Results for Spring and Fall Exams

- In the fall, the average pass rate average is between 50% and 60% (see below).
- In the spring, the average pass rate for Part I is at about 40% and for Part II increases to above 70%. Conclusion: Part II is an easier exam; student self study pays off.
- The exam has a demoralizing effect on some students; American students average 1.79 tries for Part I and 2.21 tries for an easier exam; student self study pays off.
- Some students really do not understand basic undergraduate physics! How can they be effective teaching assistants?

Study of Numbers of Tries

- Sequences at right show number of tries before final outcome on the exam (pass or fail).
- "S" denotes a try as part of the summer course.
- Clearly, many students can pass the exam without the summer course.
- But some clearly benefit from the "boot camp" experience of the summer course.

Timeline

- Qualifying Exam
- Summer Course
- Change of basic problems
- Summer Course
- Summer Course

Budget

- Instructor’s Salary
  - Covered by Notre Dame’s Summer Session.
  - Only one instructor in the first three years.
- Student Stipends
  - About 10 per year provided by Notre Dame’s Graduate School (exception: 2006).
- Offered on first-come, first-serve basis to American incoming graduate students.
- Thanks go to the Graduate School for support!

Teaching Philosophy

- Identify at-risk students
  - Assume Admissions Committee is admitting students who have the capability of earning a physics Ph.D.
  - At-risk students tend to be those from small colleges and often have low subject GRE’s.
  - Assume these students have major holes in physics background.
  - Persuade them to join the summer course.
- Atmosphere
  - Not a competition, rather meeting a basic standard needed for teaching and further learning.
  - Problems are fun and challenging even for the instructor.
  - Hard work needed at times to fill in a particular hole; doing this early in the student's career is best.
  - Learn together, collaborate together.
  - Chance to work on teaching skills (suggest students list the summer course that way on their resumes).
- Psychology
  - High expectations without sacrificing standards. Note the challenge to the top of this graph.
  - Free try of exams at end of each course.
  - Only one instructor in the first three years.
  - Establishing a cadre of effective teaching assistants.
  - The collaborative attitude is contagious. Others benefit!
  - Our graduate students know that we value them.

For more on the summer course, see www.nd.edu/~newman