highly valued journals/conferences within the **last five years** with appropriate citations. Students must prepare **3 slides (6 minutes Max.)** to present the three abstracts.

**Assignment 3: Presentation of Introduction.** Each student will prepare and present a **6 to 8 minutes'** seminar presentation that is an overview of the introductory material needed to provide adequate background for their research topic.

**Assignment 4:** Each student will prepare a Full Research Proposal based on the given guidelines on a topic of his/her interest with an approved faculty by SSE Graduate Committee (must contact your thesis adviser for technical advice and approval).

**Assignment 5: Presentations of Methods and Results.** Each student will prepare and present a **6 to 8 minutes'** presentation of the methods and research from the primary references that were submitted as part of the topic selection. Each presentation must include and integrate data from **at least two** peer-reviewed research articles.

**Assignment 6: Presentations of Discussion, Conclusions and Acknowledgments.** Each student will prepare and present a **6 to 8 minutes'** presentation that discusses the results presented and provides overall conclusions about the research articles reviewed in the results presentations.

**Assignment 7: Full Seminar Slide Set along with an Abstract.** Each student will submit their revised set of PowerPoint slides to be used for their final presentation in about **15 to 20 minutes**. In addition, he/she will submit a final draft of a **seminar abstract** to the instructor and his/her classmates via email.

**Assignment 8:** Each student is required to attend all class sessions. Full credit (10 points) will be given to students missing not more than 1 class. After 1 absence, 2 points will be deducted for each absence.

**COURSE POLICIES:**

**Attendance:** This course depends very little on lecture material and very heavily on class participation. Therefore, it is important that students attend all of the scheduled class meetings. Attendance will be recorded at each meeting, and *two points will be deducted from your gross course score for each unexcused absence*.

**Electronic Devices:** All electronic devices such as mobile phones, etc. ***must*** be turned off during class.

**Responsibility:** This is a graduate level class. It is time to start critically examining the information that you encounter, and incorporating it into the context of your knowledge base. It requires much effort on your part. More importantly, it requires that you take full responsibility for your learning experience. The amount that you get out of this course will depend upon the amount of work you are willing to put into it.

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Class Schedule Fall 2016

Week	Lecture Topic
1	<p>Review Syllabus, Course overview; Student Introductions. Tips and discussion of slide preparation for a scientific seminar</p> <p><b>Assignment 1:</b> Design PowerPoint slides from information and data provided by the instructor (3 slides and 5 min. Max. presentation time). <b>(Due Next Session)</b></p>
2	<p>Review and discuss student PowerPoint slides. Full class critique of slides and constructive criticism on speaking style.</p> <p><b>Handouts:</b> Speaker evaluation forms</p> <p>Tips on topic selection and how to search for research from journals. Discussion of seminar topics and selection of major papers to use as the base references for your seminar. Share tips for gathering reliable scientific information and/or literature.</p> <p><b>Assignment 2:</b> Select <b>3 Topics and Abstracts</b> from primary journals/conferences in your research area of interest. Prepare 3-slides and 6 min. Max. presentation time <b>(Due Next Session)</b></p>
3	<p>Lecture on "<b>GUIDELINES FOR PREPARING A SEMINAR/SPEECH</b>"</p> <p><b>Presentations:</b> Topics and Abstracts, and your final Seminar Topic Selection.</p> <p><b>Handouts:</b> Speaker evaluation forms.</p> <p><b>Assignment 3:</b> Prepare a 6-8 min. presentation of the introductory material needed to understand your research topic. <b>(Due Next Session)</b></p>
4	<p>Lecture on "<b>How to Prepare a Research/Project Proposal</b>"</p> <p><b>Presentations:</b> Introductory material for your topic (6-8 min per student).</p> <p>Full class critique of slides and constructive criticism on speaking style.</p> <p><b>Handouts:</b> Speaker evaluation forms</p> <p><b>Assignment 4:</b> Prepare a Full Research Proposal based on the given guidelines on a topic of your interest with an approved faculty adviser. <b>(Due on Final Session copied on a CD)</b></p>
5	<p><b>Presentations:</b> Introductory material for your topic (6-8 min per student).</p> <p>Discussion on critiquing your classmates (Content first and form second)</p> <p>Full class critique of slides and constructive criticism on speaking style.</p> <p><b>Handouts:</b> Speaker evaluation forms</p>

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6	<p><b>Presentations:</b> Introductory material for your topic (6-8 min per student). Review and Discussion of one or two Research Proposals, and/or:</p> <p style="text-align: center;"><b>"Invited Speaker giving a Scientific Presentation"</b></p>
7	<p><b>Individual student conferences on Assignment # 4.</b> (6 minutes Presentation per student), Faculty selection and General topic of your proposal must have been finalized by this date. Class discussion of presentations and proposals.</p>
8	<p style="text-align: center;"><b>"Sample Presentation of a Scientific Seminar by the Instructor"</b></p> <p>Overview of presenting methods and results.</p> <p><b>Assignment 5:</b> Prepare a 6-8 min presentation of the Methods and Results from at least two journal/conference articles pertinent to your research topic (for Verification and/or Validation purposes). <b>(Due Next Session)</b></p>
9	<p>Overview of presenting methods and results.</p> <p><b>Presentations:</b> Methods/Results (6-8 min/person). Full class critique of slides and constructive criticism on speaking style.</p> <p><b>Handouts:</b> Speaker evaluation forms</p>
10	<p><b>Presentations:</b> Methods/Results (6-8 min/person). Full class critique of slides and constructive criticism on speaking style.</p> <p><b>Handouts:</b> Speaker evaluation forms</p> <p><b>Assignment 6:</b> Prepare a 6-8 min presentation of the Discussion, Conclusions, and Acknowledgments for your research topic. <b>(Due Next Session)</b></p>
11	<p><b>Presentations:</b> Discussion, Conclusions, and Acknowledgments (6-8 min per student). Full class critique of slides and constructive criticism on speaking style.</p> <p><b>Handouts:</b> Speaker evaluation forms</p>
12	<p><b>Presentations:</b> Discussion, Conclusions, and Acknowledgments (6-8 min per student). Full class critique of slides and constructive criticism on speaking style.</p> <p><b>Handouts:</b> Speaker evaluation forms</p> <p><b>Assignment 7:</b> Prepare an Abstract for your complete seminar. Also, revise and compile all seminar materials to reflect a <b>15-20 minutes Final Presentation. <u>Due on Final Session copied on a CD.</u></b></p>
13 and 14	<p><b>Final Exam:</b> Student conferences to review their Final Seminar</p> <p><b>Presentations: The Final Seminar.</b> Full class critique of slides and constructive criticism is required. <b>(15-20 minutes per student)</b>, Discussions and Evaluations.</p> <p><b>Handouts:</b> Speaker evaluation forms</p>

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