

*In the Name of Allah*

# **MECHATRONICS GRADUATE SEMINAR**

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**School of Science and Engineering  
Sharif University of Technology  
International Campus, Kish Island**

**Thursdays: 6:00-7:30 PM**



- **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.**



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

No.	Exercise	points
1	Text and Data Slide Preparation	5
2	Published Abstracts	5
3	Presentation: Introduction	10
4	Full Research Proposal	20
5	Presentation: Methods/Results	15
6	Presentation: Discussion/Acknowledgments	5
7	Abstract draft Full seminar slides set with abstract	30
8	Class/Seminar Attendance	10
	<b>Total</b>	<b>100</b>



**Assignment 1: Text and Data Slides:** Each student will prepare two slides 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**.

**Assignment 3: Presentation of Introduction.** Each student will prepare and present an eight to ten-minute 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 (must contact the Program Director for approval).

**Assignment 5: Presentations of Methods and Results.** Each student will prepare and present an eight to ten-minute 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, and the two presentations must be distinct.

**Assignment 6: Presentations of Discussion, Conclusions and Acknowledgments.** Each student will prepare and present an eight-ten-minute 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 be 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 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.





# Center of Excellence in Design, Robotics and Automation

Week	Date	Lecture Topic
1	02/15/2007 (11/26/1385)	Review Syllabus, Course overview; Student Introductions.
2	02/22/2007 (12/03/1385)	Tips and discussion of slide preparation for a scientific seminar <b>Assignment 1:</b> Design PowerPoint slides from information and data provided by the instructor on Work and Kinetic Energy. <b>Send by e-mail to:</b> <a href="mailto:meghdari@sharif.edu">meghdari@sharif.edu</a> by 5 PM on Tuesday 12/08/1385
3	03/01/2007 (12/10/1385)	Review and discuss students PowerPoint slides. <b>(5 minutes presentation for each student)</b>  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.  <b>Assignment 2:</b> Select <b>3 abstracts</b> from primary journals/conferences in your research area of interest. <b>Send by e-mail to:</b> <a href="mailto:meghdari@sharif.edu">meghdari@sharif.edu</a> by 5 PM on Tuesday 12/15/1385



Week	Date	Lecture Topic
4 & 5	03/08/2007 (12/17/1385)  (6:00 to 8:30 PM)	<p>Lecture on "<b><i>How to Prepare a Research/Project Proposal</i></b>"</p> <p><b>Assignment 3:</b> Prepare a <b>6-8 min presentation</b> of the introductory material needed to understand your research topic.</p> <p><b>Send by e-mail to:</b> <a href="mailto:meghdari@sharif.edu">meghdari@sharif.edu</a> by <b>5 PM on Tuesday 01/21/1386</b></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 (by program Director) faculty. <b><i>Due on 03/17/1386 copied on a CD.</i></b></p>
6 & 7	04/12/2007 (01/23/1386)  (6:00 to 8:30 PM)	<p><b>Presentations:</b> Introductory material for your topic: <b>(6-8 minutes presentation per student, 3-5 Slides Max.)</b>.</p> <p>Overview of preparing an introduction for a scientific seminar. Discussion on critiquing your classmates <b>(Content first and form second)</b> Full class critique of slides and constructive criticism on speaking style.</p> <p><b>Handouts:</b> Speaker evaluation forms</p> <p><b>"Invited Speaker: Prof. F. Farzaneh of Electrical Engineering"</b></p>



Week	Date	Lecture Topic
8	04/19/2007 (01/30/1386)	<b>Individual student conferences on Assignment # 4. (5 minutes Presentation per student)</b> , Faculty selection and General topic of your proposal must have been finalized by this date.
9	04/26/2007 (02/06/1386)	<b>“Invited Speaker: Prof. J. Salehi of Electrical Engineering”</b>
10	05/03/2007 (02/13/1386)	Class discussion of class presentations, and proposals. Overview of presenting methods and results. <b>Assignment 5:</b> Prepare an 8-10 min presentation of the methods and results from at least two journal/conference articles pertinent to your research topic. <b>Send by e-mail to:</b> <a href="mailto:meghdari@sharif.edu">meghdari@sharif.edu</a> by 5 PM on Tuesday 02/18/1386.
11	05/10/2007 (02/20/1386)	Overview of presenting methods and results. <b>Presentation</b> of methods/results ( <b>8-10 min per student</b> ). Full class critique of slides and constructive criticism on speaking style.



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Week	Date	Lecture Topic
12	05/17/2007 (02/27/1386)	<b>Presentation</b> of methods/results (8-10 min/person). Full class critique of slides and constructive criticism on speaking style. <b>Assignment 6:</b> Prepare an 8-10 min presentation of the discussion, conclusions, and acknowledgments for your research topic. <b>Send by e-mail to: <a href="mailto:meghdari@sharif.edu">meghdari@sharif.edu</a> by 5 PM on Tuesday 03/01/1386.</b>
13	05/24/2007 (03/03/1386)	<b>Presentation</b> of discussion, conclusions, and acknowledgments ( <b>8-10 min per student</b> ). Full class critique of slides and constructive criticism on speaking style.
14	05/31/2007 (03/10/1386)	<b>Presentation</b> of discussion, conclusions, and acknowledgments ( <b>8-10 min per student</b> ). Full class critique of slides and constructive criticism on speaking style. <b>Assignment 7:</b> Prepare an abstract draft for your complete seminar. Also, revise and compile all seminar materials to reflect a <b>15-20 minutes presentation. Due on 03/17/1386 copied on a CD.</b>
15 & 16 & 17	06/07/2007 (03/17/1386)  (5:00 to 8:30 PM)	<b>Final Exam:</b> Student conferences to review final Seminar  <b>Presentation</b> of the full seminar. Full class critique of slides and constructive criticism is required. ( <b>15-20 minutes per student</b> ) Discussion of class presentations.

