NOTES ON Ph.D. ORAL EXAMS

Experience indicates that Ph.D. students can use guidance on presenting effective Ph.D. oral exams. This memo is intended to provide some of that guidance.

Graduate students might also seriously consider a quarter’s enrollment in ENGR 103 Public Speaking (one evening meeting per week). Faculty members who have helped judge the “final exams” in this course can attest to its value.

1. The public part of a Ph.D. oral exam should last 30-45 minutes maximum. Rehearse your presentation with critical friends until it fits comfortably within that limit. (This may even have some rewards. A talk a bit too short, rather than way too long, may leave your audience interested rather than bored, and lead to a much more interesting question period).

2. Your talk should open with a few slides or transparencies which (a) introduce the general idea of the talk in broad and non-technical terms, to tell even an audience of non-specialists what the talk is all about; and (b) give a brief summary (one slide) on the specific contributions made by this dissertation. The rest of the talk need not then cover each and every such contribution. The premier objective of the public exam should be an interesting exam for the audience – not a detailed recording of every contribution in the dissertation. We also recommend you bring printouts of your slides to your defense for your committee members.

3. To repeat: The objective is to give a good talk. Bringing in results obtained by others, or other material that will enrich your presentation, is perfectly acceptable, provided of course you take care to distinguish what you yourself did, and what things were done by others.

4. Many dissertations contain secondary pieces of work, outside the main thrust of the dissertation, representing things done more or less accidentally along the way. Other than mentioning these secondary items once at the beginning, it’s not necessary that these be covered or even mentioned again in the talk. Cover a few things well, rather than attempting to cover everything so rapidly that the effort is pointless.

5. Theoretical contributions pose a special problem. It’s impossible to give an audience a detailed background in some unfamiliar field, and then lead them through a complicated mathematical analysis. DON’T TRY! Rather, if part of your contribution is theoretical, first present in largely nonmathematical form the primary assumptions in your analysis; then indicate in general terms the line of attack; and then present your primary results and conclusions, expressing them in practical terms and comparing them against experimental results if possible.

It can be perfectly acceptable to display a horrendous differential equation, set of coupled equations, or integral, if this forms one of the main steps or illustrates the general nature of your analysis. A few experts in the audience may get something out of it; and the rest of the audience will realize what a theoretical wizard you must be. But you wouldn’t expect an audience to grasp 15 pages of complicated mathematical derivation in 10 minutes even if they were sitting at their own desks. It’s less than useless, then, to put those fifteen pages on transparencies and flash them in front of your audience in the same number of minutes.

6. At the end of your talk, after summarizing once again your own contributions, say something definite like, “Thank you” or “That concludes my presentation,” to let the audience know that you’ve finished. The audience needs a clear signal that you’re finished and it’s time to applaud your efforts. Don’t, in particular, end your talk with: “Any questions?” That’s the exam chair’s job, after the audience has applauded your efforts.

7. To repeat the initial warning: Public exam oral talks that extend beyond a well-rehearsed, comfortably paced 45 minutes may not be viewed by some of your faculty as an acceptable performance.

AES