CSE 6001: Intro to the CSE PhD (Fall 2017)

Rich Vuduc

Georgia Institute of Technology
richie@gatech.edu

Your research will be judged not just by what you say and do, but how you say and do it. Your technical electives teach you "the what." This course is about "the how."

Note that "the how" includes how to frame your work, how to write about it, how to present it, and how to carry out your work in impactful, responsible, and ethical ways. These latter attributes will help you ensure that you follow Georgia Tech's policies on Responsible Conduct of Research.[1]

[1] www.rcr.gatech.edu

Table 1: What we plan to cover, what activities we will do for each, when, and with what readings (if applicable).

Date	Topic [Activity]	Reading (*before* class!)
Aug. 21	Hello and welcome! [Self-introductions]	
Aug. 28	*No class (Vuduc away)*	[Guo, 2012]
Sep. 4	*No class (Labor Day)*	
Sep. 11	Ph.D. grind; Responsibilities of teachers and mentors **(RCR)** [Discussion]	[Rüde et al., 2016]
Sep. 18	Research and Education in CSE	[Pinker, 2015]
Sep. 25	Writing, Part 1 [Bring abstract]	[Shewchuk, 1997]; [Zinsser, 2010]
Oct. 2	Giving talks – Guest: Joey Asher	[Asher, 2006]; [Might, 2011]
Oct. 9	*No class (Fall break)*	
Oct. 16	Writing, Part 2; Authorship and publication **(RCR)**	
Oct. 23	Plots and charts; Data management **(RCR)**	[Doumont, 2009]; [Püschel, 2008]
Oct. 30	Innovation; Collaborative research **(RCR)**	[Fujimoto, 2011]
Nov. 6	[Presentations 1] Research ethics **(RCR)**: conflicts of interest; human subjects research; research misconduct	[Dhavamany and Mohandas, 2013]
Nov. 13	*No class (Vuduc away)*	
Nov. 20	Science and engineering in society **(RCR)**; [Presentations 2]	
Nov. 27	Reviewing papers; [Presentations 3]	[Smith, 1990]
Dec. 4	Peer review **(RCR)**; [Presentations 4]	

Who should take this class? If you are a Computational Science and Engineering (CSE) PhD student, you *must* pass this course once, and you must take it in your first semester unless extenuating circumstances prevent you from doing so. (Please consult with the instructor in such cases.)

Logistics. The class meets Mondays from 11:15 am–12:05 pm in the College of Computing Building, Room 102 ("CCB" or "CoC" 102).[2]

[2] https://goo.gl/maps/dANhxGkLktv

Books. There are no required books for the class. However, if you are serious about science and how to convey it effectively, then I would *highly* recommend Josh Schimel's *Writing Science*, Doumont's *Trees, Maps, and Theorems*, and Heath & Heath's *Made to Stick* (in that order if you must prioritize).[3] Aside from those, we will rely primarily on readings available online.

[3] Schimel 2012, Doumont 2009, Heath and Heath 2007

Philosophy and approach. The basic philosophy of this course is that you learn best by a combination of reading, thinking, and most importantly, *actively doing*. Therefore, there will be few formal lectures. Rather, we will all do *actual stuff* together in class. This approach only works if you prepare *before* each class, so please do so.

Your grade in the class is based entirely on participating in *all* the exercises. If you really need to miss a class, you should advise the instructors as far in advance as possible.

References

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Joshua Schimel. *Writing Science: How to write papers that get cited and proposals that get funded*. Oxford University Press, 2012. ISBN 978-0199760244.

Jonathan Richard Shewchuk. Giving an academic talk, 1997. URL http://www.cs.berkeley.edu/~jrs/speaking.html.

Alan Jay Smith. The task of the referee. *IEEE Computer*, 23(4), April 1990. DOI: 10.1109/2.55470.

William Zinsser. Writing English as a second language. *The American Scholar*, 2010. URL http://theamericanscholar.org/writing-english-as-a-second-language.