

UNIVERSITY OF IDAHO
DEPARTMENT OF STATISTICS
GRADUATE STUDENT GUIDE
2006 (DRAFT 3/21/06)

1. The Program

The Department of Statistics at the University of Idaho offers graduate training leading to the degree of Master of Science in Statistics. The objective is to provide sound training in the fundamental principles and techniques of statistics. Graduates will be equipped for a variety of statistical careers in industry, business, natural resources, agriculture, and government, or to engage in further study at the doctoral level.

The UI Statistics group is an intercollegiate, interdisciplinary team that emphasizes broad applications as well as theoretical aspects of statistics. In addition to research within the discipline, faculty collaborate actively with researchers from the physical, biological, and social sciences, promoting campus-wide cooperation in investigation of statistical problems. There is also close academic liaison with the Department of Statistics at nearby Washington State University.

2. Admission Requirements

- Three semesters of calculus
- Six hours of statistics (including ST- 401: Statistical Analysis, or its equivalent)
- Formal computer training in one or more standard computer languages.

3. Requirements for Master's Degree in Statistics

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Statistics. See the College of Graduate Studies section of part 4 in the UI Catalog for the applicable general degree requirements. The College of Graduate Studies requires a minimum of 30 credits for the M.S. degree.

Three different tracks to the MS are offered. There are two non-thesis options and one thesis option:

1. **Thesis (Stat 500)** (with no qualifying exam)
2. **Internship (Stat 598)** with an internship report
3. **Research course (Stat 599)** that includes a comprehensive examination and presentation of written and oral project reports

If a student fails the Stat 599 comprehensive exam, they may take the exam up to two additional times. If a student fails the Stat 599 comprehensive exam three times, they are considered to have failed out of the master's program in statistics.

An individual graduate program is tailored for the student, but all students must complete a basic core requirement of 12 credits and one of the three degree options. The core requirements are:

- **Stat 451 Probability Theory (3 cr)**
- **Stat 452 Mathematical Statistics (3 cr)**
- **Stat 507 Experimental Design (3 cr)**
- **Stat 550 (formerly 510) Regression (3 cr)**

A maximum of 6 credits of **Stat 500 Master's Research & Thesis** may be counted toward the **thesis** degree option.

Students are required to register for ST- 501 (seminar) and attend this class regularly.

Courses currently provided include:

Remedial Courses:

| | | | |
|---------|----------------------|---------|----------------|
| ST- 401 | Statistical Analysis | ST- 412 | Biometry (WSU) |
|---------|----------------------|---------|----------------|

Non Remedial Courses

| | | | |
|---------|---------------------------------------------|---------|-----------------------------|
| ST- 420 | Statistical Analysis Qualitative Data (WSU) | ST- 514 | Nonparametric Statistics |
| ST- 422 | Sampling Methods | ST- 519 | Multivariate Analysis |
| ST- 423 | Beginning SAS Programming | ST- 533 | Theory of Linear Models |
| ST- 424 | Intermediate SAS Programming | ST- 539 | Time Series (WSU) |
| ST- 425 | Topics in SAS Programming | ST- 544 | Stochastic Models |
| ST- 428 | Geostatistics | ST- 548 | Statistical Theory I (WSU) |
| ST- 433 | Econometrics | ST- 549 | Statistical Theory II (WSU) |
| ST- 437 | Statistics for Business Decisions | ST- 550 | Regression |
| ST- 451 | Probability Theory | ST- 555 | Statistical Ecology |
| ST- 452 | Mathematical Statistics | ST- 565 | Computer Intensive Methods |
| ST- 453 | Stochastic Models | ST- 571 | Reliability Theory (WSU) |
| ST- 455 | Applied Actuarial Science II | ST- 572 | Data Analysis (WSU) |
| ST- 456 | Quality Management | ST- 594 | Analysis of Correlated Data |
| ST- 507 | Experimental Design | ST- 598 | Internship |
| | | ST- 599 | Research |

4. Tentative Schedule of Statistics Courses

| Spring 2006 | Fall 2006 | Spring 2007 | Fall 2007 | Spring 2008 | Fall 2008 |
|-------------------------------|---------------------------------------|-------------------------------|-----------------------------------|-------------------------------|---------------------------------------|
| GRADUATE COURSES | GRADUATE COURSES | GRADUATE COURSES | GRADUATE COURSES | GRADUATE COURSES | GRADUATE COURSES |
| 401-Stat. Analysis | 401-Stat. Analysis | 401-Stat. Analysis | 401-Stat. Analysis | 401-Stat. Analysis | 401-Stat. Analysis |
| 412-Biometry (WSU) | 412-Biometry (WSU) | 412-Biometry (WSU) | 412-Biometry (WSU) | 412-Biometry (WSU) | 412-Biometry (WSU) |
| 422-Sampling Methods | | 422-Sampling Methods | | 422-Sampling Methods | |
| | 420/520-Stat Analysis/Qual Data (WSU) | 423-425 SAS Programming | | 423-425 SAS Programming | 420/520-Stat Analysis/Qual Data (WSU) |
| | 428-Geostatistics | | 428-Geostatistics | | 428-Geostatistics |
| | 433-Econometrics | | 433-Econometrics | | 433-Econometrics |
| 452-Mathematical Statistics | 451-Probability Theory | 452-Mathematical Statistics | 451-Probability Theory | 452-Mathematical Statistics | 451-Probability Theory |
| 453/544 Stochastic Models | | | | 453/544 Stochastic Models | |
| 456-Quality Mgmt. | 456-Quality Mgmt. | 456-Quality Mgmt. | 456-Quality Mgmt. | 456-Quality Mgmt. | 456-Quality Mgmt. |
| 500-Master's Research& Thesis | 500-Master's Research& Thesis | 500-Master's Research& Thesis | 500-Master's Research& Thesis | 500-Master's Research& Thesis | 500-Master's Research& Thesis |
| 501-Seminar | 501-Seminar | 501-Seminar | 501-Seminar | 501-Seminar | 501-Seminar |
| | 507-Experimental Design | | 507-Experimental Design | | 507-Experimental Design |
| 519-Multivariate Analysis | 514-Nonparametrics | 519-Multivariate Analysis | 514-Nonparametrics | 519-Multivariate Analysis | 514-Nonparametrics |
| 525-Econometrics | | 525-Econometrics | | 525-Econometrics | |
| 549-Stat Theory II (WSU) | | 549-Stat Theory II (WSU) | | 549-Stat Theory II (WSU) | |
| 550-Regression | | 550-Regression | | 550-Regression | |
| 555-Statistical Ecology | | | | 555-Statistical Ecology | |
| | 565-Computer Intens. Meth.(UI) | | 565-Computer Intens. Meth. (WSU) | | 565-Computer Intens. Meth.(UI) |
| 571-Reliability Theory (WSU) | | 571-Reliability Theory (WSU) | | 571-Reliability Theory (WSU) | |
| | 575-Theory of Linear Models (WSU) | | 575-Theory of Linear Models (WSU) | | 575-Theory of Linear Models (WSU) |
| 598-Internship (perm. req.) | 598-Internship (perm. req.) | 598-Internship (perm. req.) | 598-Internship (perm. req.) | 598-Internship (perm. req.) | 598-Internship (perm. req.) |
| 599-Research | 599-Research | 599-Research | 599-Research | 599-Research | 599-Research |

ST- 420/520 is taught at WSU every other year.

ST- 565 is taught every other year at UI. It is taught either at UI or WSU each year.

ST- 555 is taught every other spring.

5. Procedures for Master's Degrees (See the College of Graduate Studies guidelines in the UI General Catalog)

6. Facilities/Computer Labs

Statistics graduate students have a computer lab available (in Brink 400), which contains one Linux workstation and three PCs running Windows XP Professional. For an account please see Rick Edgeman (Rick may refer you to another person to actually set up an account for you). The lab also has a library of statistical references and manuals for many statistics programs such as SAS, SPSS, etc. Students may also use any of the student computer labs distributed throughout the campus. Available software includes the latest versions of SAS, SPSS, Minitab, and R, as well as other productivity software and access to the Internet. If you have computer questions, contact the Help Desk at 885-4357.

7. Statistics Personnel

7.1. Faculty

Raymond Dacey, Ph.D. Purdue University, 1970, Professor.
Decision theory, game theory, and international interactions.
rdacey@uidaho.edu

Brian C. Dennis, Ph.D. Pennsylvania State University, 1982, Professor.
Statistical ecology, biometrics, mathematical modeling, theoretical ecology, conservation biology, population dynamics.
brian@uidaho.edu

Rick L. Edgeman, Ph.D. University of Wyoming, 1983, Professor and Chair.
Six sigma, quality and reliability engineering, sustainable development, business excellence.
redgeman@uidaho.edu

Edward O. Garton, Ph.D. University of California, Davis, 1977, Professor.
Dynamics & management of bird & mammal populations, modeling & simulation of population processes, population estimation.
ogarton@uidaho.edu

Ismail H. Genc, Ph.D. Texas A&M, 1999, Assistant Professor.
Econometrics methods.
igenc@uidaho.edu

Timothy R. Johnson, Ph.D. University of Illinois at Urbana-Champaign, 2001, Assistant Professor.
Behavioral statistics and psychometrics, panel models, and statistical computing.
trjohns@uidaho.edu

Paul Joyce, Ph.D. University of Utah, 1988, Professor.
Probability, stochastic processes, mathematical population genetics, and mathematical statistics.
joyce@uidaho.edu

John J. Lawrence, Ph.D. Pennsylvania State University, 1993, Associate Professor.
Quality control, total quality management, and business statistics.
jjl@uidaho.edu

Sauchi Stephen Lee, Ph.D. Florida State University, 1991, Associate Professor.
Classification, regression, neural networks, pattern recognition, and prediction.
stevel@uidaho.edu

R. Ashley Lyman, Ph.D. Northwestern University, 1972, Associate Professor.
Applied econometrics, microeconomic theory, demand analysis, regulation and policy: water and energy.
alyman@uidaho.edu

Andrew P. Robinson, Ph.D. University of Minnesota, 1998, Assistant Professor.
Model building and testing and natural resource applications.
andrewr@uidaho.edu

Bahman Shafii, Ph.D. University of Idaho, 1988, Director of Statistical Programs, College of Agriculture.
Design and analysis of experiments, empirical model building, linear and nonlinear regression applications, and statistical computing.
bshafii@uidaho.edu

R. Kirk Steinhorst, Ph.D. Colorado State University, 1971, Professor.
Linear models, experimental design, multivariate analysis, and biometry.
kirk@uidaho.edu

Christopher J. Williams, Ph.D. University of Georgia, 1988, Professor.
Statistical genetics, statistical computing, mathematical statistics, and Bayesian statistics.
chrisw@uidaho.edu

7.2. Emeritus Faculty

Dale Everson, Ph.D. Iowa State University, Ames, 1969, Professor Emeritus / Part-time Consultant.
deverson@uidaho.edu

Joel R. Hamilton, Ph.D. University of California-Berkeley, 1971, Professor Emeritus.
Regression analysis, econometrics, and natural resource applications.
joelh@uidaho.edu

7.3. Lecturers

7.4. Staff

Barbara Olsen is the Department of Statistics Administrative Assistant. Her office is located in 415A Brink Hall. Please let her know your local phone number and e-mail address and keep her informed of any changes.
bolsen@uidaho.edu

8. Duties and Assignments of Teaching Assistants

Some teaching assistants (TA's) are assigned to work as tutors in the Statistics Assistance Center where they spend up to 15 hours per week tutoring students in lower level Statistics courses. Most TA's are assigned to help course instructors. In this role they work up to 15 hours per week attending the lectures, meeting with the instructor on a regular basis, assisting with course preparation and grading papers.

Given the demands on the TA, time management is very important. The fixed weekly time commitments include

| | |
|-------------|-----------------------------|
| 3 hrs | attending lectures |
| <u>1 hr</u> | meeting with the instructor |
| 4 hrs fixed | |

The variable time commitments include recitation preparation, office hours and paper grading. A rough guide is

| | |
|-----------------|--------------------|
| 3 hrs | office hours |
| 3 hrs | course preparation |
| <u>5 hrs</u> | paper grading |
| 11 hrs variable | |

The variable time commitments may vary slightly from TA to TA and from instructor to instructor but there is not a lot of room for adjustment. It is the responsibility of the instructor and the TA to organize work that can be done in this time frame.

Some students may be assigned as paper graders for more than one class. Other students may be assigned hours as tutors in the Statistics Assistance Center as well as hours grading for one or more classes.

The entire Department of Statistics faculty and staff are here to help you; please don't hesitate to ask.

Suggestions for future improvements are welcome.