

**UNIVERSITY OF IDAHO**  
**DEPARTMENT OF STATISTICS**  
**GRADUATE STUDENT GUIDE**  
**2007 (7/20/07)**

## 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 18 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 519 Multivariate Analysis (3 cr)**
- **Stat 550 Regression (3 cr)**
- **Stat 565 Computer Intensive Statistics (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 4 credits of ST- 501 Seminar and attend this class regularly.**

### Curricular Summary: Statistics Master's degree with Thesis Option

Background	<ul style="list-style-type: none"> <li>• Three semesters of calculus</li> <li>• Six hours of statistics (including ST- 401: Statistical Analysis, or its equivalent)</li> <li>• Formal training in one or more standard computer languages</li> </ul>
Stat 451 (Math 451) Probability Theory	3 cr
Stat 452 (Math 452) Mathematical Statistics	3 cr
Stat 507 Experimental Design	3 cr
Stat 519 Multivariate Analysis	3 cr
Stat 550 Regression	3 cr
Stat 565 Computer Intensive Statistics	3 cr
Stat 500 Thesis	6 cr, maximum
Stat 501 Seminar	1 cr, <b>required</b> to be taken every semester **Please note that Stat 501 is <b>not</b> included on the Study Plan except in special cases where the committee <b>may</b> allow the use of 1 or 2 credits**
Electives (as determined by the student's committee)	6 cr
<b>Total (minimum)</b>	<b>30 cr</b>

### Curricular Summary: Statistics Master's degree with Non-Thesis Option

Background	<ul style="list-style-type: none"> <li>• Three semesters of calculus</li> <li>• Six hours of statistics (including ST- 401: Statistical Analysis, or its equivalent)</li> <li>• Formal training in one or more standard computer languages</li> </ul>
Stat 451 (Math 451) Probability Theory	3 cr
Stat 452 (Math 452) Mathematical Statistics	3 cr
Stat 507 Experimental Design	3 cr
Stat 519 Multivariate Analysis	3 cr
Stat 550 Regression	3 cr
Stat 565 Computer Intensive Statistics	3 cr
Stat 598 Internship <b>or</b> Stat 599 Research	3 cr, max. for Stat 598 <b>or</b> 4 cr, max. for Stat 599
Stat 501 Seminar	1 cr, <b>required</b> to be taken every semester **Please note that Stat 501 is <b>not</b> included on the Study Plan except in special cases where the committee <b>may</b> allow the use of 1 or 2 credits**
Electives (as determined by the student's committee)	9 cr, for Internship option <b>or</b> 8 cr, for Research option
<b>Total (minimum)</b>	<b>30 cr</b>

Courses currently provided include:

Remedial Courses:

ST- 401	Statistical Analysis	ST- 412	Biometry (WSU)
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Non Remedial Courses

ST- 420	Statistical Analysis Qualitative Data (WSU)	ST- 520	Statistical Analysis Qualitative Data (WSU)
ST- 422	Sampling Methods	ST- 522	Biostatistics/Statistical Epidemiology
ST- 423	Beginning SAS Programming	ST- 527	Quality Control (WSU)
ST- 424	Intermediate SAS Programming	ST- 534	Analyses of Mixed Linear Models
ST- 425	Topics in SAS Programming	ST- 539	Time Series (WSU)
ST- 428	Geostatistics	ST- 542	Applied Stochastic Models (WSU)
ST- 433	Econometrics	ST- 544	Stochastic Models
ST- 446	Six Sigma Innovation	ST- 548	Statistical Theory I (WSU)
ST- 451	Probability Theory	ST- 549	Statistical Theory II (WSU)
ST- 452	Mathematical Statistics	ST- 550	Regression
ST- 453	Stochastic Models	ST- 552	Econometrics II (WSU)
ST- 455	Applied Actuarial Science II	ST- 555	Statistical Ecology
ST- 456	Quality Management	ST- 565	Computer Intensive Statistics
ST- 507	Experimental Design	ST- 566	Analyzing Microarray/Genomic Data
ST- 513	Adv. Topics Math/Quant. Meth. (WSU)	ST- 571	Reliability Theory (WSU)
ST- 514	Nonparametric Statistics	ST- 575	Theory of Linear Models
ST- 518	Techniques of Sampling (WSU)	ST- 594	Analysis of Correlated Data
ST- 519	Multivariate Analysis	ST- 598	Internship
		ST- 599	Research

#### 4. Tentative Schedule of Statistics Courses

Fall 2007	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010
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
	423-425 SAS Programming	420/520-Stat Analysis/Qual Data (WSU)	423-425 SAS Programming		423-425 SAS Programming
428-Geostatistics		428-Geostatistics		428-Geostatistics	
433-Econometrics		433-Econometrics		433-Econometrics	
504-Managing Design Process	446-Six Sigma Innovation	504-Managing Design Process	446-Six Sigma Innovation	504-Managing Design Process	446-Six Sigma Innovation
451-Probability Theory	452-Mathematical Statistics	451-Probability Theory	452-Mathematical Statistics	451-Probability Theory	452-Mathematical Statistics
	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	
514-Nonparametrics	519-Multivariate Analysis	514-Nonparametrics	519-Multivariate Analysis	514-Nonparametrics	519-Multivariate Analysis
	549-Stat Theory II (WSU)		549-Stat Theory II (WSU)		549-Stat Theory II (WSU)
	550-Regression		550-Regression		550-Regression
			555-Statistical Ecology		
565-Computer Intens. Meth. (WSU)		565-Computer Intens. Meth.(UI)		565-Computer Intens. Meth.(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

(for details see the College of Graduate Studies guidelines in the UI General Catalog)

- **Appointment of Major Professor and Committee**
  - File form, "Appointment of Major Professor and/or Committee Form"
- **Study Plan Prepared by student, major professor, and committee**
  - File Form, "Study Plan"
  - Ideally should be filed by end of first semester
- **Application for Degree**
  - Student and major professor certify requirements completed or will be completed within time allotted
  - Complete form, "Application for Degree," available at [www.uidaho.edu/registrar](http://www.uidaho.edu/registrar)
  - Deadline date appears in the calendar in the Time Schedule
  - One semester prior to graduation, not including summer.
- **Request to Proceed with Final Defense of Thesis**
  - Student will present the Graduate College with this form, signed by the committee.
  - This form is available in the "Graduate Handbook for Theses and Dissertations"
- **Final Defense Report (thesis students only)**
  - Submit immediately following the defense
  - Issued by the Graduate College and required prior to the defense
  - To be taken to final defense for completion and returned to Graduate College following the defense
- **Thesis due no later than six months following a successful defense**
- **Non-thesis Report Form (non-thesis students only)**
  - Submitted by major professor to verify requirement completion for a non-thesis student

## 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 Barbara Olsen in Brink 415A. 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

(Note: Year listed indicates beginning of service at the university)

**Zaid Abdo, Ph.D.** University of Idaho, 2005, Assistant Professor of Mathematics and of Statistics  
 Bioinformatics, statistical genetics, Bayesian statistics, mathematical biology, stochastic processes, optimization  
[zabdo@uidaho.edu](mailto:zabdo@uidaho.edu)

**Raymond Dacey, Ph.D.** Purdue University, 1984, Professor of Economics, Finance and Information Systems and of Statistics  
 Decision theory, game theory, and international interactions  
[rdacey@uidaho.edu](mailto:rdacey@uidaho.edu)

**Brian C. Dennis, Ph.D.** Pennsylvania State University, 1981, Professor of Wildlife Resources and of Statistics  
 Statistical ecology, biometrics, mathematical modeling, theoretical ecology, conservation biology, population dynamics  
[brian@uidaho.edu](mailto:brian@uidaho.edu)

**Raymond J. Dezzani, Ph.D.** University of California Riverside, 2004, Assistant Professor of Geography and Adjunct Assistant Professor of Statistics

Spatial statistics (Markov random field models, local stochastic estimation, Markov transition). stochastic diffusion processes, GIS, global and regional economic inequality measurement and world systems theory, geographic trade models, spatial models in landscape genetics, wildfire propagation models

[dezzani@uidaho.edu](mailto:dezzani@uidaho.edu)

**Rick L. Edgeman, Ph.D.** University of Wyoming, 2004, Professor of Statistics and Department Chair

Six sigma, quality and reliability engineering, sustainable development, business excellence

[redgeman@uidaho.edu](mailto:redgeman@uidaho.edu)

**Edward O. Garton, Ph.D.** University of California, Davis, 1977, Professor of Wildlife Resources and of Statistics

Dynamics & management of bird & mammal populations, modeling & simulation of population processes, population estimation

[ogarton@uidaho.edu](mailto:ogarton@uidaho.edu)

**Luke J. Harmon, Ph.D.** Washington University, 2007, Assistant Professor of Biological Sciences; Adjunct Assistant Professor of Statistics

Ecological and evolutionary aspects of evolutionary radiations at a variety of temporal and spatial scales

[lukeh@uidaho.edu](mailto:lukeh@uidaho.edu)

**Timothy R. Johnson, Ph.D.** University of Illinois at Urbana-Champaign, 2000, Associate Professor of Statistics

Behavioral statistics and psychometrics, panel models, and statistical computing

[trjohns@uidaho.edu](mailto:trjohns@uidaho.edu)

**Paul Joyce, Ph.D.** University of Utah, 1991, Professor of Mathematics and of Statistics

Probability, stochastic processes, mathematical population genetics, and mathematical statistics

[joyce@uidaho.edu](mailto:joyce@uidaho.edu)

**John J. Lawrence, Ph.D.** Pennsylvania State University, 1993, Professor of Production/Operations Management and of Statistics

Quality control, total quality management, and business statistics

[jjl@uidaho.edu](mailto:jjl@uidaho.edu)

**Sauchi Stephen Lee, Ph.D.** Florida State University, 1993, Associate Professor of Statistics

Classification, regression, neural networks, pattern recognition, and prediction

[stevel@uidaho.edu](mailto:stevel@uidaho.edu)

**R. Ashley Lyman, Ph.D.** Northwestern University, 1976, Associate Professor of Economics and of Statistics

Applied econometrics, microeconomic theory, demand analysis, regulation and policy: water and energy

[alyman@uidaho.edu](mailto:alyman@uidaho.edu)

**Bahman Shafii, Ph.D.** University of Idaho, 1986, Professor of Plant Science; Adjunct Professor of Statistics; 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](mailto:bshafii@uidaho.edu)

**Christopher J. Williams, Ph.D.** University of Georgia, 1992, Professor of Statistics; Director of Bioinformatics and Computational Biology Program

Statistical genetics, statistical computing, mathematical statistics, and Bayesian statistics

[chrisw@uidaho.edu](mailto:chrisw@uidaho.edu)

## 7.2. Emeritus Faculty

**Dale Everson, Ph.D.** Iowa State University, Ames, 1962-1996, Professor Emeritus of Statistics  
[deverson@uidaho.edu](mailto:deverson@uidaho.edu)

**Joel R. Hamilton, Ph.D.** University of California-Berkeley, 1970-2002, Professor Emeritus of Agricultural Economics and Statistics  
 Regression analysis, econometrics, and natural resource applications  
[joelh@uidaho.edu](mailto:joelh@uidaho.edu)

**R. Kirk Steinhorst, Ph.D.** Colorado State University, 1977-2007, Professor Emeritus of Statistics  
 Linear models, experimental design, multivariate analysis, and biometry  
[kirk@uidaho.edu](mailto:kirk@uidaho.edu)

## 7.3. Affiliate Faculty

(Note: Year listed indicates completion date of doctoral program.)

**Ismail H. Genc, Ph.D.** Texas A&M, 1999, Associate Professor of Economics; Adjunct Associate Professor of Statistics  
 Econometrics methods  
[igenc@uidaho.edu](mailto:igenc@uidaho.edu)

**Andrew P. Robinson, Ph.D.** University of Minnesota, 1998, Senior Lecturer, Department of Mathematics and Statistics, University of Melbourne, Victoria, Australia  
 Model building and testing and natural resource applications  
[apro@unimelb.edu.au](mailto:apro@unimelb.edu.au)

## 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](mailto: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.**