Outline

• Schedules and timelines
• Brief Facts about Texas A&M
• Overview of the department
• Initial Course Scheduling

This talk is available at the following web site:
http://www.math.tamu.edu/~phoward/graduate/materials.html
Schedules and Timelines
Schedule for the Day

8:00 – 8:15: Computer account forms
8:15 – 9:15: Overview of the program; initial course scheduling
9:15 – 9:30: TA assignments, David Manuel
9:30 – 9:45: Break
9:45 – 10:45: Computer systems, Art Belmonte
10:45 – 11:30: Graduate Student Organizers and Representatives
   – GSO, Roberto Barrera;
   – AMS Student Chapter, Philip Hoskins;
   – GSC, Curtis Porter and Wen Liu;
   – Demo of registration in Howdy, Kaitlyn Phillipson
11:30 – 1:15: Questions and break for lunch
1:15 – 4:00(-ish): Course scheduling, payroll processing
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Department Email

• Students should have a department email account by the end of the day.

• To the extent possible, students should check this account at least once each day while in the program.
Schedule for the Next Two Weeks

- Tuesday, Aug. 19 – Thursday, Aug. 21: International student check-in with ISS. Students should register for a check-in time at [http://iss.tamu.edu/checkin_orientation/checkin.asp](http://iss.tamu.edu/checkin_orientation/checkin.asp)

- Friday, Aug. 22: University level graduate student orientation, 8:00 a.m. – 3:00 p.m., in Rudder Tower. Students should register at [http://ogs.tamu.edu/incoming-students/new-student-orientation](http://ogs.tamu.edu/incoming-students/new-student-orientation)

Schedule for the Next Two Weeks

• Wednesday, Aug. 27, University level TA workshop, 8:00 – 5:00, in Blocker. More information:
  http://cte.tamu.edu/content/ta-training

• Thursday, Aug. 28: International Student Conference (ISC); informative, but not required. More information:
  http://iss.tamu.edu/events/isc.asp

• Friday, Aug. 29: University level graduate student orientation, 8:00 a.m. – 3:00 p.m., in Rudder Tower (alternative)
Schedule for the Semester

• Friday, Aug. 29: Last day to register for Fall 2014 classes without a penalty
• Monday, Sept. 1: First day of classes
• Wednesday, Sept. 3: First meeting of the First Year Graduate Student Seminar (FYGSS), 5:30 p.m. – 6:30 p.m. in Blocker 628
• Friday, Sept. 5: Last day for drop/add
• Tuesday, Dec. 9: Last day of classes
• For more: calendar.tamu.edu
Brief Facts about Texas A&M
About Texas A&M

• Founded in 1876
• Among the 5 largest universities in the US, public and private
• Over 55,000 students, including over 13,000 graduate students
• Campus spans 5,200 acres, plus 350 acres for Research Park (about 8.5 mi$^2$ or 22 km$^2$)
• $5B endowment is 4$th largest in the nation among public universities and 10$th overall
• Faculty includes 3 Nobel prize recipients; and 7 members of the National Academy of Sciences
Overview of the Department
People

- 83 professors
- 31 academic professional track faculty
- 26 post-docs and visitors
- 126 PhD students
- 21 Campus MS students
- 55 Distance MS students

The department graduates about 15 PhD students, 8 campus MS students, and 15 distance MS students each year.
Faculty Profile

• 11 AMS Fellows
• 8 distinguished professors (a University title)
• 4 endowed chairs
• 70% of the faculty is funded in part by external grants: combined 6 million dollars
• Two associated institutes
  – Institute for Applied Mathematics and Computational Science
  – Institute for Scientific Computation
Research Groups

- Algebra and combinatorics (14,10)
- Applied mathematics and interdisciplinary research (24,11)
- Approximation theory (1,5)
- Functional analysis (22,10)
- Geometry and topology (5,8)
- Groups and dynamics (5,3)
- Number theory (6,4)
- Numerical analysis and scientific computation (21,7)
- Partial differential equations and mathematical physics (9,14)
- Probability theory (1,3)
- Several complex variables (3,2)

(Number of PhD students, Number of faculty) in 2013
Active Seminars

- Algebra and combinatorics
- Algebraic geometry
- Applied math
- Banach spaces
- First year graduate student seminar
- Free Probability
- Geometry
- Graduate student organization
- Groups and dynamics
- Inverse problems
- Linear analysis
- Mathematical physics and harmonic analysis
- Number theory
- Numerical analysis
- Randomized algorithms
- Several complex variables
Initial Course Scheduling
MS Schedules

• For MS students, course schedules are determined by the MS track chosen. Options are:
  – Traditional
  – Teaching
  – Computational
  – Industrial
  – Math biology

• Requirements for these tracks:
  [http://www.math.tamu.edu/graduate](http://www.math.tamu.edu/graduate)
MS Schedules

• For example, a student in the (non-thesis) computational track must complete 12 hours in a coordinated minor (typically from areas such as engineering, physics, and computer science).

• One common option is to take one outside course each semester.
Example schedule:

• Fall 2014
  – M609, Numerical analysis
  – M641, Analysis for applications I
  – Outside course

• Spring 2015
  – M610, Numerical partial differential equations
  – M676, FEM for Scientific Computing
  – Outside course
PhD Schedules

For PhD students, first-year schedules are mostly determined by the qualifying-exam and breadth requirements. These are characterized by four broad categories:

1. Algebra, discrete math, number theory
2. Real and complex analysis
3. Differential geometry, topology
4. Applied and numerical analysis
Qualifying Exam Requirements

• Students must pass two qualifying exams from two different areas by the end of their second year in the program.

• Each qualifying exam is based on a two-semester sequence.

• The five options are:
  – Algebra; M653-M654
  – Applied and numerical analysis; M641-M610
  – Complex analysis; M617-M618
  – Real analysis; M607-M608
  – Differential geometry and topology; M636-M622
Breadth Requirements

• As a breadth requirement, students must take at least one approved course from the two areas they do not take qualifying exams in.

• Students who have already completed introductory level courses in a breadth area should take a more advanced course in the area.
Example 1, Applied Math

• Any student in applied math will take the applied/numerical analysis qualifying exam, and this is based on two courses:
  – M641 – Analysis for Applications I
  – M610 – Numerical Partial Differential Equations

• Many students in applied math will take the analysis qualifying exam, which is based on:
  – M607 – Real Variables I
  – M608 – Real Variables II
Example 1, Applied Math

• If a student takes the applied/numerical and analysis qualifying exams, he/she will need to fulfill breadth requirements in two areas:
  – Algebra, discrete math, number theory
  – Differential geometry, topology

• Some options for algebra, discrete math, number theory:
  – M653: Algebra I
  – M613: Graph theory
  – M626: Analytic number theory

• Some options for differential geometry, topology:
  – M622: Differential geometry I
  – M636: Topology I
Example 1, Applied Math

Here is an example first-year schedule:

• Fall 2014
  – M607, Real Variables I
  – M641, Analysis for Applications I
  – M653, Algebra I

• Spring 2015
  – M608, Real Variables II
  – M610, Numerical PDE
  – M642, Analysis for Applications II

This student would be prepared to take two qualifying exams, and would only have one breadth requirement left for the second year.
Example 2, Algebraic Geometry

• Any student studying algebraic geometry will take the qualifying exam in algebra, which is based on the courses:
  – M653-M654: Algebra I-II

• Many students studying algebraic geometry will also take the qualifying exam in differential geometry and topology, which is based on the courses:
  – M622: Differential geometry I
  – M636: Topology I
Example 2, Algebraic Geometry

- Students who pass qualifying exams in algebra and differential geometry/topology will need to take breadth requirement courses in the following areas:
  - Real or complex analysis
  - Applied/numerical analysis

- Some options for real and complex analysis:
  - M607: Real variables I
  - M617: Theory of functions of a complex variable I

- Some options for applied and numerical analysis:
  - M609: Numerical analysis
  - M610: Numerical partial differential equations
  - M641: Analysis for applications
Example 2, Algebraic Geometry

Here is an example first-year schedule:

• Fall 2014
  – M607, Real Variables I
  – M636, Topology I
  – M653, Algebra I

• Spring 2015
  – M622, Differential geometry
  – M654, Algebra II
  – M648, Computational algebraic geometry

This student would be prepared to take two qualifying exams, and would only have one breadth requirement left for the second year.