**Introduction**

CPS 300: Introduction to Graduate Study  
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**Course format**

- See website ([http://www.cs.duke.edu/courses/fall09/cps300/](http://www.cs.duke.edu/courses/fall09/cps300/)) for details
- Class meetings: Wednesdays 4:25-5:40 pm  
  - We might not meet every Wednesday—check schedule on website for details
- Talks in the department: check dept. event calendar ([http://www.cs.duke.edu/events/](http://www.cs.duke.edu/events/))
  - Local TCSDLS: "must" attend
  - Telecast TCSDLS and dept. colloquia: "should" attend
- C/NC grading: class participation + satisfactory completion of assignments  
  - No exams
  - Watch for email announcements!

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**Goal & content**

- To help you get started in Duke CS, and most importantly, on research  
  - Faculty are here to inform and advice
  - But nobody can really "teach" you how to do research
- Essential tools for scholarly work  
  - E.g., LaTeX, BibTeX, Xfig, Matlab, ...
- Advice on graduate life and research  
  - E.g., find/keep advisors, read/review/write papers, give talks, find internships, attend conferences, weathering highs and lows of research, ...
  - I am open to your suggestions on what to cover

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**PhD program requirements**

- Read the Requirement and Addendum docs  
- BTW, grad curriculum may undergo some changes soon  
  - You have "grandfather clause" protection

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**Important points**

- Rules are rules
- Deadline ≠ suggested completion time  
  - Beware of lead times
- Keep the DGS office informed
- Research pretty much trumps everything else
- Take responsibility for yourself
- Advice from senior grad students are valuable, but always consult with the DGS for the authoritative interpretation of requirements

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**Must vs. should**

- For a general discussion, see IETF RFC 2119
- Must (not)/required/shall (not)  
  - If you break these rules, I cannot help you
- Should (not)  
  - There may exist valid reason in particular circumstances when particular behavior is acceptable
  - The DGS office will seek a detailed, official explanation from you and approve (or disapprove) the request
  - Don't wait until last minute to request
  - Requests, explanations, and decisions will be documented
**Fictional PhD student X**

**Year 1**
- Take lots of courses and get A's, like I always did!
- Courses and TA take loads of time
  - But no time is wasted—I am taking care of requirements!
- Met with a couple of faculty members, got some papers to read, but didn't really have the time...
  - I think I am going to work with Prof. A... In the worst case I guess I could still work with Prof. B...

**Summer 1**
- Why won't these stingy profs fund my summer?
- So what, I got a well-paid internship in a big city!
- Phew... Too much coding and bar hopping left me tired
- Well... Prof. A is traveling and I have nobody to report to anyway

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**Fictional PhD student X (cont’d)**

**Year 2**
- I still haven't named an advisor yet—Prof. A's hands are full
  - Threatening email from the DGS; panic...
  - Curse the other student whom Prof. A did take...
- Thank God Prof. B took me! But proposal in a month? Panic...
- Proposal half-baked; committee wants extra progress review?
  - Scramble to pass progress view, but Prof. B didn't think I'd be ready for the final review by the end of spring
- Beg the DGS to extend deadline to summer
- Prof. B tells me to "prove myself" in the summer or else I won't get funding in the fall—help!!!

**Summer 2**
- How come other 2nd-years get cool internships at research labs, while I get to stay and finish my RIP?!

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**What went wrong?**

- After all, didn't student X (sort of) meet most deadlines?
- Know your priority in the beginning years
  - Research \(\Rightarrow\) (courses, TA, internship in summer 1)
- Don't count on good results to come up in just 2 semesters
  - Spreading effort over a longer period of time is less risky \(\approx\) dollar-cost averaging
- Communicate clearly with your (potential) advisor and the DGS office
  - Get him or her to commit; don't assume anything
- Plan ahead, and assume responsibility for yourself

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**A more reasonable schedule**

**Year 1**
- Pass 3 (or at least 2) out of 4 quals
- Concentrate on courses in your area (or related areas)
- Do projects that will impress your potential advisors
- TA in spring
- Talk to faculty in fall; attend seminars, group meetings
- Dive into RIP; best if you can decide the topic and do proposal before summer (required for early RIP initiative)

**Summer 1**
- Whatever you do, stay in touch with your RIP advisor
- If you have started working closely with your advisor, you may be offered an RA in the summer
  - Early RIP initiative makes it easier for advisors to fund you
  - Take it—at this stage it's often better than a higher-paid coding job

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**Reasonable schedule cont’d**

**Year 2**
- Pass the remaining quals
- Concentrate on courses useful to your research
  - Follow your advisor's advice
  - No need to meet all course requirements yet
- TA in fall or spring; may even be deferred or waived
- Full speed ahead with your RIP
  - Goal: a publishable piece of work
    - With early RIP initiative, you are expected to wrap up in fall
    - Otherwise, proposal in early fall and wrap up in spring
  - Confirm future advising/funding arrangement with your advisor

**Summer 2**
- Continue working with your advisor, to get a head start on prelim
- Or, find an internship relevant to your research
  - Use your advisor's connection
Reasonable schedule cont’d

Year 3
- In fall, decide on your dissertation direction
- Wrap up your course requirements
- Again, consult with your advisor for classes to take
- Obtain initial results, and publish more papers on the way
- In spring, get your committee together, and write/defend your prelim
- Dissertation proposal is part of in your prelim
- Can defer up to a year, but need to make formal request and get approval by the Dean of Graduate School
- Extensions beyond Year 3.5 are rarely granted

Reasonable schedule cont’d

Years 4 to n – 1
- Research, research, research...
- No need to shun courses; take/audit them to expand your horizon and stay up-to-date

Year n
- Your last spring will be packed by interviews, writing, and defense
  - Job hunting starts earlier and takes more time than you think
  - For academic jobs, applications start in late fall
- Get bulk of your work done before last fall!

MS requirements
- 30 units, including 24 graded coursework
  - RCR and CTN don't count; GS300/301/302/320/321 count towards credits but not graded coursework
  - Must include 24 (~ 8 courses) in CS or related fields
  - Up to 6 units can be transferred after completing 12 units, but they don't reduce the 30-unit requirement
- Find an advisor and declare an area of concentration
- You need to name your advisor by the end of Year 1
- Allocate enough time for your MS project/thesis
  - Don't expect to finish a good project in a semester
  - Start early—preferably in your second semester
  - Although the Department does not fund MS students, you might find RA work on the projects you work on

Some reminders
- Department annual meeting & picnic this Friday at 4:30pm
  - Be sure to attend!
- Drop/add runs through 5pm next Friday, September 4
  - Again, remember that courses are a means to an end
  - Taking fewer courses and impress the professors > taking lots of courses and do okay in them
  - 3 CS courses + 300 is perfectly good load which leaves you more time to begin research

Some announcements
- Homework assignment (due next Wednesday by email)
  - Which schools were you admitted to?
    - Optional, in case you don't want us to know
  - Why did you choose Duke?
  - What would you like to hear/learn more about in CPS 300?
- Next week
  - On working with your advisor
  - On finding/reading/evaluating papers