

MegaWomen/GAME Qualls info session minutes: 11/18/2005

- Amy Banzaert (see slides)
 - Agenda overview
 - Guidelines from grad guide
 - Qualls surve results
 - Summary of exams by profs
 - Discussion of OE exams
 - Grad guide overview – grad guide statement
 - Rules (ie, no later than three terms after admission to PHd
 - May and Jan
 - Two parts
 - Subj areas
 - Thesis area exam
 - MAY be offered 2nd attempt
- Nici Ames – 2005 Qualls survey results (see slides)
- Subject area exams
 - Solid Mechanics -- Prof Anand
 - Solid mechanics
 - Material covered in courses: 2.001, 2.002, 2.071
 - Format – oral exam only with prep time
 - Thermo -- Prof Brisson
 - Oral and Written
 - Oral – 3-5 profs present
 - More open ended than the written
 - Material – **2.005, 2.006** – best representation of Material
 - 2.41 – helpful for mindset and approach
 - Expect advanced understanding of the 2.005, 2.006 material
 - General Advice
 - don't freeze, approach and thinking is more important
 - If you freeze up, faculty ask questions to initiate discussion, not to indimidate you
 - Design -- Prof Culpepper
 - Written and oral
 - Broad-based
 - Formulate requirements for design

- Produce feasible concepts and prove feasibility by first order models
 - Downselect best option
 - Comment on practical implications
 - Fabrication/mfg difficulties
 - Marketability
 - Design faculty review exams every semester
 - Material: 2.007, 2.009, 2.72 (nothing from grad courses necessarily)
 - Recommended grad courses 2.75, 2744, 2739J
- Optics -- Prof Barbasathis
 - 2.710 (and grad version)
 - Format: written + oral
 - Written – closed book
 - Oral: research paper 1 week prior distributed and give presentation
 - Presentation is to emphasize the fundamental aspects present in the paper
- Controls – Prof David Hardt
 - Written and oral
 - Courses: 2.003,4
 - 2.003 – lumped element linear system modeling
 - linear sys dynamics, lin sys theory, feedback control
 - laplace trans, root locus, freq resp analysis
 - process of transforming physical sys to lumped element modeling
 - 2.14 – grad course recommended for control theory and for test prep
 - 2.151 – core grad course
 - both above grad courses are slightly different than expectation of exam content
- Manufacturing – Prof David Hardt
 - Written and oral
 - Traditionally open book
 - 2.810 – defines content of exams
 - 2.008 – ugrad course – sufficient for exam
 - operating knowledge of basic physics of std mfg processes (mech and electrical)
 - rate limits, cost, quality issues

- smaller scale: system theory
 - Written and oral
- Fluids – Prof Doug Hart
 - 3 simultaneous sessions this year
 - single 60 mins exam
 - 30 min prep
 - 30 min oral pres of solution
 - graded out of 10
 - understand fundamental principles and apply to real world egr problems
 - not writing eqs
 - emphasis on scaling relations and estimations
 - Course: 2.25
 - fundamental material is Ugrad levels with high level of understanding
- Biological Engineering – Prof Kamm
 - There was a handout available
 - 2.795, 2.798 (BE430 and BE410)
 - Format: given a paper, write paper critique paper in 24 hrs, present 24 hrs later for oral exam
 - 1st half of presentation: present paper
 - 2nd half – general questions on the tech aspects of critique
 - Recommendation: as writing critique, emphasize areas most comfortable in, those will be the areas you are questioned on
- Dynamics – Prof Tom Peacock
 - Written and oral
 - 1 hr written
 - oral exam – 20 min prep, 20 min exam
 - 3-4 profs
 - coursework: 2.003, 2.032
 - Specific areas covered in slides
- OE exams – prof sclavounos (Old Format for grandfathered students)
 - 2 of 3 area written exams
 - hydro
 - mechanics
 - prog random processes
 - 3 hrs each exams
 - 3 of 7 units for total grade

- 2 area oral exams
 - prep time
 - 2 of 7 units for total grade
 - Research oral exam
 - 2 of 7 units for total grade
 - Heat Transfer – Prof Mikic
 - 2.51 ugrad, 2.55 – grad
 - Oral , 30min and 30min
 - More open ended
 - Suggestion: realize which transfer processes are active, model simplest way first and then advance
 - Written
 - Open book
 - Closed ended solutions
- Discussion period
 - Q's on Thesis area exams
 - same subject area specific exams groups proctoring
 - Time division sometimes varies within groups
 - Sometimes rigorous distinction, sometimes questions arise during presentation
 - Thesis advisors do not speak during presentation
 - Emphasize what your contribution is
 - State up front what the time frame you have spent on the research is
 - Intent is to evaluate whether you can do an original body of work
 - Read up on literature
 - Critical thinking
 - Ugrad work is rare
 - Emphasis is on contribution to solving the problem and approach, what are the next questions?
 - Q on Mfg exam
 - Exams open book? – decided by exam writer
 - Traditionally HAS been open book, any book felt useful but typically that used in the courses are most useful
 - Q's on Scoring and passing criteria overall
 - 80 pts total
 - 20 each for each subject area

- 20 for thesis BUT thesis is most important to some faculty – will not pass without it
- Results meeting
 - Picture of student with Scores from each area are presented and discussed
 - It IS important for someone to KNOW YOU and can say something about you
 - Must pass 2 subject areas and thesis area
 - You will not pass if you do not pass your thesis, but it is possible to have to re-exam ONLY on thesis