APRIL/MAY 2009 |M²EGS_ NEWS
Mechanical and Manufacturing
Engineering Graduate Studies Newsletter

M²S-NEWS

[Volume 1, Issue 5]

CSME and ASME Membership

It is with pleasure that we announce membership of 22 of our graduate students to the Canadian Society of Mechanical Engineering (CSME) and the American Society of Mechanical Engineering (ASME). This initiative is part of our effort to increase visibility and engage our graduate students in professional societies.

Congratulations to the following graduate students who are now registered as student members of ASME and CSME:

Sherif Fahmy
James Kofi Arthur
Daniel Asrat Balcha
Alastair Komus
Richard Lozowy
Amin Yazdanpanah
Nasim Norouzi
Nasr Al-Hinai
Jeremy Langner
Vikram Banthia
Xiumei Kang

Kurosh Zarei-nia
Amir Asadi
Amir Khorsand
Amir Birjandi
Moftah Mohamed
Jonathan Tsikata
Darryl Stoyko
Son Qing Shan
Andrea Kraj
Christofer Iyagun
Ehsan Jalayeri

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How to Talk to Professors

Norma Godavari
Head, Donald W. Craik
Engineering Library

It is a little acknowledged fact that engineering faculty members were once as old as you, an eager engineering student, and they didn't even have a full understanding of their future special spectra of engineering illumination. How do you think they made it as far as they did? Since they weren't born with a full-text geeky left brain, they must have acquired this knowledge somehow. Want to bet that they talked with their advisors - a lot? It's something you should get used to doing too – and teaching those same profs how to relate to your changed and changing information needs. Everybody learns, even if they have a Ph.D.

Talking with profs is a multi-dimensional street these days with many venues: email, twitters, blogs, hallway or classroom discussions, formal or informal meetings, phone calls, etc. What works best for you? For the profs? Here are four suggestions.

Suggestion number 1: know yourself and how you learn best. There are many web sites that will tell you about your learning style:
http://usd.edu/~bwjames/tut/learning-style/
or
www.berghuis.co.nz/abiator/lsi/lsiframe.html

Engineers tend to be visual learners, so, for example, see the article, "Learning style preferences of engineers in automotive design," in the
Journal of Workplace Learning, v13 n6 p239-245
http://www.emeraldinsight.com/Insight/viewContentItem.do?contentType=Article&contentId=882227
or

Writing Tips

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1. Respect paragraphs.

The paragraph is the basic unit of writing. A paragraph may be long or short, but its content must focus on a single point or thought. The first sentence of each paragraph announces that thought, while the last one usually summarizes it. When you shift to a new point, start a new paragraph. Indent every paragraph so that the reader knows that a new paragraph is beginning.

2. Motivate your reader.

Speak to the reader. Explain the background and motivation for your work in a logical and coherent manner. Stress those points that motivated you to pursue the work and that make the work interesting. Have a "story line" outlined in your mind, and tell it through a series of paragraphs that follow in a logical sequence. Stress how your paper goes beyond earlier work in the field. Be generous in giving credit to prior researchers.

3. Write clearly.

What seems perfectly clear to you may be confusing to the reader. In fact, it is extremely difficult to write so that you cannot be misunderstood. Therefore, you must make an extra effort to write so that your ideas and developments are as clear as possible. It often helps to envision your audience as you write. Although you have thought about your research for months or years, it helps to view the reader as someone who just walked into the room and has no idea what you are talking about. You can never write too clearly.

4. Provide sufficient detail.

Give the reader enough detail to understand and reconstruct your results. Skip trivial steps, but provide enough "stepping stones" so that readers can understand your techniques and reconstruct your thought process, procedures, and results.

5. Clarify your assumptions.

Make sure the reader knows what you are assuming at each point in the paper. Specify which assumptions are global

... Writing Tips

(throughout the paper), and which are local (only in effect in that section or for a given result). To characterize the generality of your results it is also sometimes helpful to clarify assumptions that you are *not* making.

6. Use impeccable logic.
Every statement of a mathematical nature (and others as well) must have absolutely precise logic. For example: what is assumed, what are the consequences, how are the variables qualified ("there exists" versus "for all"), what is necessary, and what is sufficient.

7. Choose good notation.
Choose attractive, informative, natural notation to give the paper a "clean" feel, and to help the reader grasp the formulas. It is acceptable to abuse notation from time to time as long as you know that you are doing it, it causes no harm, and you tell the reader.

8. Choose good terminology.
Choose your terms and phrases with extreme care, and use them consistently and with precision. It is always helpful to give names to ideas, methods, techniques, and procedures so that you can use those names throughout the paper. Do not vary your terminology, since that only leads to confusion. Do not worry about sounding repetitive, since the aim is write a scientific paper with clarity and precision.

9. Use correct grammar and punctuation.
Understand sentence structure, and use it correctly. Watch out for subtle grammatical errors such as shifts in tense, mode, and voice or the lack of parallel structure. Know all the rules of punctuation. Pay attention to commas, especially in compound sentence structure and clauses.

10. Display your results accurately, informatively, and aesthetically.
Construct figures that make a point or illustrate a result. Display the data in an attractive way that allows the reader to quickly grasp the content. Be sure that all axes are labeled with variables and units, and that a legend explains all traces and points in plots. Write figure captions that summarize the significance of the plots.

In next issue, we will feature Dr. Bernstein's comprehensive article on "Precision Writing".

Library News, Cont.

"Using Learning Styles Theory in Engineering Education," in the European Journal of Engineering Education, v33 n4 p415-424 Aug 2008 http://www.informaworld.com.proxy2.lib.umanitoba.ca/smpp/content~content=a902571711~db=all

There's also a useful web site, "Learning Styles," that provides some links to tests and covers publications by Dr. Richard Felder, a noted engineering educator (Google his name and find out more about him and his work) at http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Learning_Styles.html

Suggestion number 2: get to know your advisors and their interests. Open a dialogue with them; you may find that they are quite human after all (most are, by the way). You should tell them if you have any concerns as they *need* to know if there's anything that's not being addressed adequately. Who else can do it but you? They only see their side. Note: if you happen to hit upon their particular subject spectra, and since they have a kind of obsession with their specialties, they can overwhelm you with specifics. Be prepared! and learn!

There are several ways to learn about a professor. The Engineering Library has copies of the *SEEQ Instructor Course Evaluation* which evaluates their teaching and their courses. As well, there's a web site: "Rate Your Professors," which is international, but limiting as anyone is able to add comments: http://www.ratemyprofessors.com/

But the best way to know more about them is to actually talk to them and form your *own* opinion.

Library News, Cont.

Suggestion number 3: get a working knowledge of your topic so you can impress them and not sound like a total neophyte (if you are, check your textbooks first). Plus, it will help you understand their responses, which can be, well, extremely detailed (they are uber-knowledgeable about their obsession after all).

Suggestion number 4: keep a journal of your meetings; summarize stuff as you go along. Hey, you have to do this anyways as engineers, so why not start the habit early and document your discussions? Remember that you can use them as citations in your papers.

As you progress through your degree, know that there are many resources to help you with your communications; the Engineering Library has many books on writing your thesis, giving presentations or posters, and dealing with your advisors. Drop by!

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Your Feedback about 2008/09 SEMINAR SERIES

Aspects that you liked most:

• Interesting presentations that I would not have been exposed to, otherwise • Good to get feedback on your presentation before the defense • It was very well organized • Probably the best organized since I have started attending these seminars • Excellent tool for learning about the research being conducted in the department • The refreshments were a nice touch • Large variety of talks • Regular attendance • Very friendly environment • We received topics every week by e-mail • Inviting professors or external persons (guest speakers) to talk was a very good idea • Introduction about background of persons and their country and ... were good. - it worked as a good ice breaker too • Evaluating the graduate students by a number of faculty members helped in understanding the strength and weaknesses, so that a better presentation can be delivered next time.

Aspects that you like to see improvement:

• No guidelines for student presentations given prior to the presentation day • Some seminars were too long • More presentations by faculty or invited (industrial) persons would be desirable • Too few faculty members attended the seminars • There were delays in starting the seminars • It's really a shame to rush some of the presentations or question periods • More presentations by students who have completed the seminar course would be nicer • It would be good if we had the chance to learn about using some services like Jump … in one of the seminars • Seminar about writing thesis paper would be beneficial • Rate presentations and show results in a table.