

ELET 6100 Seminar in Technology

How to do Research?

Sept. 6th, 2006

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Engineering Technology

Fall 2006

Most of the slides are adapted from from Dr. M.H.Dunham's slides.

TECH 6100 Engineering Technology Graduate Seminar

Class Time and Location: W 12pm - 1pm T2 201

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Office Hour: Email to set appointment

Course Website:

<http://www.tech.uh.edu/faculty/yuan/TECH6100/>

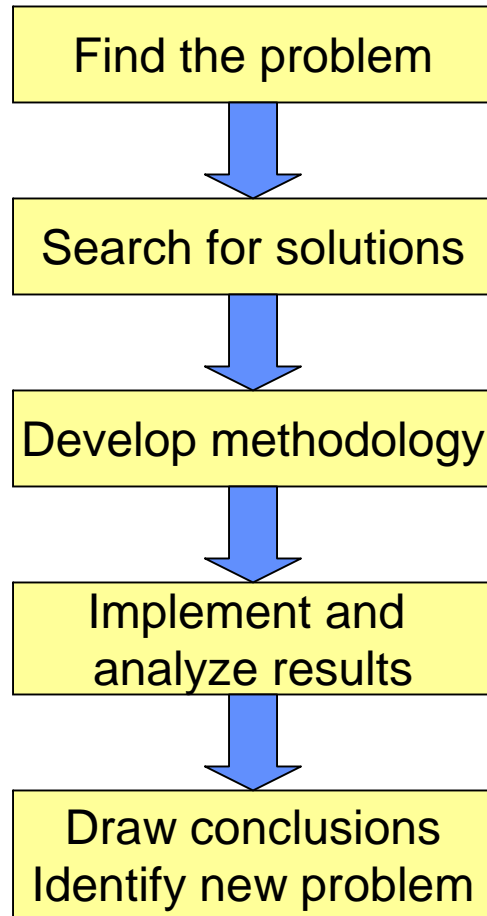
Course Outline

- Course Objective:
 - The course introduces the students to various research opportunities and methods, presentation techniques and styles, formal article writing, prospectus design and defense, and thesis format.
- Grading:
 - Students will be expected to attend all meetings and participate in class for 25% of the grade. There will be several opportunities to complete reading assignments, write summaries and/or make presentations to the class for 25% of the grade. Presentations made early in the semester will weigh less. A final presentation of a thesis prospectus will count 50% of the grade.
- Practicum course:

How to do Research?

- How to do research
- References/Citations
- Plagiarism
- Miscellaneous Issues
 - Reading a research article
 - Authoring a paper

Research Cycle



Problem Statement
Object Identification



Motivation, Literature Review



Methodology
Evolutionary Computation:
Optimization



Experimentation
Synthesis images, real images



Conclusions
Conclusions and future research

Web Resources

- Google

www.google.com

- Research Index

www.researchindex.org

- Computing Reviews

<http://www.reviews.com/home.cfm?style=simple&targetpage=>

- ACM Computing Surveys

<http://www.acm.org/surveys/>

- Science Citation Index

<http://www.isinet.com/products/citation/sci/>

Professional Organizations

- IEEE CS

<http://www.computer.org/>

- ACM

<http://www.acm.org/>

- Online Bibliographies

- ACM/SIGMOD DBLP

<http://www.acm.org/sigmod/dblp/db/index.html>

UH Libraries

- Online Resources

<http://library.uh.edu/>

- Interlibrary Loan

<http://illiad.lib.uh.edu/illiad/illiad.dll>

- IEEE Explorer

<http://ezproxy.lib.uh.edu/login?url=http://ieeexplore.ieee.org/servlet/opac?punumber=101>

Search Strategies

- Keyword
- Author
- Title
- Citations
- Precision vs. Recall
- Be careful!
 - Exact phrase
 - Full text vs title vs abstract
 - Each techniques searches from a different set

References

- Use reference to direct to literature
- Use reference if the idea is not your own
- Use quotes and citation if you actually used the exact words
- Don't forget to use citations on figures and tables

Reference Format

- Include all information necessary to find article and give complete credit
- Exact format varies from publication to publication
- IEEE format for references
- ACM reference format:
http://www.computer.org/portal/site/ieeecs/menuitem.c5efb9b8ade9096b8a9ca0108bcd45f3/index.jsp?&pName=ieeecs_level1&path=ieeecs/publications/author/style&file=refer.xml&xsl=generic.xsl&
- Citing Web resources

Plagiarism

- “to take (ideas, writings, etc.) from (another) and pass them off as one’s own.” ¹
- A Campus Fad That's Being Copied
<http://www.nytimes.com/2003/09/03/education/03CHEA.html?th>
- Download. Steal. Copy. Cheating at the University.
http://www.dailypennsylvanian.com/vnews/display.v/ART/2001/11/27/3c03502bad345?in_archive=1
- Ann Lathrop and Kathleen Foss, *Student Cheating and Plagiarism in the Internet Era A Wake-Up Call*, Libraries Unlimited, In., Englewood, Colorado.

¹ Webster's New World College Dictionary Fourth Edition, Michael Agnes Editor in Chief, 2001, IDG Books World wide, Inc, Foster City, California.

***When in Doubt -
CITE***

Reading an Article

- Forest or Trees

- Do you need to read it in detail?
- Why are you reading it?
- What will you remember?

- Example:

Hal Berenson, Phil Bernstein, Jim Gray, Jim Melton, Elizabeth O'Neil, Patrick O'Neil, "A Critique of ANSI SQL Isolation Levels," *Proceedings of the ACM SIGMOD Conference*, 1995, pp. 1-10.

Authoring a Paper

- Whom to Include as author
 - Include only someone who actually contributed to the paper
- NEVER include someone without their knowledge
- NEVER include someone who did not work on paper
- Include acknowledgements where appropriate