PRACTICAL GUIDANCE FOR MSSE THESIS (AND SCHOLARLY PAPER) DEVELOPMENT
(12/16/18)

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**Failure to follow the guidance provided in the last slide
will likely result in a failure to graduate when you expect!**

AGENDA

- Briefing Purpose
- References
- Deadlines
- Format Suggestions
- Content Suggestions
- Suggested Development Approach
- Example Schedule
- **KEY POINTS**

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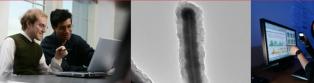UNIVERSITY OF MARYLAND

BRIEFING PURPOSE

- Students often:
  - Do not know where to go for guidance on development of their thesis or scholarly paper
  - Are surprised by deadlines
  - Do not understand the review process and its schedule implications
  - Do not understand how soon they need to begin work on their thesis or scholarly paper
- The purpose of this briefing is to provide students guidance on the development of their Master's Thesis or Scholarly Paper and to ensure that they are aware of the deadlines and their implications
- While the briefing focuses on the development of a Master's Thesis, it is generally applicable to a

THESIS (AND SCHOLARLY PAPER) REFERENCES

- Deadlines:
http://www.gradschool.umd.edu/current_students/deadlines_for_graduate_students.html

- Thesis Policy:
http://www.gradschool.umd.edu/catalog/masters_degree_policies.htm#12

- Thesis (ETD) Style Guide:
http://www.gradschool.umd.edu/current_students/etd_style_guide.html

- Thesis Template: https://gradschool.umd.edu/students/academic-progress/thesis-and-dissertation-filing

- Citation Style Guide (Engineering): http://www.lib.umd.edu/tl/guides/citing-styles

- Access to past UMD MS Theses: http://drum.lib.umd.edu/

- University Writing Center: http://www.english.umd.edu/academics/writingcenter

- **The Thesis Policy, Style Guide, and Citation Style Guide are applicable to Scholarly Papers as well.**
- **Students may view examples of past theses via http://drum.lib.umd.edu/.**
- **Scholarly papers generally follow the format of theses, but are shorter.**

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DEADLINES

- Fall, Spring, and Summer semesters have different deadline dates that **change a bit each year**

- The following list of **Spring 2019** deadlines are provided to give you a sense of **what forms and products need to be submitted** and **roughly** when in a semester each is due
  - **Make sure you consult http://gradschool.umd.edu/calendar/deadlines/academic-deadlines for the deadlines applicable to the semester and year you plan to graduate**

- Example (Spring 2019) deadlines:
  - Feb 8, 2019: Submit to the Registrar
    - Application for Graduation (Thesis (T) & Non-Thesis (NT))
  - Mar 1, 2019: Submit to the Registrar
    - Nomination of Thesis Committee Form (T only)
  - Apr 23, 2019: Submit to Registrar
    - Report of the Examining Committee (T only)
    - Submit approved Thesis via DRUM (T only)
    - Electronic Thesis and Dissertation Publication Form (T only)
  - Jun 4, 2019: Submit to the Registrar
    - Approved Program Form w. uAchieve printout (T & NT)

Notes:
- **You should submit these documents AT LEAST 1 week PRIOR to deadline to ensure you get the needed signatures (people may be sick , out of town, or otherwise unavailable)**
- **The student is responsible for getting these forms to the Registrar's Office.**
- **The Registrar's Office closes at 4:30.**

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GOA THESIS/SCHOLARLY PAPER ASSESSMENT CRITERIA

- Student's knowledge of the literature relevant to their thesis topic is sufficient: ___
- Thesis/paper clearly states research problem: ___
- Student applied appropriate research techniques: ___
- The thesis/paper correctly describes and interprets the results: ___
- The results of the work advance knowledge in this research area: ___
- The thesis/paper is clearly written: ___

GENERIC FORMAT SUGGESTIONS

- **Main Body:**   ~50-100 pages
  - Introduction (Problem & Motivation)
  - The Approach
  - The Work/Results
    - Examples of key intermediate products and results
  - Conclusion (& Future Research)

- **Appendices/Annexes:**   Whatever it takes
  - Supporting documentation
  - Detailed Architecture
  - Detailed Analysis
  - Code

- Caveats:
  - **This is generic guidance**
  - See the referenced Thesis (ETD) Style Guide
  - Each Thesis will be different
  - **The advice that matters is that provided by your advisor**
  - **Make sure you get the advice of your advisor at least 8 months prior to your intended graduation date**

- **These suggestions apply to scholarly papers as well.**
- **Scholarly papers are generally about half the length of theses.**

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GENERIC CONTENT SUGGESTIONS (DESIGN THESIS)

- User Requirements
- System Requirements
- Requirements Validation
- System Architecture (SysML)
  - System Structure Model(s)
  - System Behavior Model(s)
  - Allocation of Functions to Elements
- Identification of Key Metrics and Factors
- Performance/Response Models and Analyses
- Design Trade-off Analyses
- System Design
- Design Verification
- Design Validation

- Caveats:
  - **This is generic guidance**
  - Each Thesis will be different
  - This guidance is most appropriate for "design-oriented" Theses
    - It demonstrates a grasp of a MBSE approach to problem solving
    - One does not have to include ALL these artifacts
  - This content suggestion may not be appropriate for other kinds of Theses
  - **The advice that matters is that provided by your advisor**
  - **Make sure you get the advice of your advisor at least 8 months prior to your intended graduation date**

These suggestions apply to scholarly papers as well

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SUGGESTED DEVELOPMENT APPROACH

- Thesis Annotated Outline (~5% done)

- Thesis Rough Draft (50% done)

- Thesis Final Draft (75% done)
  - Submit to Advisor AT LEAST 4 weeks prior to submission to committee

- Submitted Final Thesis (90% done)
  - Submit to Committee AT LEAST 2 weeks (technically 7 "working days") prior to the defense

- Accepted Final Thesis (100% done)

These suggestions apply to scholarly papers as well.

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EXAMPLE THESIS/SCHOLARLY PAPER SCHEDULE*
(FOR 2016 SPRING GRADUATION)

- **SD-34 weeks (Sept 2 or earlier):   Have an Advisor**
- SD-28 weeks (Oct 14):   Begin writing Annotated Outline
- SD-25 weeks (Nov 4):   Complete Annotated Outline (to Advisor)
- SD-17 weeks (Jan 2):   Complete Rough Draft (to Advisor)
  - Identify committee members (or scholarly paper reader) & set tentative date
- SD-9 weeks (Feb 26):   Submit Final Draft Thesis (or Scholarly Paper) to Advisor
  - Advisor Reviews
  - You Make Corrections to Thesis & Develop Presentation Slides
  - You reserve room and order food
- SD-5 weeks (Mar 29):   Submit Final Thesis to Committee (or Scholarly Paper to Reader)
                          Submit Presentation Slides to Advisor
  - Committee Reviews Thesis
  - You Finalize Presentation Slides with Advisor
- SD–2 weeks (Apr 12):   Thesis Examination/Defense
                          (Feedback from Scholarly Paper Reader)
  - You Make Corrections to Thesis (or Scholarly Paper)
- **SD (Apr 26): Submit Accepted Final Thesis to Registrar**
       (Submit Scholarly Paper to Director, Systems Engineering Education)

SD = Submission Deadline

* This is a "success-oriented" (optimistic) schedule

MATERIAL FOR THESIS EXAMINATION/DEFENSE

- 6 weeks prior to defense:
  - Reserve Room
  - Arrange for snacks (food & drink)
- 2 weeks prior to defense:
  - Final Thesis (approved by Advisor) to committee
- Day of Examination:
  - Provide hard copy of presentation slides (approved by Advisor) to all committee members at the start of the defense

KEY POINTS

- YOU MUST:
  - **Meet the deadlines referred to on Slide 5** (you need to check specific dates for the semester/year you plan to graduate).
  - Provide your thesis **to your advisor** to review AT LEAST 6 WEEKS PRIOR to your defense.
  - Your **advisor-approved thesis** must be provided to **your committee members and myself** (Dr. John MacCarthy) for our review **AT LEAST 10 WORKING DAYS prior to your defense**.
- The first few slides of your defense presentation should address:
  - What problem you solved.
  - What you did that was new/original.