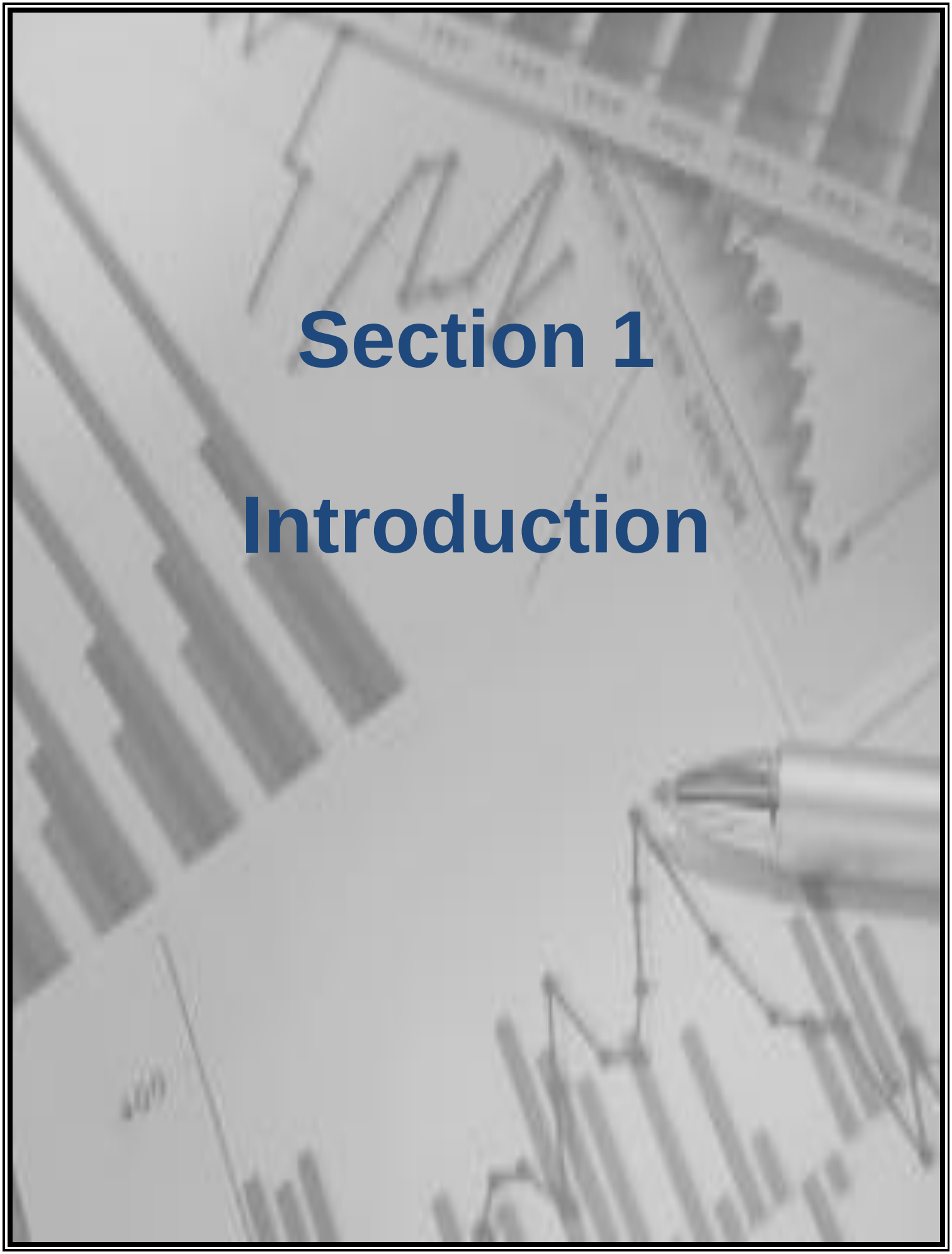
GRADUATE STUDENT HANDBOOK

2016-2017

Table of Contents

Note to all MS-DS Students:

This handbook is being given to all students in the department, including those in the PhD program, traditional MS program, and the MS-DS program. Consequently, many of the items in this handbook will not apply to you. Sections 1, 2, and some of section 3 will be most relevant.



Section 1

Introduction

Preface

The Department of Statistics at the University of Wisconsin-Madison strives to maintain both instructional and research programs of the highest quality. The M.S. and Ph.D. programs provide excellent training in the modern theory, methods and applications of statistics. The Department believes that its graduates should blend a strong theoretical statistics foundation with practical experience working with challenging statistical problems in diverse areas of application. For this reason the Department's graduate programs, stressing this relationship of theory and practice, are designed to prepare the graduate equally well for an academic, industrial, or governmental position.

The Department would like each graduate student's learning experience in the program to be as productive and rewarding as possible. To help toward a successful experience, this handbook has been prepared to provide a variety of information that a graduate student might find useful during their time in the Statistics program. It describes the M.S. and Ph.D. degree programs and requirements, provides a range of academic information such as course descriptions and criteria for satisfactory progress in the programs, and information on aspects of financial support through teaching, research, and project assistantships. The information in this handbook, while extremely useful, should also be supplemented by individual consultation with faculty and staff, and appropriate departmental committees with regard to advising on academic programs and requirements, financial assistantships, and other matters.

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Rm 1220 MSC
1300 University Avenue
Madison WI 53706

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Student Handbook
Department of Statistics
University of Wisconsin-Madison

Introduction

Many centuries ago, a great glacier carved out four lakes (Mendota, Monona, Wingra and Waubesa) and formed an isthmus on which Madison was built in the early 19th century. The University of Wisconsin-Madison campus lies on the isthmus on the shore of Lake Mendota, a mile from the state capitol. The UW-Madison was established by the state legislature in 1849. The University's first graduating class in 1854 consisted of two students. Since its founding, the University has become one of the nation's leading public, land-grant institutions, with about 30,000 undergraduates and 11,000 graduate students, 2,300 faculty members and 3,600 academic staff. Madison has the largest concentration of graduate, professional, and research programs in the state as well as a broad balanced undergraduate program. The University has ranked among the top ten in the nation in every survey of scholarly reputation conducted since 1910. The University includes all races and creeds, and seeks to minimize economic barriers to admission with jobs, scholarships and loans.

About Madison

Madison is a pleasant medium-sized city (225,000 pop.) located in the lake region of southern Wisconsin. It is the State Capital with a large base for educational, research and government activities as well as university-industry interaction. The University and community offer outstanding intellectual, cultural, and recreational activities. Madison's quality of life always ranks very high among cities of comparable size.

The change of weather is known to be extreme. During the summer (June-September), temperatures are often above 80 degrees Fahrenheit (26 Celsius) and occasionally above 90 degrees (32 Celsius), while during the winter (December-March), you must expect many days of 0 degrees F (-17 Celsius) temperatures and even lower. The average snowfall is 42 inches. Some winters, from mid-December to March, the ground is covered with an inch or more of snow 60% of the time.

Statistics Today

Statistics today is a young and exciting subject which, in its breadth and diversity, affects virtually every aspect of modern living. It has been developed to deal in a rationally objective manner with the uncertainty which accompanies variation, be it as simple a phenomenon as the random outcome of tosses of coins, or such a highly complex phenomenon as the interplay of many factors which affect our environment. Statistics today derives its vitality from coping with the demands imposed by practical problems arising in all fields of scientific activity. These include the social, managerial, biological, agricultural, medical, physical, and engineering sciences. For example, in certain areas of scientific experimentation, the application of the statistical methods has been essential for progress. In many other areas of scientific experimentation, the development of suitable statistical methods is necessary for deeper understanding and insight. The department feels that its graduates should have not only a strong mathematical statistics foundation, but also a sound practical experience and the ability to deal with challenging statistical problems.

About the Department

The University of Wisconsin Statistics Department was established in 1960 by Professor George Box and today reflects the breadth and diversity of the subject of statistics in both theory and practice. The Department offers strong programs in Mathematical and Applied Statistics, and joint programs with Engineering, Business, Medicine, and Agricultural and Life Sciences. Currently, the department consists of about 35 faculty and affiliated faculty members, 155 graduate students, and 3 office staff members. Since 1963 over 450 PhD degrees and over 630 Master's degrees have been granted. The department is housed in the Medical Science complex at 1300 University Avenue.

Faculty/Research Interests:

- **Cecile Ané**, Professor: Statistical inference for evolutionary biology, computational biology
- **Richard Chappell**, Professor: Clinical Trials, linear models, survival analysis
- **Murray Clayton**, Professor: Applications of statistics to the agricultural, biological, and environmental sciences; spatial statistics, foundations
- **Bret Hanlon**, Assistant Professor: Inference for branching processes, high dimensional data analysis, variable selection, biological applications
- **Hyunseung Kang**, Assistant Professor: Causal inference, instrumental variables, and econometrics, developing methods for causal inference using large observational data with applications to epidemiology, genetics, social policy evaluation, and online data
- **Sunduz Keles**, Professor: Biostatistics, statistical genomics & computational biology, censored data analysis
- **Bret Larget**, Professor: Statistical applications in biology, computational biology, phylogenetics
- **Wei-Yin Loh**, Professor: Statistical inference; bootstrap theory and methods; decision tree algorithms for data mining and prediction with applications to missing value imputation, analysis of sample surveys, and subgroup identification for personalized medicine
- **Michael Newton**, Professor: Stochastic modeling, computational biology, empirical Bayesian analysis, ranking
- **Erik Nordheim**, Professor: Biological statistics, design and analysis, applied linear models
- **Peter Qian**, Professor: Big data analytics, search engine optimization, design of experiments, uncertainty quantification
- **Garvesh Raskutti**, Assistant Professor: Optimization theory, information theory and theoretical statistics to study computational and statistical aspects of large-scale inference problems
- **Karl Rohe**, Assistant Professor: Respondent-driven sampling, social network analysis, network clustering, machine learning, knowledge creation with statistics
- **Jun Shao**, Professor: Inference, asymptotic theory, resampling methods, linear and nonlinear models, model selection, sample survey
- **Kam-Wah Tsui**, Professor: Decision theory, survey sampling, statistical inference
- **Grace Wahba**, Professor: Multivariate function estimation, model building with splines, inverse problems, applications in meteorology, biostatistics, machine learning
- **Sijian Wang**, Associate Professor: Statistical learning, high-dimensional data analysis, variable selection, survival analysis, Bioinformatics
- **Yazhen Wang**, Professor: Financial time series & high frequency finance, quantum simulation & computation, ultra-high inference, wavelets, nonparametric smoothing, change points, long-memory process, & order restricted statistical inferences
- **Brian Yandell**, Professor: Nonparametrics, biometry, gene mapping, generalized linear models
- **Ming Yuan**, Professor: Stochastic modeling and inference, Nonparametric and high dimensional inference, Biomedical and financial applications
- **Anru Zhang,** Assistant Professor: high-dimensional statistical inference, statistical learning theory, large-scale multiple testing
- **Chunming Zhang**, Professor: Neuroinformatics and bioinformatics, machine learning and data mining, multiple testing, large-scale simultaneous inference and application, statistical methods in finance econometrics, non- and semi-parametric estimation and inference, functional and longitudinal data analysis
- **Zhengjun (Henry) Zhang**, Professor: Extreme value analytics for big data and financial time series analysis; risk analysis in finance, insurance, environmental studies, and seismic data;

nonlinear/asymmetric causal inference; hi-dimensional inference; medical statistics; stochastic optimization and simulation technique; Bayesian inference for time series

- **Jun Zhu**, Professor: Spatial statistics, biometry, environmental statistics, spatial demography, statistical ecology

Affiliated Faculty

- **David Anderson**, Assistant Professor: Developing and analyzing new computational methods for the stochastic models that arise in the biosciences; theoretical study of the mathematical models arising in the biosciences
- **Karl Broman**, Professor: Statistical genomics, computational biology, statistical computing, data visualization, general applied statistics
- **Moo Chung**, Associate Professor: Computational neuro-anatomy, random fields, image analysis, functional data analysis
- **David DeMets**, Professor: Clinical trials, epidemiology, sequential analysis
- **Christina Kendziorski Newton**, Professor: Statistical genetics and computational biology, Bayes and empirical Bayes methods
- **Ronald Gangnon**, Associate Professor: Clustering, model selection, order-restricted inference, measurement reliability, survival analysis and interim monitoring
- **KyungMann Kim**, Professor: Sequential methods, clustered data analysis, categorical data analysis, biostatistics, clinical trials methods, epidemiology methods
- **Mary Lindstrom**, Professor: Functional data analysis, semiparametric models, nonlinear random effects models, free knot spline regression, analysis of clustered data, statistical computing
- **Po-Ling Loh**, Assistant Professor: High-dimensional statistics, compressed sensing, nonconvex optimization, robust statistics, network inference
- **Mari Palta**, Professor: Biostatistical methods and epidemiology
- **Paul Rathouz**, Professor: Missing data in models for highly stratified or longitudinal data, generalized linear models, methods for behavior genetic designs, and outcome-dependent sampling for longitudinal data. Most of his current applied statistical work is in the areas of developmental psychopathology and health services research
- **Timo Seppalainen**, Professor: Motion in a random medium, interacting particle systems, large deviation theory
- **Menggang Yu**, Associate Professor: Clinical and preclinical biostatistics, health service and health outcome research, predictive modeling, failure time analysis, missing data and measurement error, meta-analysis, semiparametric methods
- **Yingqi Zhao**, Assistant Professor: Dynamic treatment regimes, personalized medicine, clinical trials, empirical processes, machine learning, survival analysis, public health surveillance

Emeritus

- **Douglas Bates**, Professor Emeritus: Nonlinear regression, statistical computing
- **Norman Draper**, Professor Emeritus: Experimental design, linear models, nonlinear estimation
- **Richard Johnson**, Professor Emeritus: Life testing & reliability, statistical inference, large sample theory, applied multivariate analysis
- **Robert Wardrop**, Professor Emeritus: Online statistical education, statistics in sports
- ***Kjell Doksum**, Senior Research Scientist: Nonparametric regression, biostatistics, high dimensional data analysis

Office Staff

Denise Runyan	(Dept. Administrator)	Rm 1220B	262-2937	runyan@stat.wisc.edu
Nancy Brinkerhoff	(Curricular Rep.)	Rm 1220C	262-1009	nancyb@stat.wisc.edu
Andrea Palm	(Graduate Coordinator)	Rm 1220D	262-2598	palm@stat.wisc.edu

Contact **Denise** if you have questions regarding:

- Payroll
- Appointment information
- Insurance
- Visa/Tax/I-9 Information
- Copy Machine ID number
- Faculty and TA teaching evaluations
- Tuition remission
- Employment verification letter

Contact **Nancy** if you have questions regarding:

- Course timetable information
- Registration authorization
- Classroom/exam room reservations
- Grades/courses
- Enrollment
- Office assignments and keys
- Office supplies
- Department directory
- Posting announcements
- Tutorial lab schedule
- Room and projector reservations
- Large quantity print orders

Contact **Andrea** if you have questions regarding:

- Advisor grade forms
- Advisor change form
- Grad School warrants or other documents (add/change major, etc.)
- Master's exam, Qualifying exam, Prelim, PhD defense
- PhD minor
- Mailbox or package delivery
- Entering/exiting the department
- Department seminars
- General information not listed above

Statistics Department Committees, 2016-17

Committee	Purpose	Members (lead(s) in bold)
Computing & Web	Departmental computing and web needs, policies, and plans.	**Qian**, Raskutti, Cammilleri, Runyan
Curriculum and Degree Requirements	Work on policy issues regarding the curriculum and degree requirements.	**Clayton**, Loh, Keles
Gateway Courses	Steer and oversee gateway courses and handle issues that arise.	**Zhu**, Larget, Loh, S.Wang, Benninger
Faculty Hiring	If hiring allowed, write PVL (Fall), attend diversity training (Fall), review applications (Dec-Jan), arrange interviews (Jan-Mar), coordinate faculty and executive committee review of applicants.	**Loh**, Wahba, Yuan
Graduate Student Admissions (traditional program)	Evaluate applications for fall (around 550, Dec-Feb)	**Z. Zhang**, Rohe, Bean, Wahba, Nordheim, A. Zhang, C. Zhang, Yu, Palm, Runyan
MS Exam	Plan the MS exam each semester, make appropriately sized problems, and evaluate the exam.	**Chappell,** Larget, Newton, Nordheim
PhD Qualifier Exam	Determine that the qualifier is well and fairly constructed. Individual faculty expertise is balanced to ensure adequate representation for all problem areas needed.	**Keles**, Clayton, Loh, Raskutti, Shao, C. Zhang, A. Zhang, Bean, Y. Wang
VISP & Master of Statistics, Data Science option (MS-DS)	Oversee admissions, development, and requirements for the visiting international student program (VISP) and the professional master's program (MS-DS).	**Shao,** Y. Wang, Zhu
Secretary for Faculty Meetings	Take minutes at the faculty meetings and prepare documents for distribution.	**Newton**, Tsui (backup)

Seminar	In charge of weekly departmental seminars with duties including inviting speakers, arranging schedules, and hosting talks.	**A. Zhang**, Z. Zhang, Runyan, Palm
Climate	Handle departmental climate issues.	
Strategic Planning	Coordinate development and review of vision, mission, and strategic plan; investigate creative funding; reassess interconnections and roles across campus.	**Y. Wang**, Clayton, Shao, Yuan, Runyan
TA and Instruction	Assign course instructors and TAs before each semester; train TAs and evaluate TA performance during and at the end of each semester.	**Zhu**, Shao, Benninger, Brinkerhoff, Runyan
Undergraduate Major	Advise majors and oversee the undergraduate program.	**Ane**, Nordheim, Bean, Benninger, SSC

Section 2

Information For New Students

New Graduate Students for Fall 2016 - Traditional MS/PhD Program

Name	Last University Attended	Most Recent Degree	Country of Citizenship
Aalipur Hafshejani, Behzad	University of Texas at El Paso	Statistics	Iran
Chen, Fan	Zhejiang University	Mathematics & Applied Mathematics	China
Chen, Rui	Tsinghua University	Mathematics	China
Covington, Alexander	Georgia Institute of Technology	Physics	USA
Green, Chelsey	UW-Madison	Mathematics	USA
Hu, Bowen	Nankai University	Statistics	China
Huang, Kunling	National Taiwan University	Economics	Taiwan
Hung, Tzu Hsiang	National Chiao Tung University	Applied Mathematics	Taiwan
Johnson, Michael	Washington University	Biostatistics	USA
Johnston, Liam	Gustavus Adolphus College	Mathematics	USA
Kerwin, Colleen	University of Texas at Austin	Mathematical Sciences	USA
Kim, Yongjoon	Columbia University	Statistics	Korea
Kutzler, Michael	UW-Parkside	Mathematics	USA
Luo, Victor	Williams College	Mathematics	USA
Maronge, Jacob	Louisiana State University	Biostatistics	USA
Mei, Yifan	U of Intl Business & Economics	Economics and Finance	China
Nazarovs, Jurijs	Duke University	Economics	Latvia
Ng, Tun Lee	University of Texas at El Paso	Statistics	Malaysia
Song, Jie	UW-Madison	Statistics (Data Science Option)	China
Spaw, Jonathon	Millikin University	Mathematics	USA
Wu, Yongfeng	Tsinghua University	Pure and Applied Mathematics	China
Yu, Zhongjie	Univ of Science & Technology of China	Statistics	China
Yun, Seulkee	Yonsei University	Applied Statistics	Korea
Zheng, Lili	Univ of Science & Technology of China	Statistics	China
Zhou, Yuchen	Peking University	Statistics	China

New Graduate Students for Fall 2016 - Data Science Program (MS-DS)

Name	Last University Attended	Most Recent Degree	Country of Citizenship
Bai, Yue	Renmin University	Statistics	China
Cao, Dingxian	East China Normal University	Statistics	China
Chen, Jialu	East China Normal University	Financial Engineering	China
Chen, Jiaming	Nanjing University	Mathematics	China
Chen, Ruifeng	Shandong University	Statistics	China
Ding, Rouyi	East China Normal University	Statistics	China
Fang, Jiyuan	Nankai University	Statistics	China
Feng, Boyuan	Nanjing University	Mathematics	China
Fu, Xiaohan	Xiamen University	Economics	China
Geng, Sinong	Nankai University	Statistics	China
Guan, Ruisheng	Southeast University	Mathematics	China
Guo, Sheng	East China Normal University	Financial Engineering	China
Han, Xu	Nankai University	Statistics	China
He, Yuhan	Xiamen University	Economics	China
Li, Yijing	Southeast University	Statistics	China
Liu, Xuchun	Shandong University	Mathematics	China
Lv, Yiming	Nanjing University	Mathematics	China
Min, Shixuan	Shandong University	Statistics	China
Ni, Zijian	Nankai University	Statistics	China
Nie, Guanyu	Shandong University	Financial Mathematics	China
Niu, Shuo	East China Normal University	Statistics	China
Niu, Tong	Xiamen University	Economics	China
Pan, Rong	Shandong University	Mathematics	China
Qu, Yang	Shandong University	Statistics	China
Sun, Yang	East China Normal University	Statistics	China
Tai, Zhener	East China Normal University	Statistics	China
Wang, Chuyi	Nankai University	Statistics	China
Wang, Shuoyang	Shandong University	Mathematics	China
Wang, Weihao	Renmin University	Statistics	China
Wang, Yiming	Nankai University	Statistics	China
Wang, Yiwen	East China Normal University	Financial Engineering	China
Wang, Yueyao	East China Normal University	Financial Engineering	China
Wang, Yuhui	East China Normal University	Statistics	China
Wu, Huanwen	East China Normal University	Statistics	China
Yang, Luning	Nanjing University	Statistics	China
Yang, Mingyi	East China Normal University	Statistics	China
Yang, Zeyu	Southeast University	Statistics	China
Yin, Yida	East China Normal University	Mathematics	China
Yu, Peiyang	Shandong University	Statistics	China
Zhang, Chengning	Nankai University	Statistics	China
Zhou, Xiaoyu	Nanjing University	Statistics	China
Zhou, Youjia	Renmin University	Statistics	China
Zhu, Qiuyun	Nanjing University	Statistics	China
Zhu, Weifeng	Nanjing University	Statistics	China

Statistics Computing Lab (SCL) Info

Staff: Mike Cammilleri * Paul Beebe * Colleen Brabender

Account Activation:

YOU WILL NEED YOUR CAMPUS NETID in order to activate your Statistics department account. If you do not have a NetID (campus login) or ID number please obtain this information and an ID card at Photo ID in Union South.

To activate your Statistics account visit http://www.stat.wisc.edu/services/account-activation. Most information about computing in Statistics will be found under the 'Services' tab on our department website.

!!!! Your campus NetID and Statistics account are not the same. !!!!

Resources:

SCL Email: lab@stat.wisc.edu
SCL Room: 1280 Medical Sciences Center

Campus Level Questions (NetID, WiscMail (<netid>@wisc.edu))
264-HELP (264-4357)

Logging In:

Computers in the department are kiosks which means you can log into any computer and get the same desktop environment. To log in you must enter your Statistics user name and password. Note that this is not the same as your campus NetID username and password.

Email:

Office 365 campus email is default. There you will receive your @wisc.edu as well as your departmental @stat.wisc.edu email. You can access email from http://wiscmail.wisc.edu/

Printing:

Printer names are based on room number: pr1270, pr1224, etc. You have a paper quota of 2000 pages per semester. Do not print entire books, instead use campus printing services or shops such as Bob's Copy Shop for large print jobs. Printing from laptops is possible. For more information visit:
http://www.stat.wisc.edu/services/printing-from-a-laptop-to-statistics-printers

Network:

You have a network storage limit of 100GB.

Useful commands to use in the xterm window (command line):
Check disk quota: fs lq ~
Check paper quota: lpquota
Change your password: passwd
List directory contents: ls
Change to home directory: cd
Run R program: R
Run SAS program: sas
Change password: passwd

Google is your friend for learning Linux commands.

Statistical Computing:

From a terminal window you can ssh into larger servers to run longer computational jobs in R, SAS, Matlab, etc.

Computation servers for statistical computing and research ONLY:

For general use such as daily R jobs and short running tasks
bigmem01.stat.wisc.edu
bigmem02.stat.wisc.edu
bigmem03.stat.wisc.edu
bigmem04.stat.wisc.edu

For larger jobs and better efficiency, use the Statistics HPC scheduler system (High Performance Computing Cluster) available early this Fall semester. More information on HPC use will be announced via email.

Current HPC submit node
lunchbox.stat.wisc.edu

Computer Lab:

A modest computer lab is available with six Linux terminals in room 1270.

Visitor and Information Programs

Welcome

Your gateway to campus, Visitor & Information Programs (VIP) serves as the central access point for visitors, students, faculty and staff for answering questions, locating information and navigating UW–Madison and the surrounding community.

About VIP

In-Person: Visitor & Information Programs has two wonderful information and welcome centers designed to assist visitors and members of the campus community:

Union South, 1308 W. Dayton St.

The new Union South, which opened on April 15, 2011, is nestled between the Computer Sciences and Statistics Building and Engineering Hall on the south side of campus. This building was designed in an organic prairie-style architecture, influenced by Frank Lloyd Wright.All prospective student visits and campus walking tours begin at Union South.

Memorial Union, 800 Langdon St.

Opened on October 5, 1928, the Memorial Union sits on the shores of Lake Mendota between Helen C. White Library and the Armory (Red Gym). This building is most recognized for its classic architecture and bright green, orange and yellow starburst Terrace chairs.

E-Mail: askbucky@uwmad.wisc.edu
Phone: 608-263-2400
FAX: 608-265-3277 (fax only, please)
TTY: 1-800-WI-RELAY (800-947-3529)

Mail: Visitor & Information Relations Administrative Offices
University of Wisconsin-Madison
Union South
1308 W. Dayton St.
Madison, WI 53715-1149

**Students with RA, TA, PA, or Fellowship appointments receive State Group Health Insurance through their appointment, and generally do not choose to enroll in SHIP

SHIP for Domestic Students

Who needs health insurance?

Everyone needs comprehensive health insurance, because unexpected accidents and illnesses do occur, and treatment can be very expensive.

What about University Health Services?

UHS provides medical and mental health services to all enrolled students, but is not a substitute for health insurance. UHS is not open evenings and weekends and does not provide emergency care, hospitalization, diagnostic tests or specialty care for complex problems.

Already have health insurance?

Even if you have health insurance (for example, through a parent's plan), we urge you to review it carefully to ensure that your plan provides you with sufficient coverage while you are in Madison. Many plans limit coverage to emergency room care only while you are out of the plan area, and you may have to take time off school to return to your hometown for treatment, or even drop out of school completely.

Many insurance plans require enrollees to pay a large portion of their medical costs. High deductibles, copayments, and coinsurance can make members more reluctant to seek medical attention when they need it. In contrast, the plan deductible for SHIP domestic students is just $600 for in-network services. Combined with a low in-network member coinsurance of 20%, SHIP domestic students can access the care they need without worrying about excessive bills.

Next steps

If you don't have insurance or aren't adequately covered, you can enroll in the UW-Madison Student Health Insurance Plan, also known as SHIP.

SHIP exists to make sure that all UW–Madison students have access to a comprehensive insurance plan. By administering the plan locally at UHS and utilizing the expert care of

UHS providers, we keep costs as low as possible—ensuring the plan is tailored to the needs of our members.

In addition to the medical and mental health services provided by UHS, SHIP members are protected by a nationwide network of hospitals, clinics, and specialized medical services.

In other words, SHIP provides coverage not only in Madison—but in your hometown and beyond—even overseas.

SHIP members also have access to a range of no cost preventive services, including travel and meningococcal vaccines, the HPV vaccine, a contraceptive benefit and an annual eye exam.

It is also important to note that SHIP is not motivated by profit. This allows us to utilize any plan savings to enhance benefits for our members.

SHIP is now accepting Fall and Annual enrollments. SHIP coverage is effective from August 15, 2016.

- Enroll at the SHIP Office – 9am to 5pm, Monday – Friday (MasterCard/VISA/Discover/Check)
- Enroll by telephone (608) 265-5232 – 9am to 5pm, Monday – Friday (MasterCard/VISA/Discover)

The SHIP office must receive enrollment and full payment by the stated deadline.

Fall Enrollment Deadline: September 14, 2016

SHIP Office | University Health Services
333 East Campus Mall | 7th Floor | Madison, WI 53715-1381
Phone: 608-265-5232 | Fax: 608-265-5668
shipmail@uhs.wisc.edu

DOMESTIC PLAN SUMMARY OF BENEFITS*

SHIP members must use University Health Services (UHS) for ***all available primary, urgent, and preventive care.*** Most services at UHS are fully covered for SHIP members with no out-of-pocket expense.

Medical and Mental Health Counseling services at UHS include: Primary Care; Women's Health; STI Testing and Treatment; Allergy/Immunization; 24-Hour Crisis Services; Individual, Couple/Partner, and Group Counseling; Alcohol and Other Drug Assessment and Treatment; Psychiatric Services.

Please remember that UHS is not open evenings and weekends and does not provide hospitalization, emergency room care, pediatric care, or specialty care for complex problems. However, SHIP members are well protected nationwide by In-Network hospitals, clinics, and specialized medical services. The SHIP Customer Service team can assist you with identifying In-Network providers.

SHIP coverage also includes an annual eye exam at Madison Optometric Center, global Out-Of-Network coverage, and worldwide assistance (including medical evacuation and repatriation).

Benefit Category	Health Care at UHS	Health Care In-Network**	Health Care Out-Of-Network
Plan Year Deductible	None	$600 *(per person)*	$1,200 *(per person)*
Primary/Urgent Care	No member cost	20% member coinsurance *(after deductible)*	40% member coinsurance *(after deductible)*
Diagnostic Services	No member cost *(x-rays and lab tests ordered by UHS providers)*	20% member coinsurance *(after deductible)*	40% member coinsurance *(after deductible)*
Preventive Care	No member cost	No member cost for covered preventive services not available at UHS	Not applicable
Mental Health and Chemical Dependency	No member cost	20% member coinsurance *(after deductible)*	40% member coinsurance *(after deductible)*
Hospital Services *(including inpatient and outpatient professional services)*	Not applicable	20% member coinsurance *(after deductible)*	40% member coinsurance *(after deductible)*
Plan Year Maximum Out-of-Pocket Expense *(coinsurance, copayments, and deductible)* *Note: Out-of-Pocket Expense Change*	Not applicable	$3,000 *(per person)* *(for covered services)*	$6,000 *(per person)* *(for covered services)*
Emergency Room *(life-threatening medical emergencies)*	Not applicable	No member cost *(after a $50 copayment and in-network deductible)*	
Contraceptive Benefit	No member cost for prescribed FDA-approved contraceptives. A copayment will apply if a member receives a brand name contraceptive when a generic equivalent is available (unless medically necessary).		
Prescription Drugs *Note: Member Copayment Change*	Generic = $15 copayment; Brand = $35 copayment; Non-Formulary = $60 copayment; Specialty Drugs = 20% member responsibility up to a max of $150 per fill		
Maximum Lifetime Benefit	*Unlimited*		

2016–17 PREMIUM RATES — DOMESTIC PLAN

COVERAGE TYPE	ANNUAL 8/15/2016 TO 8/14/2017	FALL 8/15/2016 TO 1/14/2017	SPRING/SUMMER 1/15/2017 TO 8/14/2017
Student only (age 25 and under)	$1,992	$830	$1,162
Student only (age 26 and above)	$3,492	$1,455	$2,037
Student (age 25 and under) + spouse/partner	$6,516	$2,715	$3,801
Student (age 26 and above) + spouse/partner	$8,772	$3,655	$5,117
Student (age 25 and under) + child	$5,988	$2,495	$3,493
Student (age 26 and above) + child	$8,184	$3,410	$4,774
Student (age 25 and under) + family	$10,416	$4,340	$6,076
Student (age 26 and above) + family	$13,488	$5,620	$7,868

Premium rates are based on the student's age as of August 15, 2016 (the beginning of the plan year).
We use this age to calculate the rate plan during the entire plan year.

** This is a benefits summary only. Exceptions may apply. Benefits are payable in accordance with the online Plan Document.*
*** In-Network facilities near campus include St. Mary's Hospital, Meriter Hospital, and UW Hospital and Clinics.*

**Students with RA, TA, PA, or Fellowship appointments receive State Group Health Insurance through their appointment. International students who have State Group Health Insurance are not required to purchase SHIP.

SHIP for International Students

Health insurance compliance

All international students and visa dependents are required to have UW–Madison approved health insurance coverage. You must enroll yourself and any visa dependents in SHIP or file a qualifying waiver by the compliance deadline unless you qualify for an automatic waiver.

Safeguarding your health

Medical treatment in the United States can be very expensive, and quality insurance coverage is essential. SHIP is a comprehensive health insurance plan that is specifically designed to safeguard the health of UW–Madison students. By administering the plan locally at University Health Services (UHS), we keep costs as low as possible—ensuring that the plan is tailored to the needs of our members.

Most services at UHS, including primary, urgent and preventive care, are fully covered for SHIP members with no out-of-pocket expense. (Please note that UHS is not open evenings and weekends and does not provide hospitalization, emergency room care, pediatric care, or specialty care for complex problems). In addition to the medical and mental health services provided by UHS, SHIP members are protected by a nationwide network of hospitals, clinics, and specialized medical services.

It is also important to note that SHIP is not motivated by profit, which enables us to pass on any plan savings to our members. For example, for 2015/16, we have been able to lower or freeze SHIP premiums while at the same time expanding plan benefits – including pediatric dental and vision coverage.

The health care system in the United States can be overwhelming, and the SHIP Customer Service team is here to assist you with any benefits or claims issues that you may encounter.

Compliance Deadlines for International Students

The SHIP office must receive a completed enrollment application and full payment or a waiver application, on or before the posted deadlines.

Annual and Fall Compliance Deadline: September 14

- Open enrollment is July 15-September 14
- Annual SHIP coverage is effective August 15 and terminates August 14
- Fall SHIP coverage is effective August 15 and terminates January 14

Spring/Summer Compliance Deadline: February 14

- Open enrollment is December 15-February 14
- Spring/Summer SHIP coverage is effective January 15 and terminates August 14

Summer Compliance Deadline (Newly Eligible Students Only): Within 31 days of the first day of class

- Summer SHIP coverage is effective from the first day of class and terminates on August 14.

SHIP is now accepting Fall and Annual enrollments. SHIP coverage is effective from August 15, 2016. The SHIP premium must be paid at the time of enrollment.

- Enroll at the SHIP Office – 9am to 5pm, Monday – Friday (MasterCard/VISA/Discover/Check)
- Enroll by telephone (608) 265-5232 – 9am to 5pm, Monday – Friday (MasterCard/VISA/Discover)

Waivers

Waivers will only be approved if you meet one of the qualifying criteria as listed on the waiver application. **Please read the Waiver Application carefully to ensure that you understand the requirements and do not purchase insurance which does not meet the SHIP waiver requirements. If you do not qualify for a waiver, you are required to enroll in SHIP.**

Automatic Waivers

You do not need to file a Waiver Application if you are employed at UW–Madison and are receiving health insurance benefits that are effective on or before September 1, 2016, for fall or February 1, 2017, for spring. If you meet these criteria, the SHIP office will file an automatic waiver on your behalf.

If you are employed at UW–Madison and are receiving health insurance benefits, but are registered for summer classes only, you must file your own waiver application with the SHIP office.

Dependents of UW–Madison employees who are also international students must file their own waiver application with the SHIP office.

Failure to Comply

International students who fail to purchase SHIP or file a qualifying waiver by the compliance deadline will be automatically enrolled in SHIP.

International students who make payment after the compliance deadline will be charged a $100 late fee and required to pay SHIP premiums from the beginning of the initial compliance period.

International students who file a qualifying waiver after the compliance deadline will be charged a $100 late fee in addition to any required premiums.

International students who fail to meet the compliance deadline will be considered non-compliant with the health insurance requirements of UW-Madison and an academic hold will be placed on the student's academic record. An academic hold prevents students from adding classes, dropping classes or obtaining a copy of their transcripts or diploma.

An academic hold will not be removed until the international student is compliant. Outstanding balances must be made by VISA/MasterCard/Discover or exact cash. If the outstanding balance remains unpaid, the account will be referred to a collections agency.

- Pay an outstanding balance at the SHIP office -- 9 am to 5 pm, Monday - Friday
- Pay an outstanding balance by telephone (608) 265-5232 -- 9 am to 5 pm, Monday - Friday (MasterCard/VISA/Discover)

SHIP Office | University Health Services
333 East Campus Mall | 7th Floor | Madison, WI 53715-1381
Phone: 608-265-5232 | Fax: 608-265-5668
shipmail@uhs.wisc.edu

INTERNATIONAL STUDENT PLAN SUMMARY OF BENEFITS*

SHIP members must use University Health Services (UHS) for ***all available primary, urgent, and preventive care.*** Most services at UHS are fully covered for SHIP members with no out-of-pocket expense, including travel and meningococcal vaccines, the HPV vaccine, and a contraceptive benefit.

Medical and Mental Health Counseling services at UHS include: Primary Care; Women's Health; STI Testing and Treatment; Allergy/Immunization; 24-Hour Crisis Services; Individual, Couple/Partner, and Group Counseling; Alcohol and Other Drug Assessment and Treatment; Psychiatric Services.

Please note that UHS is not open evenings and weekends and does not provide hospitalization, emergency room care, pediatric care, or specialty care for complex problems. However, SHIP members are well protected nationwide by In-Network hospitals, clinics, and specialized medical services. The SHIP Customer Service team can assist you with identifying In-Network providers.

SHIP coverage also includes an annual eye exam at Madison Optometric Center, global Out-Of-Network coverage, and worldwide assistance (including medical evacuation and repatriation).

Benefit Category	Health Care at UHS	Health Care In-Network**	Health Care Out-Of-Network
Plan Year Deductible	None	None	$500 *(per person)*
Primary/Urgent Care	No member cost	10% member coinsurance	40% member coinsurance *(after deductible)*
Diagnostic Services	No member cost *(x-rays and lab tests ordered by UHS providers)*	10% member coinsurance	40% member coinsurance *(after deductible)*
Preventive Care	No member cost	No member cost for covered preventive services not available at UHS	Not applicable
Mental Health and Chemical Dependency	No member cost	10% member coinsurance	40% member coinsurance *(after deductible)*
Emergency Room *(life-threatening medical emergencies)*	Not applicable	No member cost	No member cost
Hospital Services *(including inpatient and outpatient professional services)*	Not applicable	10% member coinsurance	40% member coinsurance *(after deductible)*
Contraceptive Benefit	No member cost for prescribed FDA-approved contraceptives. A copayment will apply if a member receives a brand name contraceptive when a generic equivalent is available (unless medically necessary).		
Plan Year Maximum Out-of-Pocket Expense *(coinsurance, copayments, and deductible)*	Not applicable	$2,000 *(per person)* *(for covered services)*	$4,000 *(per person)* *(for covered services)*
Prescription Drugs	Generic = $5 copayment; Brand = $15 copayment; Non-Formulary = $25 copayment; Specialty Drugs = *10% member responsibility up to a max of $150 per fill*		
Maximum Lifetime Benefit	*Unlimited*		

2016–17 PREMIUM RATES — INTERNATIONAL STUDENT PLAN

COVERAGE TYPE	ANNUAL 8/15/2016 TO 8/14/2017	FALL 8/15/2016 TO 1/14/2017	SPRING/SUMMER 1/15/2017 TO 8/14/2017
Student only (age 25 and under)	$1,320	$550	$770
Student only (age 26 and above)	$1,944	$810	$1,134
Student (age 25 and under) + spouse/partner	$4,272	$1,780	$2,492
Student (age 26 and above) + spouse/partner	$5,268	$2,195	$3,073
Student (age 25 and under) + child	$3,912	$1,630	$2,282
Student (age 26 and above) + child	$4,860	$2,025	$2,835
Student (age 25 and under) + family	$6,804	$2,835	$3,969
Student (age 26 and above) + family	$8,160	$3,400	$4,760

Premium rates are based on the student's age as of August 15, 2016 (the beginning of the plan year).
We use this age to calculate the rate during the entire plan year.

** This is a benefits summary only. Exceptions may apply. Benefits are payable in accordance with the online Plan Document.*

*** In-Network facilities near campus include St. Mary's Hospital, Meriter Hospital, and UW Hospital and Clinics.*

Housing

Graduate students may live in University housing or in private apartments. For information about University housing, see http://www.housing.wisc.edu/residencehalls.htm.

For off-campus housing after you arrive on campus, contact Campus and Visitor Relations, 1308 W. Dayton St. (Union South). Phone is 608-263-2452. You can also search for rentals at http://housing.civc.wisc.edu/quicksearch.asp. Rentals are usually subject to contracts and payment of both one month's rent and a security deposit equal to one month's rent.

International students may also contact the International Student Services at the Red Gym, 716 Langdon Street, Madison, WI 53706. Phone (608) 262-2044.

Temporary housing (1-3 days) for new international students is offered, when available, by Madison volunteers. Contact MFIS, Inc., preferably at least six weeks in advance at the Red Gym, 716 Langdon Street, Madison WI 53706. Phone (608) 263-4010. Be sure to include your name, address, arrival date and gender.

OPPORTUNITIES FOR STUDENT INVOLVEMENT

As a graduate student at UW-Madison, you have a multitude of opportunities to become involved on campus and in your academic discipline. This involvement enhances your academic, professional, and social development.

Student Representation in Governance

Associated Students of Madison (ASM) - The Associated Students of Madison (ASM) is the campus-wide student governance organization at UW–Madison. Graduate and undergraduate representatives are elected to the 33-member ASM Student Council based on their respective college or school. The student council has regular biweekly meetings open to all students. Learn more here: http://www.asm.wisc.edu/

Teaching Assistants' Association (TAA) - The Teaching Assistants' Association (AFT Local 3220) is the labor union for TAs and PAs at UW-Madison. As a result of decades of organizing and by working together as a union, graduate students at UW-Madison have achieved good health benefits, tuition remission, and many other gains. The TAA is a democratic union run by the members. All key policy decisions are made at monthly membership meetings. Learn more here: http://taa-madison.org/

Registered Student Organizations

There are more than 750 student organizations on campus. The best way to seek out current organizations is to visit the **Center for Leadership and Involvement** (CFLI) website, www.cfli.wisc.edu, and visit the Registered Student Organization directory. This list will not include unregistered student organizations, and you may find that there are groups in your department that you would like to get involved with as well. If you are interested in officially registering an organization you are involved, you must register at www.cfli.wisc.edu. Once registered through CFLI, your organization is eligible for funding from ASM, and your group can reserve rooms in the Union and access other resources.

Outreach and Community Connections

The Wisconsin Idea is the principle that education should influence and improve people's lives beyond the university classroom. For more than 100 years, this idea has guided the university's work. Learn how you can get involved at http://www.wisc.edu/public-service/.

The Morgridge Center for Public Service connects campus with community through service, active civic engagement, community-based learning and research, and more. Explore opportunities at http://www.morgridge.wisc.edu/.

If you would like additional guidance on this section of the handbook, please contact Alissa Ewer at the Graduate School – aewer@grad.wisc.edu.

Academic, Non-Academic, and Research Misconduct

This graduate program, the Graduate School, and the Division of Student Life all uphold the UW-System policies and procedures in place for academic and non-academic misconduct. In addition, graduate students are held to the same standards of responsible conduct of research as faculty and staff. The department expects professional, ethical, and respectful conduct in all interactions. Students may be disciplined or dismissed from the graduate program for misconduct or disregard for professional conduct expectations regardless of their academic standing in the program. Separate and apart from a violation of Professional Conduct, a student may face University disciplinary action with regard to the same action. Students are responsible for reading the information here as well as the information published on all the relevant web sites.

Academic Misconduct

Academic misconduct is an act in which a student (UWS 14.03(1)):

1. seeks to claim credit for the work or efforts of another without authorization or citation;
2. uses unauthorized materials or fabricated data in any academic exercise;
3. forges or falsifies academic documents or records;
4. intentionally impedes or damages the academic work of others;
5. engages in conduct aimed at making false representation of a student's academic performance; or
6. assists other students in any of these acts.

Examples of academic misconduct include but are not limited to:

1. cutting and pasting text from the Web without quotation marks or proper citation;
2. paraphrasing from the Web without crediting the source;
3. using notes or a programmable calculator in an exam when such use is not allowed;
4. using another person's ideas, words, or research and presenting it as one's own by not properly crediting the originator;
5. stealing examinations or course materials;
6. changing or creating data in a lab experiment;
7. altering a transcript;
8. signing another person's name to an attendance sheet;
9. hiding a book knowing that another student needs it to prepare for an assignment;
10. collaboration that is contrary to the stated rules of the course; or
11. tampering with a lab experiment or computer program of another student.

Additional information regarding Academic Misconduct:

Graduate School Policy & Procedure: Misconduct, Academic:
http://grad.wisc.edu/acadpolicy/#misconductacademic

Dean of Students Office: Information for Students: How to Avoid Academic Misconduct? What Happens If I engage in Academic Misconduct? What Should I do If I know a Classmate is Cheating?
http://www.students.wisc.edu/doso/students.html

Dean of Students Office: Academic Misconduct Flowchart:
http://students.wisc.edu/doso/misconductflowchart.html

University of Wisconsin System: Chapter UWS 14: Student Academic Disciplinary Procedures:
http://students.wisc.edu/doso/docs/uws_chapter_14.pdf

Non-Academic Misconduct

The university may discipline a student in non-academic matters in the following situations:

1. for conduct which constitutes a serious danger to the personal safety of a member of the university community or guest;
2. for stalking or harassment;
3. for conduct that seriously damages or destroys university property or attempts to damage or destroy university property, or the property of a member of the university community or guest;
4. for conduct that obstructs or seriously impairs university-run or university-authorized activities, or that interferes with or impedes the ability of a member of the university community, or guest, to participate in university-run or university-authorized activities;
5. for unauthorized possession of university property or property of another member of the university community or guest;
6. for acts which violate the provisions of UWS 18, Conduct on University Lands;
7. for knowingly making a false statement to any university employee or agent on a university-related matter, or for refusing to identify oneself to such employee or agent;
8. for violating a standard of conduct, or other requirement or restriction imposed in connection with disciplinary action.

Examples of non-academic misconduct include but are not limited to:

1. engaging in conduct that is a crime involving danger to property or persons, as defined in UWS 18.06(22)(d);
2. attacking or otherwise physically abusing, threatening to physically injure, or physically intimidating a member of the university community or a guest;
3. attacking or throwing rocks or other dangerous objects at law enforcement personnel, or inciting others to do so;
4. selling or delivering a controlled substance, as defined in 161 Wis. Stats., or possessing a controlled substance with intent to sell or deliver;
5. removing, tampering with, or otherwise rendering useless university equipment or property intended for use in preserving or protecting the safety of members of the university community, such as fire alarms, fire extinguisher, fire exit signs, first aid equipment, or emergency telephones; or obstructing fire escape routes;
6. preventing or blocking physical entry to or exit from a university building, corridor, or room;
7. engaging in shouted interruptions, whistling, or similar means of interfering with a classroom presentation or a university-sponsored speech or program;
8. obstructing a university officer or employee engaged in the lawful performance of duties;
9. obstructing or interfering with a student engaged in attending classes or participating in university-run or university-authorized activities;
10. knowingly disrupting access to university computing resources or misusing university computing resources.

Additional information regarding Non-Academic Misconduct

Graduate School Academic Policies & Procedures: Misconduct, Non-Academic:
http://grad.wisc.edu/acadpolicy/#misconductnonacademic

Dean of Students Office: Non-Academic Misconduct Standards Statement:
http://students.wisc.edu/doso/nonacadmisconduct-statement.html

Dean of Students Office: Non-Academic Misconduct Process
http://students.wisc.edu/doso/nonacadmisconduct.html

University of Wisconsin System: Chapter UWS 17: Student Non-Academic Disciplinary Procedures:
http://students.wisc.edu/doso/docs/NewUWS%2017.pdf

University of Wisconsin System: Chapter UWS 18: Conduct on University Lands:
http://students.wisc.edu/doso/docs/NewUWS%2018.pdf

Research Misconduct

Much of graduate education is carried out not in classrooms, but in laboratories and other research venues, often supported by federal or other external funding sources. Indeed, it is often difficult to distinguish between academic misconduct and cases of research misconduct. Graduate students are held to the same standards of responsible conduct of research as faculty and staff. The Graduate School is responsible for investigating allegations of research misconduct. This is often done in consultation with the Division of Student Life as well as with federal and state agencies to monitor, investigate, determine sanctions, and train about the responsible conduct of research. For more information, contact the Associate Vice Chancellor for Research Policy, 333 Bascom Hall, (608) 262-1044.

Please see section on "Grievance Procedures and Misconduct Reporting" for further information on reporting research misconduct of others. Here are links for additional information regarding Research Misconduct and Responsible Conduct:

Graduate School Policies & Procedures: Responsible Conduct of Research
http://grad.wisc.edu/acadpolicy/#responsibleconductofresearch

Office of the Vice Chancellor for Research and Graduate Education's - Office of Research Policy: Introduction & Guide to Resources on Research Ethics:
https://research.wisc.edu/respolcomp/resethics/

Graduate School Office of Research Policy: Policies, Responsibilities, and Procedures: Reporting Misconduct
http://kb.wisc.edu/gsadminkb/page.php?id=34486

Graduate School Office of Research Policy: Policies, Responsibilities, and Procedures: Responsible Conduct of Research Resources
https://kb.wisc.edu/gsadminkb/search.php?cat=2907

Madison Police Department

City of Madison

Richard K. Williams, Chief of Police

City-County Building
211 S. Carroll Street
Madison, Wisconsin 53703
608 266 4022
608 266 6562 (TDD/Device for Deaf)

Dear University of Wisconsin Student:

On behalf of the city of Madison Police Department, we wish to welcome you to Madison. Should you need to contact our department, the Emergency Number is **911**, the Non-Emergency Number is **266-4275.**

Alcohol and drug abuse, particularly in the setting of large house parties is a major concern of the Madison Police Department. Typical police calls for service as a result of large parties include disturbances, fights, weapons offenses, reports of vandalism, and complaints of loud music. Hosts and guests of these types of parties are often victims of serious crimes, including sexual assault, battery, burglary, theft, and criminal damage to property.

In the past few years, the number of persons being victimized by alcohol-related crimes, and the number of police calls for service relating to large house parties, has been reduced through the enforcement of City Ordinances related to alcohol offenses. The Madison Police Department plans to continue this enforcement effort.

The following is a list of some of the ordinance violations and fines associated with each citation:

38.01	Dispensing Alcohol Without a License:	$344.50
38.04(1)(a)(1) 38.04(1)(a)(3)	Procuring for or Furnishing Alcohol Beverage to Underage Person, or Underage Person Entering or Attempting to Enter Licensed Premises:	$344.50 (1st offense) $406.00 (2nd offense) $652.00 (3rd offense) $959.50 (4th offense)
38.04(5)(b) 38.04(5)(a)	Underage Person Possessing/Consuming Alcohol Beverage Off Licensed Premise or Underage Person Carrying False Identification Showing Person has Obtained Legal Drinking Age:	$160.00 (1st offense) $283.00 (2nd offense) $406.00 (3rd offense) $652.00 (4th offense)
38.07(7)	Possessing Open Container of Alcohol Beverage on a Public Street or Alley	$98.50
24.02(2)	Unreasonable Noise, Radio, Phonograph, or Other Such Device Which is Disturbing.	$98.50

It is our hope that we will not have to issue you any of the above-listed citations. The Madison Police Department would like to make your stay in Madison safe and enjoyable.

Sincerely,

TIM STRASSMAN, Police Officer
Langdon Area Neighborhood

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Section 3

Academic Information

Criteria for Satisfactory Progress for Graduate Students in the Department of Statistics

Revised May 2012.

The progress of every graduate student in the Department of Statistics will be reviewed semiannually. The reviews will take place before the start of the Spring Semester and during the Summer. The review will be conducted by a committee or person to be designated by the Department Chair.

In addition to the Departmental Criteria, the student must satisfy all rules and regulations of the Graduate School. It is the student's responsibility to understand the Graduate School rules. Students should take particular cognizance of the residence requirements as described in the Graduate School Bulletin.

As a result of each review the student will be deemed either to be making Satisfactory Progress or not. The student will be notified of the results of the review only if the Criteria are not satisfied. The consequences of failing to satisfy the Criteria are given below; the immediate consequence is to make the student ineligible for Departmental support as a TA, RA or PA.

In order to be deemed to be making Satisfactory Progress, graduate students must satisfy minimum requirements in each of the following areas:

- Grade Point Average
- Approved Credits
- Time Limits for core courses
- Time limit for first mentoring committee meeting [PhD]
- Ethics
- Handling of Incompletes

There are exceptions to the Criteria for part-time students; see below. Throughout this document, semester means Fall or Spring; Summer session is excluded (although Summer grades are used to compute grade point averages). To 'Pass' a course means to receive a grade of C or better.

1. Grade Point Average

At the end of each semester the Department will compute the cumulative grade point average (GPA) of each student in the program, with two exceptions. The GPA will not be computed at the end of the first semester of study, nor will it be computed in semesters during or after the passing of the preliminary exam. 'Cumulative" means the GPA in all courses numbered 301 or above in any department since entering the program. The cumulative GPA must equal or exceed 3.00 in order to satisfy this Criteria. If the cumulative GPA is below 3.00, then the student has failed to satisfy the Criteria.

2. Approved Credits

Prior to the semester in which the Preliminary Exam is passed, each semester the student must pass at least six credits approved by the academic advisor and in every two consecutive semesters pass at least fifteen credits approved by the academic advisor. Statistics courses listed under "Introductory Courses" and "Mathematical Foundations" on the Statistics Department course listing webpage (www.stat.wisc.edu/course-listing) cannot be used to fulfill the required minimum number of credits. The Department requires no minimum number of credits during the semester in which the Preliminary Exam is passed and subsequent semesters; however, the student should be aware of any Graduate School rules.

The credit limit may be relaxed, at the discretion of the Department, if it is believed a lower requirement is more appropriate for a student's academic goals.

3. Time Limits for core courses

The following criteria reflect the belief that the M.S. program should be a two-year program for most students. Note exceptions below for students who earn a M.S. from the Department and then decide to pursue the Ph.D. degree.

Time limits for students who begin graduate study in the Department in the Fall Semester:

1. Pass Statistics 709-710 within four semesters.
2. Pass the Ph.D. Qualifying Exam within six semesters.

Time limits for students who begin graduate study in the Department in the Spring Semester:

1. Pass Statistics 709 within four semesters and pass Statistics 710 within five semesters.
2. Pass the Ph.D. Qualifying Exam within six semesters of the first Fall Semester of enrollment; that is, the first Spring Semester is not included in the count for students who start their program in the Spring.

(Note: Students in the M.S. program usually do not enroll in 709 or 710. Thus, a typical consequence of the above time limits is that M.S. students who have not graduated after four semesters will subsequently fail to satisfy the Criteria.)

Students in the M.S. program who successfully complete the Department's M.S. exam within four semesters and who have sufficient mathematical background to enroll in Statistics 709 shall be granted a two-semester extension to the time limits for passing 709, 710, and the Ph.D. Qualifying exam.

Students who interrupt their graduate studies with an approved leave of absence will have the above time limits modified in a reasonable manner to be determined by the Department.

4. Time limit for first mentoring committee meeting

Ph.D. students are required to select a mentoring committee of 3 or more faculty members and meet with this committee within a year after passing the qualifying examination. A Ph.D. dissertation advisor need not be selected by the time of this first meeting. The student will be expected to prepare a short oral report of his/her research activities during the past year(s) and of anticipated directions for future research. Committee members will be expected to provide feedback and direction. Students may then meet regularly with their mentoring committee, which can change membership over time. The preliminary examination may serve as the first mentoring committee meeting if taken within a year after passing the qualifying examination.

5. Ethics

The department of Statistics expects graduate students to demonstrate intellectual honesty, a responsible attitude towards colleagues and clients, and a strong sense of personal integrity. Ethical statistical practice is essential to our profession and failure to act ethically undermines our profession. Training in research ethics is required for students on some federally funded grants. Unethical behaviors include, but are not limited to, academic misconduct in a class or assignment, academic misconduct in an examination, and violation of data confidentiality. Unethical behavior constitutes failure to meet Criteria and will result in sanctions at the university level and at the departmental level. See http://students.wisc.edu/saja/misconduct/UWS14.html for academic misconduct policies and procedures at the University of Wisconsin - Madison.

6. Incompletes

Any student who received an Incomplete in a course must provide the Department with a brief written explanation of the circumstances that led to the Incomplete, including a description of the work that must be completed. For an Incomplete received during Summer or Fall, the explanation must be received before Monday of the week before the next Spring semester classes start. For an Incomplete during Spring, the explanation must be received before June 15 of the same year.

If the explanation either arrives late or is deemed unacceptable by the Department, then the student will be deemed not to be making Satisfactory Progress.

If the explanation is accepted, the student will have one semester to remove the Incomplete; otherwise in the next review the student will fail to satisfy the Criteria. For example, if a student receives an Incomplete in Fall, he/she has until the end of the Spring Semester to complete the work, receive a

grade, and report the grade to the Statistics Department. Thus, the student should complete the work in time for the instructor in the course to finish grading by the end of the appropriate semester.

In some cases, several students in a class will be given an Incomplete because the instructor is not able to complete course grading on time. In such cases, the instructor may provide the Department with one letter to cover all students affected. In these cases, the student need not write a letter to the Department.

7. Consequences of Failure to Meet Criteria

A student who fails to satisfy the Criteria is ineligible for departmental support as a TA, PA, or RA beginning with the following semester (Fall for the summer review, Spring for the pre-Spring review). Three consecutive reviews in which a student fails to meet the Criteria for Satisfactory Progress will result in the Department immediately notifying the student and the Graduate School that the student is not longer eligible to be student in the Department. The student may petition to remain in the Department after three consecutive failures to meet the Criteria. For example, a student who is simultaneously pursuing two Master's degrees may reasonably be allowed four years to complete the degrees.

A student who has failed to satisfy the Criteria for fewer than three consecutive reviews is eligible to take courses, finish degree requirements and receive a degree. Failure to satisfy the Criteria will not appear on the student's transcript.

8. Part-time Students

A student who enters the Department as a part-time student will meet with an advisor to create individualized Criteria to be approved by the Department. It is anticipated that the individualized Criteria will follow the above guidelines on Grade Point Average and Incompletes, but the requirements on the number of approved credits and time limits will be relaxed.

A student with full-time status who wants to switch to part-time status must petition the Department for permission; permission will not be granted if it appears that a primary reason for the request is to avoid the consequences of failing to satisfy the Criteria.

9. Appeals and the Student's Responsibilities

The student may appeal in writing to the Department Chair any decision on Satisfactory Progress. The results of the review will stand, pending the outcome of the appeal. Thus, it is recommended that a student anticipate potential problems and makes an appeal early.

It is the student's responsibility to make sure he/she receives the results of the Department's review. In particular, the student must check his/her departmental mailbox in a timely manner or leave a forwarding address with the staff member in charge of mail. Ignorance of the result of the review is not grounds for an appeal. (We expect students will know they have failed to meet the Criteria before the Department does.) Also, note the student's responsibility regarding Incompletes as explained earlier.

Appendix: Examples of Academic misconduct

The list below is not exhaustive and focuses on examples most relevant to students taking courses. Individual instructors may have different expectations. Students are responsible for seeking out information when unsure of what is expected.

Copying or attempting to copy someone else's work, communicating answers during an exam, or using concealed information.

For a take-home exam, communicating about the exam with anyone else other than the instructor, without the instructor's consent. Using any resource not allowed by the instructor (internet, books other than those allowed, other students or friends) is cheating.

Example of collaboration on homework: 3 students meet to work on their 609 assignment.

The right way: They talk about the homework, write down some ideas on the board. Then they separate and individually write up their solutions.

The wrong way: There are 3 problems on the assignment. Student A is in charge of problem 1; Student B is in charge of problem 2; and Student C is in charge of problem 3. Student A presents her solution to problem 1 and students B, C copy down this solution. Repeat with Student B on problem 2, etc. This is cheating.

Students are encouraged to cite who they worked with on what problems, just like authors acknowledge colleagues in research publications. If someone else's code was used to do your homework, or the proof to a key step from a book or a paper, these references should be cited.Altering university documents is academic misconduct, such as altering a previously graded exam for the purpose of obtaining a grade change, or altering a student's progress form after it was signed by the student's advisor.

Guidelines for the first mentoring committee meeting

Before the meeting:

Start the process as soon as you pass the qualifying exam. Build in time to identify a research area of interest and potential committee members, including a dissertation advisor ideally. Ask potential committee members to serve on your committee. Tell them about your research interests at this time, then schedule the meeting. Two months in advance is not too early to schedule the meeting, especially in the summer.

At the meeting: get prepared to give an oral report and discuss the following topics:

Past research activities, such as background readings on the anticipated research area and early preliminary results.

Description of anticipated directions for future research.

Elective courses already taken and planned coursework, in relation to the anticipated dissertation area.

After the meeting:

Follow the directions provided by the mentoring committee. Do not hesitate to seek more guidance from committee members, either individually or through regular committee meetings.

Enrollment Requirements

(taken from the Grad School academic policies page – note that department requirements may be stricter than the Grad School requirements – for example, full-time students in our department need to make sure to enroll in a minimum of 15 credits over the fall and spring semesters (one semester in 6 credits, the other semester in 9 credits)

ALL of the following credit requirements (except F-1 and J-1 visa requirements) must be satisfied by graded, graduate-level courses; courses numbered below 300, audit, and pass/fail do not satisfy enrollment requirements.

Full-time enrollment: The Graduate School considers full-time enrollment to be 8-15 graded, graduate-level credits, excluding pass/fail and audit, during the fall and spring semesters, and 4-12 credits during the general 8-week summer session (DHH). If students elect not to enroll as full-time students as defined by the Graduate School, they are responsible for knowing about possible obligations that may require full-time status. Such obligations include visa eligibility, fellowships, assistantships, external funding agencies, and program satisfactory progress requirements.

Minimum enrollment: Non-dissertator minimum credit load is 2 credits during the fall and spring semesters. Graduate students must be enrolled at least at the minimum requirement in the semester in which they receive a degree; master's degree students expecting a summer degree must enroll in a minimum of 2 graduate credits. Graduate students who do not need to maintain full-time status (including TAs and PAs) have a 2 credit enrollment minimum during fall and spring semesters. Minimum requirements must be fulfilled by courses taken for a grade (not pass/fail or audit) and must be graduate level (300 and above).

Maximum enrollment: The Graduate School considers full-time enrollment to be 8-15 graded, graduate-level credits, excluding pass/fail and audit, during the fall and spring semesters, and 4-12 credits during the summer term. Any exceptions to the maximum credit load permitted must be obtained via the Overload Request process.

Underload: During the fall and spring semesters, non-dissertators must enroll for a minimum of 2 credits of graduate-level work (courses numbered 300 or above, taken for a grade). Audit and pass/fail courses do not satisfy this enrollment requirement. Dissertators are required to enroll for 3 graduate-level credits directly related to their dissertation research.

The specific situations listed below have special enrollment requirements.

Dissertators: Dissertators must enroll in exactly 3 credits directly related to their dissertation (generally research and thesis or required seminars) during fall and spring semesters. Dissertators are considered full-time at 3 credits. Dissertators who are summer RAs or trainees, or who expect to graduate in summer, must enroll in the general 8-week summer session (DHH) for 3 credits. Additional courses for credit, audit, or pass/fail will result in removal of dissertator status and tuition assessment at the regular graduate rate.

Once dissertator status has been achieved, courses other than 990 must be directly related to the dissertation research and approved by the advisor. Dissertators must enroll during the semester or general 8-week summer session (DHH) in which they expect to earn a degree. Students must be enrolled during the semester when they defend the dissertation and when they deposit the dissertation. If defending and depositing in two different semesters, the student is required to be enrolled in both semesters. Students do not have to be dissertators during the semester or summer in which they expect to earn a doctoral degree, but they must be eligible for dissertator status

before they complete the doctoral degree, and they must enroll in the semester in which they will graduate.

If a student enrolls before the dissertator status is approved, the enrollment system may indicate they are not eligible for that course. The enrollment system does not care if students are dissertators. If students had problems getting into a course, it is probably because permission has not been entered into the enrollment system. Most individualized study courses, such as research and thesis, require instructor's permission and online authorization before enrollment is possible. If students have trouble with enrollment, they should contact the Registrar's help line, 608-262-0920.

If paperwork is not processed by the segregated fee deadline, students pay regular non-dissertator graduate fees. The fee difference will be refunded for that semester when dissertator status is indicated in the system.

Assistantship appointees: It is against university policy to hold an assistantship without being appropriately enrolled.

RA (Research Assistant): RAs are required to carry a full load each semester (8 to 15 credits including research or thesis credits for non-dissertators, 3 credits for dissertators) and at least 2 credits during the general 8-week summer session (DHH) (3 credits for dissertators). Dissertators who hold assistantships are considered full-time with 3 credits directly related to their dissertation.

TA (Teaching Assistant) and PA (Project or Program Assistant):

- Minimum enrollment for PAs and TAs is 2 credits (3 credits for dissertators) during the fall and spring semesters.
- To be considered full-time by the Registrar for loan deferment and for certification of student immigration status, non-dissertator PAs and TAs who hold an appointment of at least 33.33% must be enrolled for 6 credits, or those who hold an appointment of at least 50% must be enrolled for 4 credits.
- Dissertator PAs and TAs are considered full-time with 3 credits directly related to their dissertation (generally research and thesis or required seminars).
- Maximum enrollment for PAs and TAs is 15 credits each semester
- The Graduate School has no enrollment requirement for the summer session for PAs and TAs, but individual programs may.

Fellows: Graduate students holding fellowships that are payrolled through the university must be enrolled full-time: 8 credits during the fall and spring semester. Fellows with 12-month appointments must also enroll in 2 credits during the general 8-week summer session (DHH). Those who are not payrolled as fellows over the summer are not required to be enrolled. Fellows who are also dissertators must enroll in 3 credits during the fall and spring semesters. Fellows with 12-month appointments who are dissertators must also enroll in 3 credits during the general 8-week summer session (DHH).

Trainees: Trainees must carry a full load each semester of 8 to 15 credits including research or thesis credits for non-dissertators (3 credits for dissertators), and at least 2 credits during the general 8-week summer session (DHH) (3 credits for dissertators).

International students: Both F-1 and J-1 student visa regulations require students to be enrolled full-time each fall and spring semester (at least 8 credits, not taken as audit). Summer enrollment is not required by the U.S. federal government regulations for F-1/J-1 visa holders. However, summer enrollment may be required due to other circumstances; see summer enrollment requirements for

assistantships, fellowships, traineeships, and graduating students. Failure to maintain full-time status can result in loss of F-1/J-1 student benefits, including on-campus employment and practical/academic training options. Any exceptions to full-time enrollment must be authorized by International Student Services (ISS), 217 Armory and Gymnasium (Red Gym), 716 Langdon Street, 608-262-2044, iss@studentlife.wisc.edu. Visit the ISS web page, iss.wisc.edu, to learn more about visa requirements. Permission from ISS to drop below full-time enrollment does NOT exempt an international student from meeting the enrollment requirement determined by a Teaching Assistantship (TA), Program/Project Assistantship (PA), Research Assistantship (RA), fellowship, traineeship, or dissertator status.

Summer enrollment requirements: Students must be enrolled at UW-Madison if they are using university facilities, including faculty and staff time.

- Dissertators defending and/or depositing dissertation (completing their degree) in summer must enroll for 3 credits in the general 8-week summer session (DHH).
- Non-dissertators completing a summer Ph.D. degree must enroll for at least 2 credits in the general 8-week summer session (DHH).
- Master's candidates, who expect to graduate in summer must enroll for at least 2 credits in any session, short session or general 8-week summer session (DHH).
- International students who are completing a summer degree are required to enroll for at least 2 credits in the general 8-week summer session (DHH).
- Dissertator RAs must enroll for 3 credits in the general 8-week summer session (DHH).
- Dissertator fellows with 12-month appointments are required to enroll for at least 3 credits in the general 8-week summer session (DHH).
- Dissertator trainees are required to enroll for at least 3 credits in the general 8-week summer session (DHH).
- Non-dissertator RAs must enroll for 2 credits in the general 8-week summer session (DHH).
- Non-dissertator TAs and PAs not receiving a summer degree have no enrollment requirement. However, those who held such an appointment during the previous semester may qualify for summer tuition remission and are advised to consult with their department if they wish to enroll.
- Non-dissertator fellows with 12-month appointments are required to enroll for at least 2 credits in the general 8-week summer session (DHH).
- Non-dissertator trainees are required to enroll for at least 2 credits in the general 8-week summer session (DHH).
- International students who are RAs in the summer are required to enroll for at least 2 credits in the general 8-week summer session (DHH).
- International students who are not completing a summer degree and who are not RAs have no summer enrollment requirement mandated by the U.S. federal government regulations for F-1/J-1 visa holders.

Residence for tuition purposes: Residency is used to determine tuition rates on campus. The details of the Graduate School Residency for Tuition Purposes and the Registrar's Office policy can be found at:

- http://grad.wisc.edu/acadpolicy/#residencefortuitionpurposes
- http://registrar.wisc.edu/residence.htm

Financial aid, loan deferral: In most cases, students are eligible for federal loans and federal loan payment deferral when enrolled at least half-time, which is 4 credits for the fall and spring semesters. However, individual cases may vary, and students are advised to seek individual advice at the UW-Madison Office of Student Financial Aid, 333 East Campus Mall, room 9701, 608-262-3060, finaid@finaid.wisc.edu.

Full-Time Enrollment Status at a Glance

ALL of the following credit requirements (except F-1 and J-1 visa requirements) must be satisfied by graded, graduate-level courses; courses numbered below 300, audit, and pass/fail do not satisfy the following enrollment requirements.

Categories	**Minimum enrollment for full-time status:** **Fall or Spring**	**Minimum enrollment for full-time status:** **Summer (general 8-week DHH session)**
Dissertator	***Exactly 3 credits*** *directly related to research*	Not required unless receiving summer degree or if graduate assistant, trainee, or fellow, 3 cr. required.
RA, non-dissertator	8 cr.	2 cr.
TA 33%, non-dissertator*	6 cr.	Not required unless receiving summer degree, 2 cr. minimum.
TA 50%, non-dissertator*	4 cr.	Not required unless receiving summer degree, 2 cr. minimum.
PA 33%, non-dissertator	6 cr.	Not required unless receiving summer degree, 2 cr. minimum.
PA 50%, non-dissertator	4 cr.	Not required unless receiving summer degree, 2 cr. minimum.
Fellow, non-dissertator	8 cr.	2 cr. for 12-month appointments. Not required for 9-month appointments.
Trainee, non-dissertator	8 cr.	2 cr.
International student (F-1/J-1 visa), non-dissertator, if no other category in this list	8 cr.	4 cr. when summer is admit semester (2 cr. when summer is admit semester and student holds RA appointment or at least 33% TA or PA appointment)
If none of the above, full time enrollment is:	8 cr.	4 cr.

*Lecturer (SA) is included in the same enrollment category as TA

Course Registration Form - needs to be signed by your advisor at the beginning of each semester!

NAME ID #

SAMPLE

ADVISOR

COURSE	SEM	CRD	GRD	ADVISOR SIGNATURE

COURSE	SEM	CRD	GRD	ADVISOR SIGNATURE

Advisor Selection

During your first year of graduate studies, academic advising is provided by designated advisors during Welcome Week. After your initial appointment during Welcome Week, please feel free to seek advice from any of the faculty members throughout the year.

After your first year of study, you may continue to meet with your advisor listed above or with any faculty member who agrees to be your academic advisor.

When considering a prospective advisor, the following might be helpful to think about. Many of these questions are not simple and may not elicit a quick answer. However, any advisor should be willing to discuss these important issues with you. You may also want to discuss these issues with any students that are currently in the prospective advisor's group/lab. This list is by no means complete; you should spend some time thinking about what is most important to you in your graduate training.

- What thesis projects would be available to me if I were to join your group?
- Would these projects expose me to a variety of different approaches?
- In general, how available will you be to answer questions I might have?
- What is your philosophy regarding the amount of guidance the advisor should provide to a student during preparation of the thesis proposal, thesis, etc.?
- What are your expectations for the amount of time I should spend each day/week in your group/lab?
- Do you include your graduate students in professional activities that will familiarize them with their field of interest/research, such as reviewing manuscripts and meeting with visiting speakers?
- How long do you think it should take me to get my degree?
- What are your former graduate students (if any) doing now?
- What is your general philosophy of graduate training and what goals do you have for your graduate students?

If you wish to change your assigned advisor, please see Andrea (Rm 1220D MSC) for the form.

Change of Advisor Form

I, _____,would like to select _____
(my name) (faculty name)
as my faculty advisor.

Student signature _____ Date _____

(new) Advisor signature _____ Date _____

Statistics Course Descriptions

Instructors vary by semester. Check current timetable.

301 **Introduction to Statistical Methods.** 3 credits. Distributions, measures of central tendency, dispersion and shape, the normal distribution; experiments to compare means, standard errors, confidence intervals; effects of departure from assumption; method of least squares, regression, correlation, assumptions and limitations; basic ideas of experimental design. Pre-Requisites: Satisfied Quantitative Reasoning (QR) A requirement. Not open to students who have completed STAT 201, 224, 324, or 371.

302 **Accelerated Introduction to Statistical Methods.** 3 credits. Graphical and numerical exploration of data; standard errors; distributions for statistical models including binomial, Poisson, normal; estimation; hypothesis testing; randomization tests; basic principles of experimental design; regression; ANOVA; categorical data analysis; goodness of fit; application (intended for students wishing to take additional statistics courses). Pre-Requisites: Satisfied Quantitative Reasoning (QR); a requirement and Math 221 or equivalent.

309 **Introduction to Probability and Mathematical Statistics I.** (Cross-listed) 3 credits. Probability and combinatorial methods, discrete and continuous, univariate and multivariate distributions, expected values, moments, normal distribution and derived distributions, estimation. Pre-Requisites: Math 234 or concurrent registration. Students may not enroll if they have completed Stat 311 or Math/Stat 431.

310 **Introduction to Probability and Mathematical Statistics II.** (Cross-listed) 3 credits. This course in mathematical statistical inference aims at providing an understanding of likelihood's central role to statistical inference, using the language of mathematical statistics to analyze statistical procedures, and using the computer as a tool for understanding statistics. Specific topics include: samples and populations, estimation, hypothesis testing, and theoretical properties of statistical inference. Pre-Requisites: Math/Stat 309 or Stat 311 or Math/Stat 431 (with Math/Stat 309 recommended) AND an introductory statistics course (Stat 224 or Stat 301 or Stat 302 or Stat 324 or Stat 371 or Econ 310).

311 **Introduction to Theory and Methods of Mathematical Statistics I.** 3 credits. Elements of probability, important discrete distributions, acceptance sampling by attributes, sample characteristics, probability distributions and population characteristics, the normal distribution, acceptance sampling plans based on sample means and variances, sampling from the normal, the central limit theorem, point and interval estimation. Pre-Requisites: Math 234 or concurrent registration. Students may not enroll if they have completed Math/Stat 309 or Math/Stat 431.

312 **Introduction to Theory and Methods of Mathematical Statistics II.** 3 credits. Unbiased estimation, maximum likelihood estimation, confidence intervals, tests of hypotheses, Neyman-Pearson lemma, likelihood ratio test, regression, analysis of variance with applications. Pre-Requisites: Math/Stat 309 or Stat 311 or Math/Stat 431 (with Stat 311 recommended).

324 **Introductory Applied Statistics for Engineers.** 3 credits. Descriptive statistics, probability concepts and distributions, random variables. Hypothesis tests and confidence intervals for one- and two-sample problems. Linear regression, model checking, and inference. Analysis of variance and basic ideas in experimental design. Math 222. Students may receive degree credit for no more that one of the following: Stat 201, 224, 301 and 324. Open to Freshmen.

327 **Topics Course.** 1 credit. Content varies.

333 **Applied Regression Analysis**. 3 credits. An introduction to regression with emphasis on the practical aspects. Topics include: straight-line model, role of assumptions, residual analysis, transformations, multiple regression (with some use of matrix notation), multicollinearity, subset selection, and a brief introduction to mixed models. Pre-Requisites: An introductory statistics course (Stat 224 or Stat 301 or Stat 302 or Stat 324 or Stat 371) and Stat 327 (Stat 327 may be taken concurrently).

349 **Introduction to Time Series**. 3 credits. Autocorrelation; stationarity and non-stationarity; heteroscedasticity; dynamic models; auto-regressive and moving average models; identification and fitting; forecasting; seasonal adjustment; applications for financial time series, social sciences and environmental studies. Pre-Requisites: Stat 333.

351 **Introductory Nonparametric Statistics**. 3 credits. Distribution free statistical procedures or methods valid under nonrestrictive assumptions: basic tools; counting methods; order statistics, ranks, empirical distribution functions; distribution free tests and associated interval and point estimators; sign test; signed rank tests; rank tests; Mann Whitney Wilcoxon procedures; Kolmogorov Smirnov tests; permutation methods; kernel density estimation; kernel and spline regression estimation; computer techniques and programs; discussion and comparison with parametric methods. Pre-Requisites: Statistics 333.

371 **Introductory Applied Statistics for the Life Sciences.** 3 credits. The course will provide students in the life sciences with an introduction to modern statistical practice. Topics include: exploratory data analysis, probability and random variables; one-sample testing and confidence intervals, role of assumptions, sample size determination, two-sample inference; basic ideas in experimental design, analysis of variance, linear regression, goodness-of fit; biological applications. Pre-Requisites: Math 112 & 113 or Math 114. Open to Freshmen. Students may receive credit for no more than one of the following courses: Stat 201, 224, 301, 324, & 371.

411 **An Introduction to Sample Survey Theory and Methods**. 3 credits. An introduction to the methods used to design sample surveys and analyze the results. Topics covered include: basic tools, simple random sampling, ratio and regression estimation, stratification, systematic sampling, cluster (area) sampling, two-stage sampling, unequal probability sampling, non-sampling errors, and missing data. For illustration and clarification, examples are drawn from diverse areas of application. Pre-Requisites: Stat 333.

421 **Applied Categorical Data Analysis**. 3 credits. Analysis of multidimensional contingency tables, Poisson regression, and logistic regression, with emphasis on practical applications. Use of computer programs for such analyses. Model selection, testing goodness of fit, estimation of parameters, measures of association and methods for detecting sources of significance. Pre-Requisites: Stat 333.

424 **Statistical Experimental Design**. (Cross-listed). 3 credits. This course provides a systematic introduction to statistical design and analysis of experiments. Topics include: principles of randomization, blocking and replication, randomized blocking designs, Latin square designs, full factorial and fractional factorial designs and response surface methodology. Substantial focus will be devoted to engineering applications. Pre-Requisites: An introductory statistics course (Stat 224 or Stat 301 or Stat 302 or Stat 324 or Stat 371).

431 **Introduction to the Theory of Probability**. (Cross-listed) 3 credits. Probability in discrete sample spaces; combinatorial analysis; conditional probabilities, stochastic independence, Laplace limit theorem, Poisson distribution, laws of large numbers, random variables, central limit theorem, applications. Pre-Requisites: Math 223 or 234.

441 **Introduction to Biostatistics for Pharmacy.** 3 credits. Introduction to statistical methods used in pharmaceutical and related biomedical applications. Topics include exploratory data analysis of random samples, theory of probability and population reference distributions, statistical inference and hypothesis testing, regression methods, and survival analysis techniques. Pre-Requisites: Admission to School of Pharmacy, PharmD program.

456 **Applied Multivariate Analysis.** 3 credits. Theory and applications of multivariate statistical methods. Basic concepts and statistical reasoning which underlie the techniques of multivariate analysis. Ideas rather than derivations stressed although basic models discussed to give the student some feeling for their adequacy in particular situations. Acquaintance with and use of existing computer programs in the multivariate analysis area. Pre-Requisites: Stat 333 and a course in linear algebra (Math 340 or Math 341 or Math 375).

461 **Financial Statistics.** 3 credits. Stochastic models and statistical methodologies are widely employed in modern finance. The models and their inferences are very important for academic research and financial practices. This course will cover the financial stochastic models and their statistical inferences with applications to volatility analysis and risk management. It will introduce discrete models such as binomial trees and GARCH and stochastic volatility models as well as simple continuous models like the Black-Scholes model. The main focus of the course will be on statistical inference, data analysis and risk management regarding these models. Pre-Requisites: Stat 333 or Econ 410 and one of Stat 309 or Stat 311 or Math 431.

471 **Introduction to Computational Statistics.** (Cross-listed) 3 credits. Classical statistical procedures arise where closed-form mathematical expressions are available for various inference summaries (e.g. linear regression; analysis of variance). A major emphasis of modern statistics is the development of inference principles in cases where both more complex data structures are involved and where more elaborate computations are required. Topics from numerical linear algebra, optimization, Monte Carlo (including Markov chain Monte Carlo), and graph theory are developed, especially as they relate to statistical inference (e.g., bootstrapping, permutation, Bayesian inference, EM algorithm, multivariate analysis). Pre-Requisites: Stat 310 and Stat 333.

475 **Introduction to Combinatorics.** (Cross-listed) 3 credits. Problems of enumeration, distribution, and arrangement. Inclusion-exclusion principle. Generating functions and linear recurrence relations. Combinatorial identities. Graph coloring problems. Finite designs. Systems of distinct representatives and matching problems in graphs. Potential applications in the social, biological, and physical sciences. Puzzles. Problem solving. Pre-Requisites: Math 320 or 340 or consent of instructor.

479 **Topics Course.** 1-3 credits. Content varies.

511 **Introduction to Biostatistical Methods for Public Health.** (Cross-listed) 3 credits. Provides breadth in biostatistical methods for public health practitioners. Topics will include research design, data collection methods and database management, statistical computing and programming, descriptive statistics in tables and graphics, introductory statistical methods, and survey sampling. Pre-Requisites: Enrollment in the Master of Public Health (MPH) program at UW-Madison or consent of instructor. Not open to students who have taken BMI/STAT 541 or BMI/POP HLTH 551.

525 **Linear Programming Methods.** (Cross-listed) 3 credits. Real linear algebra over polyhedral cones; theorems of the alternative for matrices. Formulation of linear programs. Duality theory and solvability. The simplex method and related methods for efficient computer solution. Perturbation and sensitivity analysis. Applications and extensions, such as game theory, linear economic models, and quadratic programming. Pre-Requisites: Math 443 or 320 or 340 or consent of instructor.

541 **Introduction to Biostatistics.** (Cross-listed) 3 credits. Course designed for the biomedical researcher. Topics include: descriptive statistics, hypothesis testing, estimation, confidence intervals, t-tests, chi-squared tests, analysis of variance, linear regression, correlation, nonparametric tests, survival analysis and odds ratio. Biomedical applications used for each topic. Pre-Requisites: Graduate standing. Students may not enroll if they have completed BMI 511 or BMI 551.

542 **Introduction to Clinical Trials I.** (Cross-listed) 3 credits. Intended for biomedical researchers interested in the design and analysis of clinical trials. Topics include definition of hypotheses, measures of effectiveness, sample size, randomization, data collection and monitoring, and issues in statistical analysis. Statistics graduate students should take Stat 641. Pre-Requisites: Stat 541 or equivalent or consent of instructor.

546 **Practicum in Clinical Trial Data Analysis and Interpretation.** (Cross-listed) 3 credits. Provides practice in analysis and interpretation of existing datasets from national and international clinical trials in a variety of diseases. Students will develop a research question, review clinical protocols, and analyze available data to prepare a report.. Pre-Requisites: Stat 541 or 572 & Stat 542 or 641.

571 **Statistical Methods for Bioscience I.** (Cross-listed) 4 credits. Descriptive statistics, distributions, one- and two-sample normal inference, power, one-way ANOVA, simple linear regression, categorical data, non-parametric methods; underlying assumptions and diagnostic work. Pre-Requisites: College algebra: Grad st or consent of instructor.

572 **Statistical Methods for Bioscience II.** (Cross-listed) 4 credits. Continuation of Forestry 571. Polynomial regression, multiple regression, two-way ANOVA with and without interaction, split-plot design, subsampling, analysis of covariance, elementary sampling, introduction to bioassay. Pre-Requisites: Stats/Forestry/Hort 571.

575 **Statistical Methods for Spatial Data.** 3 credits. Detecting and quantifying spatial patterns and modeling in the presence of such patterns. Spatial Point Patterns: testing nonrandomness, simulating and characterizing patterns. Lattice Data: spatial autocorrelation and regression. Geostatistics: variograms, ordinary and universal kriging, inference, assessing assumptions, and extensions. Pre-Requisites: Stat 333 & 424; or Stat/Forest/Hort 572; or consent of instructor.

601 **Statistical Methods I.** 4 credits. Together with Stat 602, this course is to provide graduate students in statistics and related quantitative fields with a thorough grounding in modern statistical methods. The specific learning outcomes for the course are to understand data collection in context (how/why data were collected, key questions under study); explore data by effective graphical and numerical summaries; understand probability concepts and models as tools for studying random phenomena and for statistical inference; analyze data using appropriate, modern statistical models, methods, and software; understand the statistical concepts underlying methods; develop the ability to interpret results and critically evaluate the methods used; communicate data analysis and key findings in context. This course will assume students have had at least one semester of calculus and one semester of linear algebra.(MS-DS program)

602 **Statistical Methods II.** 4 credits. Together with Stat 601, this course is to provide graduate students in statistics and related quantitative fields with a thorough grounding in modern statistical methods. The specific learning outcomes for the course are to understand data collection in context (how/why data were collected, key questions under study); explore data by effective graphical and numerical summaries; understand probability concepts and models as tools for studying random phenomena and for statistical inference; analyze data using appropriate, modern statistical models, methods, and software; understand the statistical concepts underlying methods; develop the ability to interpret results and critically evaluate the methods used; communicate data analysis and key findings in context. (MS-DS program) Pre-Requisites: Stat 601.

609 **Mathematical Statistics I.** 3 credits. Review of probability, random variables and vectors and their distributions, moments and inequalities, generating functions, transformations of random variables, sampling and distribution theory, convergence concepts for sequences of random variables, laws of large numbers, central limit and other limit theorems. Pre-Requisites: Stat 309 or 431, Math 340, Math 521, or equivalent or consent of instructor.

610 **Introduction to Statistical Inference.** 4 credits. Conditioning, distribution theory, approximation to distributions, modes of convergence, limit theorems, statistical models, parameter estimation, comparison of estimators, confidence sets, theory of hypothesis tests, introduction to Bayesian inference and nonparametric estimation. Pre-Requisites: Stat 309 or Stat 431, Math 521, Math 340 or equivalent or consent of instructor.

627 **Professional Skills in Data Science.** 1-3 cr. This topics course is aimed at providing statistics graduate students with an understanding of and experience with important aspects of professional development in statistics, including skills with internet tools, sophisticated use of statistical languages (such as R) and other emerging topics (MS-DS program).

628 **Data Science Practicum.** 1-3 cr. This course is aimed at providing graduate students with an understanding of and experience with turning statistics concepts into practice through data science practicums inspired by realistic projects. Students will combine theory and methods expertise with communications skills to translate from a vaguely stated project description and complex data set into a concisely summarized analysis, including both written and graphical interpretation that can be used by decision makers in an organization (MS-DS program).

632 **Introduction to Stochastic Processes.** (Cross-listed) 3 cr. Markov chains: classification, recurrence, transcience, limit theory. Renewal theory, Markov processes, birth-death processes. Applications to queueing, branching, and other models in science, engineering and business. Topics drawn from semi-Markov processes, martingales, Brownian motion. Pre-Requisites: Math 431, or Stat 309 & 310, or Stat 311 & 312.

641 **Statistical Methods for Clinical Trials.** (Cross-listed) 3 credits. Statistical issues in the design of clinical trials, basic survival analysis, data collection and sequential monitoring. Intended for statistics graduate students; those with medical backgrounds should take Stat 542. Pre-Requisites: Math/Stat 310 or equivalent or consent of instructor.

642 **Statistical Methods for Epidemiology.** (Cross-listed) 3 credits. Methods for analysis of case-control, cross sectional, and cohort studies. Covers epidemiologic study design, measures of association, rates, classical contingency table methods, and logistic and Poisson regression. Pre-Requisites: Statistics 310 or equivalent or consent of instructor.

679 **Topics Course.** 1-3 credits. Special topics in statistics at the master's level. Subject matter varies. Pre-Requisites: Consent of instructor.

698 **Directed Study.** 1-6 credits. P: Graded on a Credit/No Credit basis; requires consent of instructor.

699 **Directed Study.** 1-6 credits. P: Graded on a lettered basis; requires consent of instructor.

701 **Applied Time Series Analysis, Forecasting and Control I.** 3 credits. Theory and application of discrete time series models illustrated with forecasting problems. Principles of iterative model building. Representation of dynamic relations by difference equations. Autoregressive integrated Moving Average models. Identification, fitting, diagnostic checking of models. Seasonal model application to forecasting in business, economics, ecology, and engineering used at each stage, which the student analyzes using computer programs which have been specially written and extensively tested. Pre-Requisites: Stat 310 or equivalent.

709 **Mathematical Statistics.** (Cross-listed) 4 credits. Introduction to measure theoretic probability; derivation and transformation of probability distributions; generating functions and characteristic functions; conditional expectation, sufficiency, and unbiased estimation; methods of large sample theory including laws of large numbers and central limit theorems; order statistics. Pre-Requisites: Consent of instructor or one year advanced calculus and Math, Stat 431, Math, Stat 310.

710 **Mathematical Statistics.** (Cross-listed) 4 credits. Estimation, efficiency, Neyman-Pearson theory of hypothesis testing, confidence regions, decision theory, analysis of variance, and distribution of quadratic forms. Pre-Requisites: Stat, Math 709.

726 **Nonlinear Optimization I.** (Cross-listed) 3 credits. Theory and algorithms for nonlinear optimization, focusing on unconstrained optimization. Line-search and trust-region methods; quasi-Newton methods; conjugate-gradient and limited-memory methods for large-scale problems; derivative-free optimization; algorithms for least-squares problems and nonlinear equations; gradient projection algorithms for bound-constrained problems; and simple penalty methods for nonlinearly constrained optimization. Pre-Requisites: Familiarity with basic mathematical analysis and either Math 443 or 320; or consent of instructor.

732 **Large Sample Theory of Statistical Inference.** 3 credits. Stochastic modes of convergence. Asymptotic theory of normed sums of random variables with applications to asymptotic normality of estimators. Methods for deriving limit distributions of nonlinear statistics. Asymptotic relative efficiencies. Asymptotic confidence regions and tests of hypotheses. Models of non-identically distributed or dependent random variables. Pre-Requisites: Either Stat 709, 731, or 831 or consent of instructor.

733 **Theory of Probability I.** (Cross-listed) 3 credits. An introduction to measure theoretic probability and stochastic processes. Topics include foundations, independence, zero-one laws, laws of large numbers, convergence in distribution, characteristic functions, central limit theorems, random walks, conditional expectations. Pre-Requisites: Math 629, 721, or concurrent registration in 721, or consent of instructor.

734 **Theory of Probability II.** (Cross-listed) 3 credits. Continuation of 831. Possible topics include martingales, weak convergence of measures, introduction to Brownian motion. Pre-Requisites: Consent of instructor.

741 **Survival Analysis Theory and Methods.** (Cross-listed) 3 credits. Theory and practice of analytic methods for censored survival data, including nonparametric and parametric methods, the proportional hazards regression model, and a review of current topics in survival analysis. Pre-Requisites: Stat 610 or 710 or equivalent or consent of instructor.

760 **Multivariate Analysis I.** 3 credits. Multivariate normal distribution, estimation of mean and covariance matrix; Wishart distribution; distribution of partial and multiple correlation coefficients; Hotelling's T??2?, principal components. Pre-Requisites: Consent of instructor or Stat 710.

761 **Decision Trees for Multivariate Analysis.** 3 credits. Tree construction, including finding splits, tree-pruning and error estimation. Categorical predictor variables, missing or censored data, prior class-probabilities, and unequal misclassification costs. Selection bias. Comparison with other statistics and machine-learning methods. Extensions to piecewise linear and non-least squares regression models. Pre-Requisites: Consent of instructor.

768 **Statistical Methods for Medical Image Analysis.** (Cross-listed) 3 credits. Introduce key statistical methods and concepts for analyzing various medical images. Analyze publicly available and student/instructor supplied imaging data using the most up-to-date methods and tools. Aimed at graduate student and researchers with strong quantitative background. Pre-Requisites: Two semesters of statistics courses (STAT 309-310), or the consent of instructor. The course is self-contained. The knowledge of calculus and linear algebra is needed.

771 **Statistical Computing.** 3 credits. The design of statistical software including special techniques for probability distributions, methods of simulation of random processes, numerical methods for linear models and multivariate analysis, and methods for nonlinear models. Pre-Requisites: Stat 333 or equivalent or consent of instructor.

775 **Introduction to Bayesian Decision and Control I.** (Cross-listed) 3 credits. Common sampling models in business and economic problems, information from data, likelihood function of parameters, choices of models, Bayes' Theorem, subjective basis for probability, sequential nature of Bayesian inference, prior and posterior distributions of parameters in binomial, poisson, exponential and normal populations, comparison of two normal distributions, predictive distributions, decision theory, utility, risk aversion, extensive form of analysis, two-action problems, point estimation, best population problems, economics of sampling. Pre-Requisites: Stat 309, 313, or 311 or equivalent.

803 **Experimental Design I.** (Cross-listed) 3 credits. Summary of matrix algebra required, theory of estimable functions, incomplete blocks, balanced incomplete block designs, partially balanced incomplete block designs. Pre-Requisites: Stats 310 or consent of instructor.

809 **Non Parametric Statistics.** 3 credits. Statistical procedures valid under unrestrictive assumptions; sign test; confidence intervals; efficiency comparisons; signed rank procedures; Walsh sums; point estimators; two sample rank tests; zeros, ties, and other problems of discrete data; order statistics; Winsorized and truncated point estimators and connection with gross error models; permutation procedures; combinatorial problems, and computer applications. Pre-Requisites: Stat 710 or consent of instructor.

811 **Sample Survey Theory and Method.** 3 credits. Simple random sampling; systematic sampling; probability sampling; stratified sampling; subsampling with units of equal and unequal size; double sampling; multi-stage and multi-phase sampling; ratio and regression estimates; model-based and model-assisted approaches; variance estimation; non-response. Pre-Requisites: Stats 610 or 710 or equivalent.

824 **Nonlinear Regression Analysis with Engineering Applications.** 3 credits. Engineering application of statistical design techniques; sequential design strategies; nonlinear model building; model discrimination. Pre-Requisites: Stat 333, 424 or 849; or consent of instructor.

833 **Topics in the Theory of Probability.** (Cross-listed) 3 credits. Topics in probability and stochastic processes. Pre-Requisites: Consent of instructor.

834 **Empirical Processes and Semiparametric Inference.** 1-3 credits. Empirical process methods in statistics; semiparametric models; stochastic convergence in metric spaces; Glivenko-Cantelli and Donsker theorems; entropy calculations; bootstrapped empirical processes; functional delta method; Z-estimators; M-estimators; rates of convergence; semiparametric efficiency; semiparametric estimating equations; nonparametric maximum likelihood. Pre-Requisites: Math/Stat 710 or Math/Stat 832 or consent of instructor.

840 **Statistical Model Building and Learning.** 3 credits. Theory of reproducing kernel Hilbert spaces in statistical model building; bounded linear functionals and representor theory; smoothing splines; ANOVA spines; degrees of freedom for signal and the bias-variance tradeoff; Bayesian confidence intervals; model selection. Pre-Requisites: Stat 710 or consent of instructor.

841 **Nonparametric Statistics and Machine Learning Methods.** 3 credits. Statistical function estimation and classification; reproducing kernel machines, support vector machines; high dimensional model selection and estimation; Bayesian, empirical Bayesian interpretation of nonparametric learning methods; log density ANOVA and graphical models; tree ensemble methods including bagging, boosting, and random forest. Pre-Requisites: Stat 840.

849 **Theory and Application of Regression and Analysis of Variance I.** 3 credits. Theory and applications of the general linear model; graphical methods; simultaneous inference; regression diagnostics; analysis of variance of fixed, random and mixed effects models; ANCOVA: violations of assumptions. Pre-Requisites: Stat 310 or 312.

850 **Theory and Application of Regression and Analysis of Variance II.** 3 credits. Theory and applications of the general linear model; graphical methods; simultaneous inference; regression diagnostics; analysis of variance of fixed, random and mixed effects models; ANCOVA: violations of assumptions. Pre-Requisites: Stat 849.

851 **Generalized Linear Models.** 3 credits. Methods for developing, fitting and checking models beyond the classical linear model framework. Binary, ordinal and categorical models will be examined, as well as the non-Gaussian continuous case and more advanced topics. Pre-Requisites: Stat 850 or concurrent registration or consent of instructor.

860 **Estimation of Functions from Data.** 3 credits. Statistical and approximation theoretic methods of estimating functions and values of functionals from experimental data; experimental design and data analysis problems that arise as problems in approximation theory; convergence theorems; ill-posed inverse problems; Banach and Hilbert space penalty functionals. Pre-Requisites: Stat 710 or consent of instructor.

877 **Statistical Methods for Molecular Biology.** (Cross-listed) 3 credits. Develop statistical problems in gene mapping, high throughputomic data analysis, phylogenetics and sequence analysis. Introduce ideas of key methods using published data. Statisticians learn statistical basis for research methodology. Collaboration among students and with biologists is encouraged through projects. Pre-Requisites: Stat 309-310 or 609-610 or 709-710 or equivalent, or consent of instructor. Genetics 466 or equivalent strongly recommended.

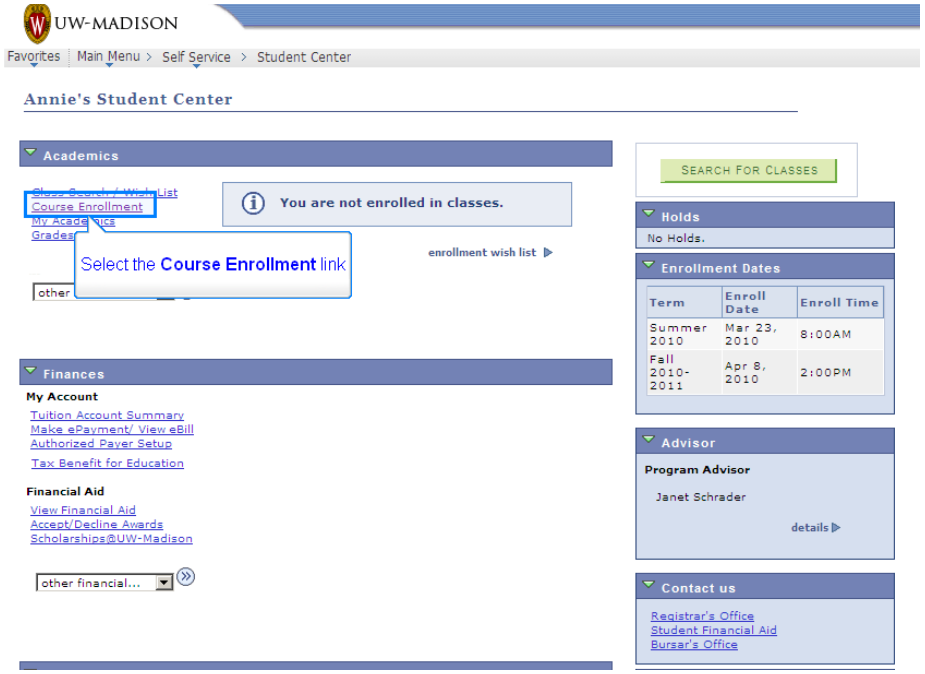
990 **Research.** 1-12 credits. Content varies. P: consent of instructor.

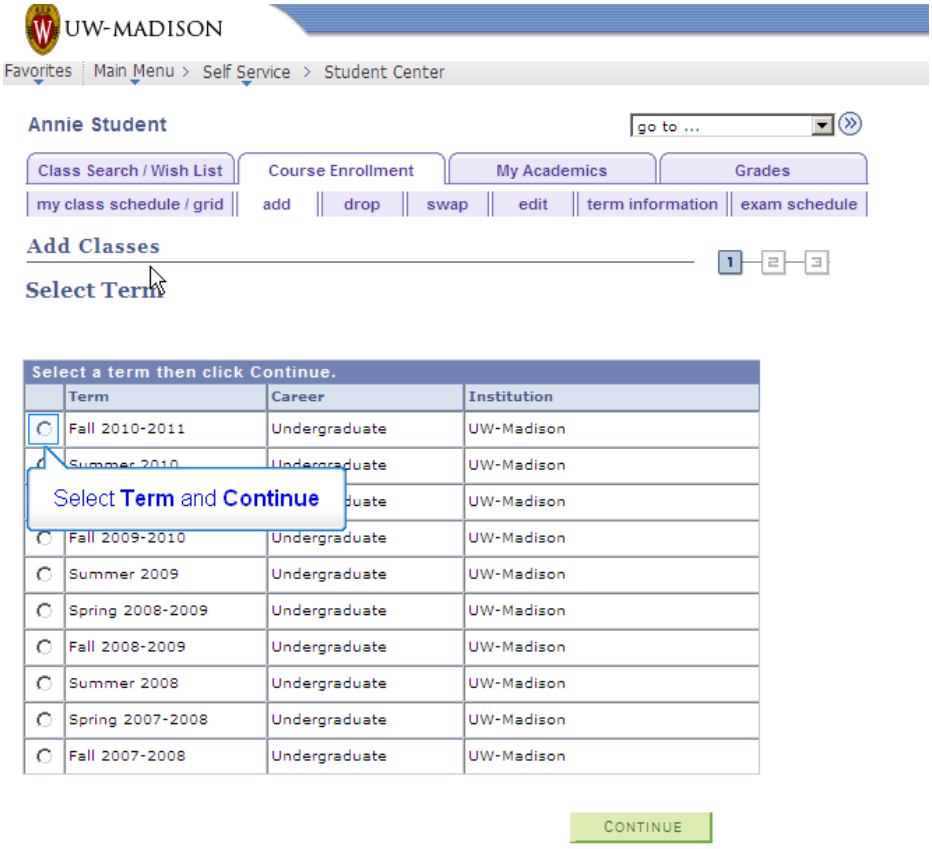
992 **Seminar.** 1-3 credits, Content varies. P: consent of instructor.

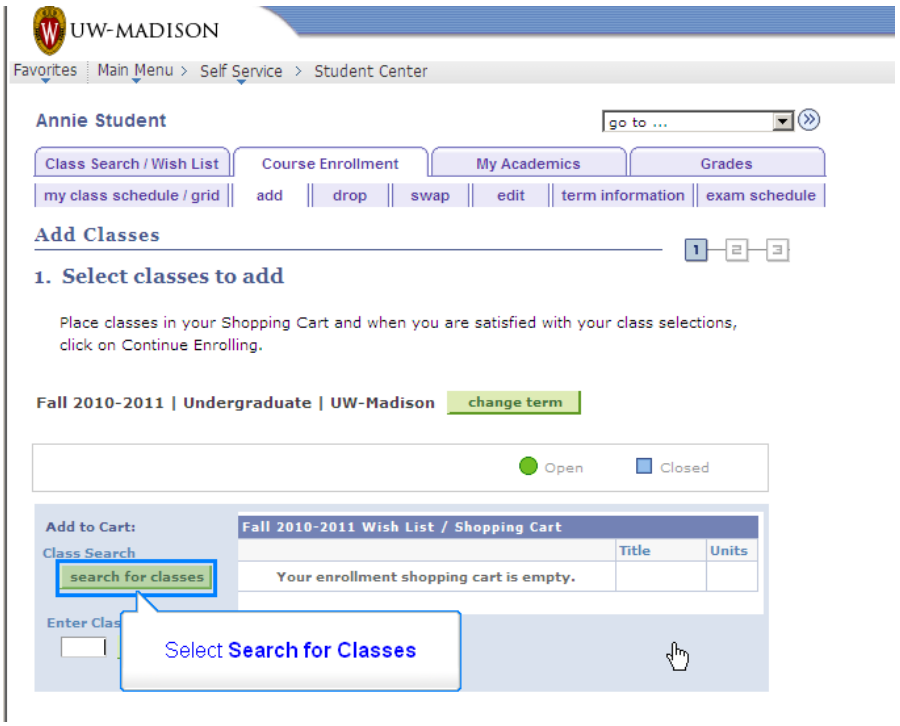
998 **Statistical Consulting.** 3 credits. Consulting apprenticeship. Pre-Requisites: 9 credits in statistics and consent of instructor.

How to Enroll in a course through your UW student center:

(this demo shows how to enroll for an English class but it would be the same for a Statistics class)






UW-MADISON
Favorites
Main Menu > Self Service > Student Center
Annie Student
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Class Search / Wish List
Course Enrollment
My Academics
Grades
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edit
term information
exam schedule
Add Classes
1. Select classes to add
Place classes in your Shopping Cart and when you are satisfied with your class selections, click on Continue Enrolling.
Fall 2010-2011 | Undergraduate | UW-Madison
change term
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Closed
Add to Cart:
Class Search
search for classes
Fall 2010-2011 Wish List / Shopping Cart
Title
Units
Your enrollment shopping cart is empty.
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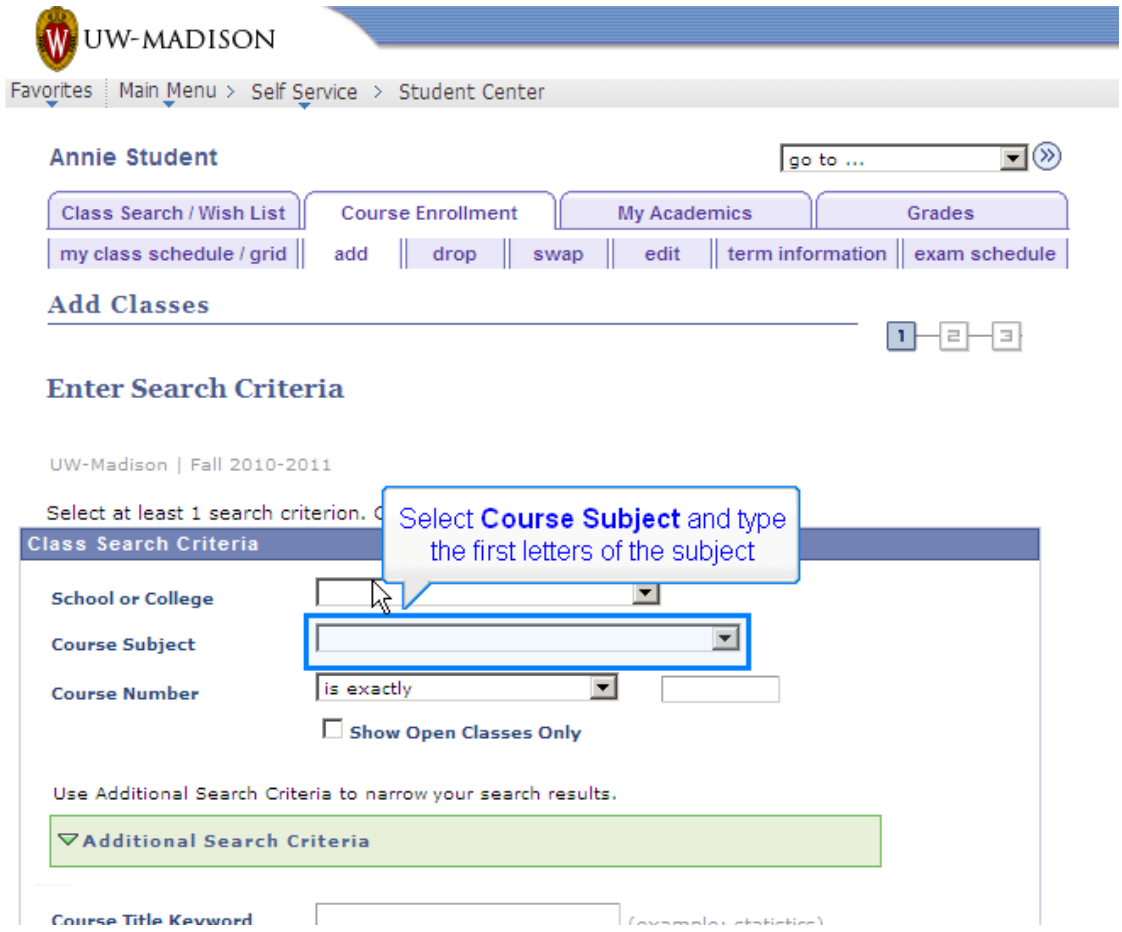
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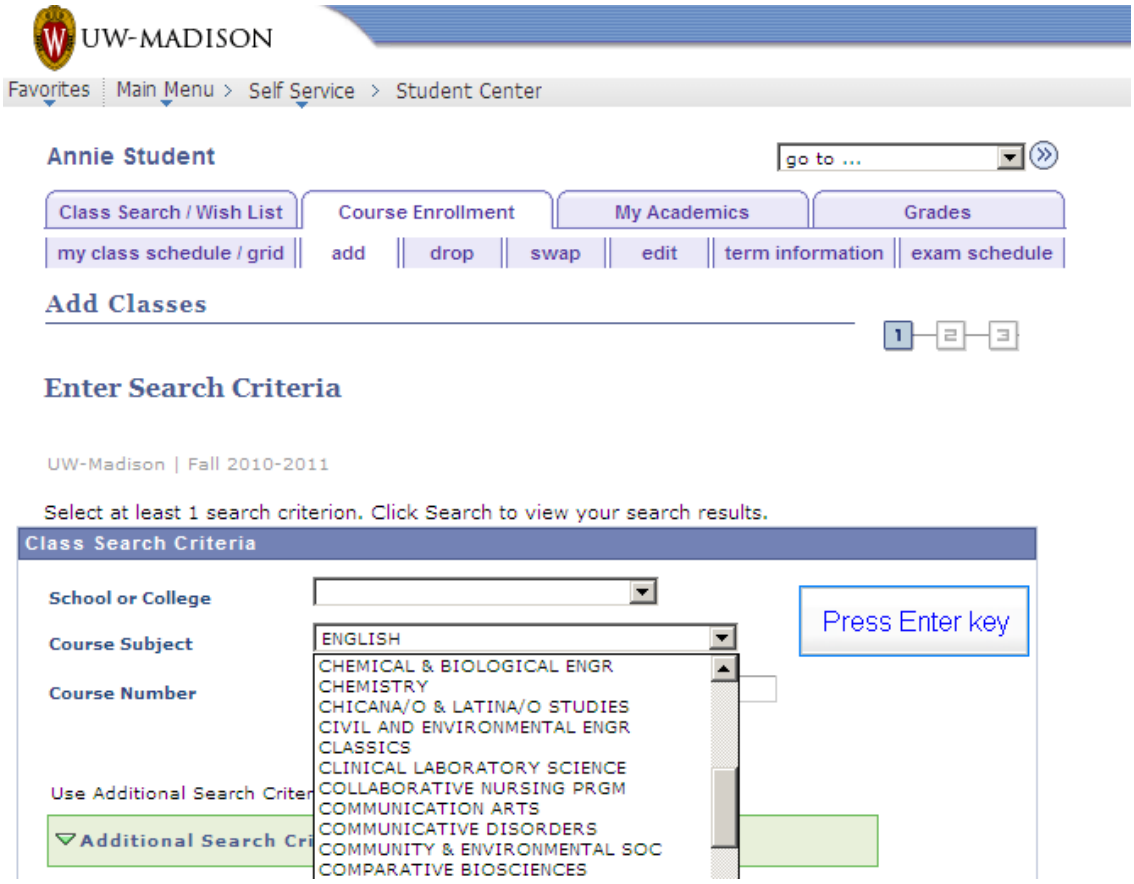
Enter Search Criteria
UW-Madison | Fall 2010-2011
Select at least 1 search criterion.
Select Course Subject and type the first letters of the subject
Class Search Criteria
School or College
Course Subject
Course Number
is exactly
Show Open Classes Only
Use Additional Search Criteria to narrow your search results.
Additional Search Criteria
Course Title Keyword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UW-Madison | Fall 2010-2011
Select at least 1 search criterion. Click Search to view your search results.
Class Search Criteria
School or College
Course Subject
ENGLISH
Course Number
CHEMICAL & BIOLOGICAL ENGR
CHEMISTRY
CHICANA/O & LATINA/O STUDIES
CIVIL AND ENVIRONMENTAL ENGR
CLASSICS
CLINICAL LABORATORY SCIENCE
COLLABORATIVE NURSING PRGM
COMMUNICATION ARTS
COMMUNICATIVE DISORDERS
COMMUNITY & ENVIRONMENTAL SOC
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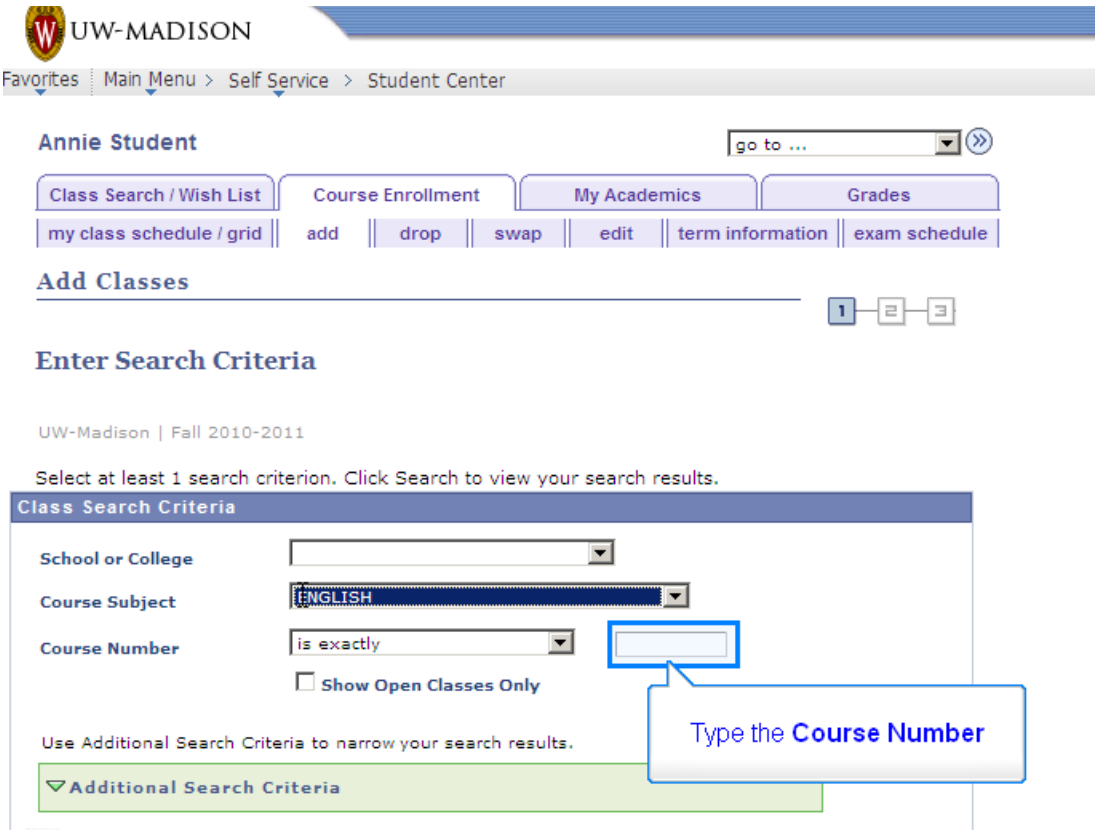
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Class Search Criteria
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Course Subject
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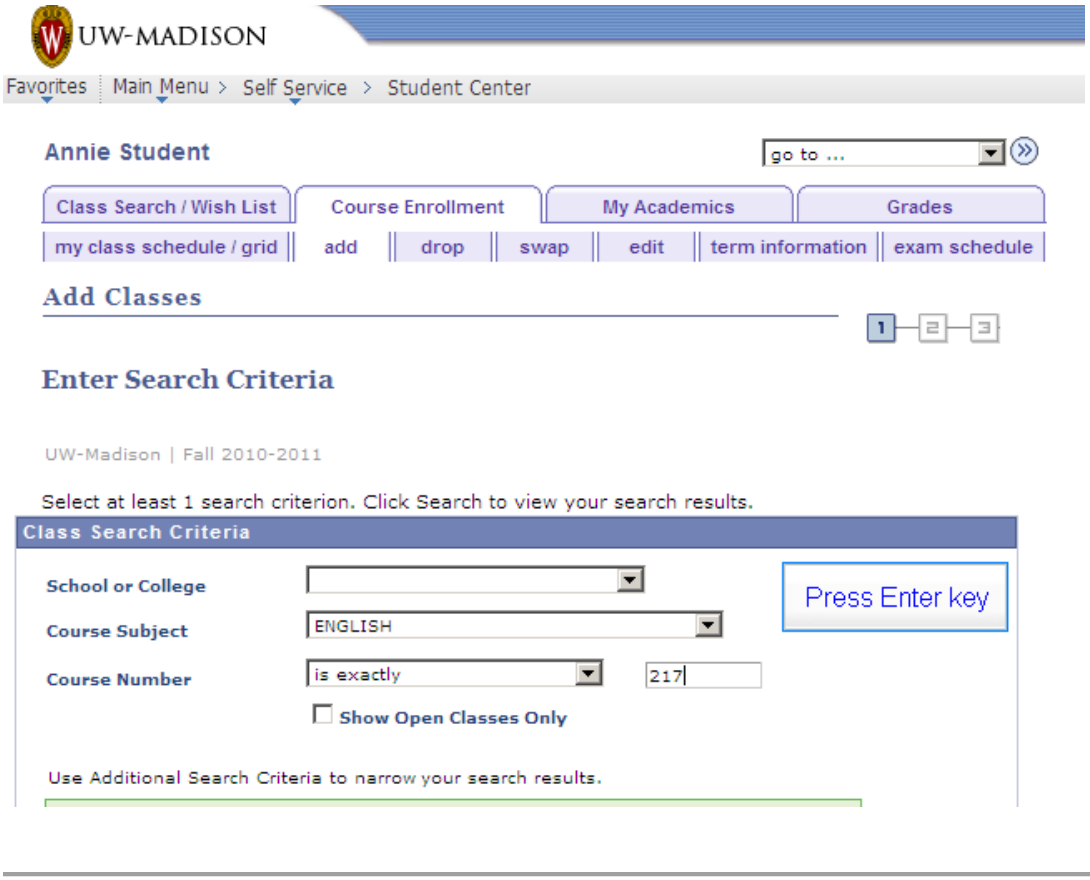
Show Open Classes Only
Use Additional Search Criteria to narrow your search results.
Additional Search Criteria
Type the Course Number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Enter Search Criteria
UW-Madison | Fall 2010-2011
Select at least 1 search criterion. Click Search to view your search results.
Class Search Criteria
School or College
Course Subject
ENGLISH
Course Number
is exactly
217
Show Open Classes Only
Use Additional Search Criteria to narrow your search results.
Press Enter key


UW-MADISON
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Course List
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The Course List page appears
UW-Madison | Fall 2010-2011
The following match your search criteria
Course Subject: ENGLISH
Course Number is exactly '217'
Show Open Classes Only: No
RETURN TO ADD CLASSES
START A NEW SEARCH
RETURN TO SEARCH
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Subject
Course Number
Course Title > Topic
geBLC
Prerequisites
Enrollment Packages
View
ENGLISH
217
American Literature
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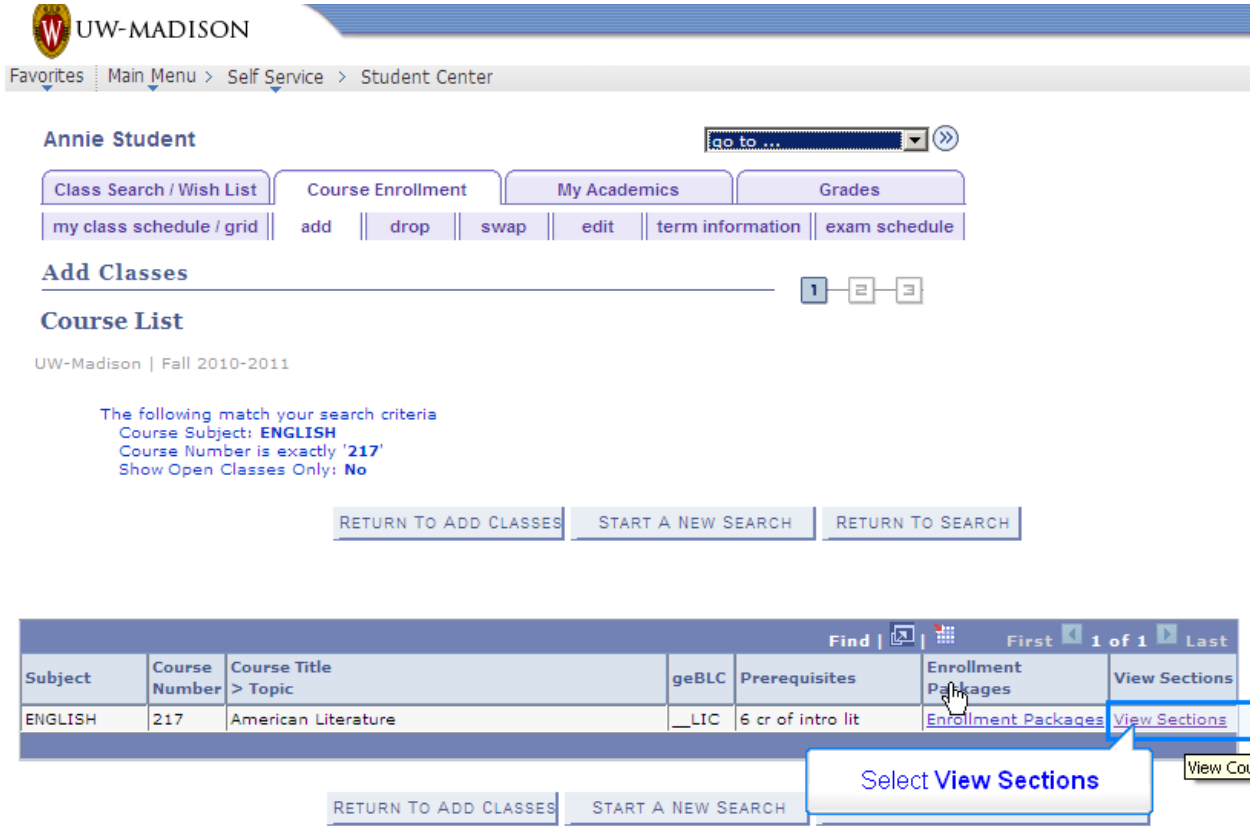
Enrollment Packages
View
RETURN TO ADD CLASSES
START A NEW SEARCH
RETURN TO SEARCH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UW-Madison | Fall 2010-2011
The following match your search criteria
Course Subject: ENGLISH
Course Number is exactly '217'
Show Open Classes Only: No
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START A NEW SEARCH
RETURN TO SEARCH
Find | First 1 of 1 Last
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Course Title > Topic
geBLC
Prerequisites
Enrollment Packages
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American Literature
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View Sections
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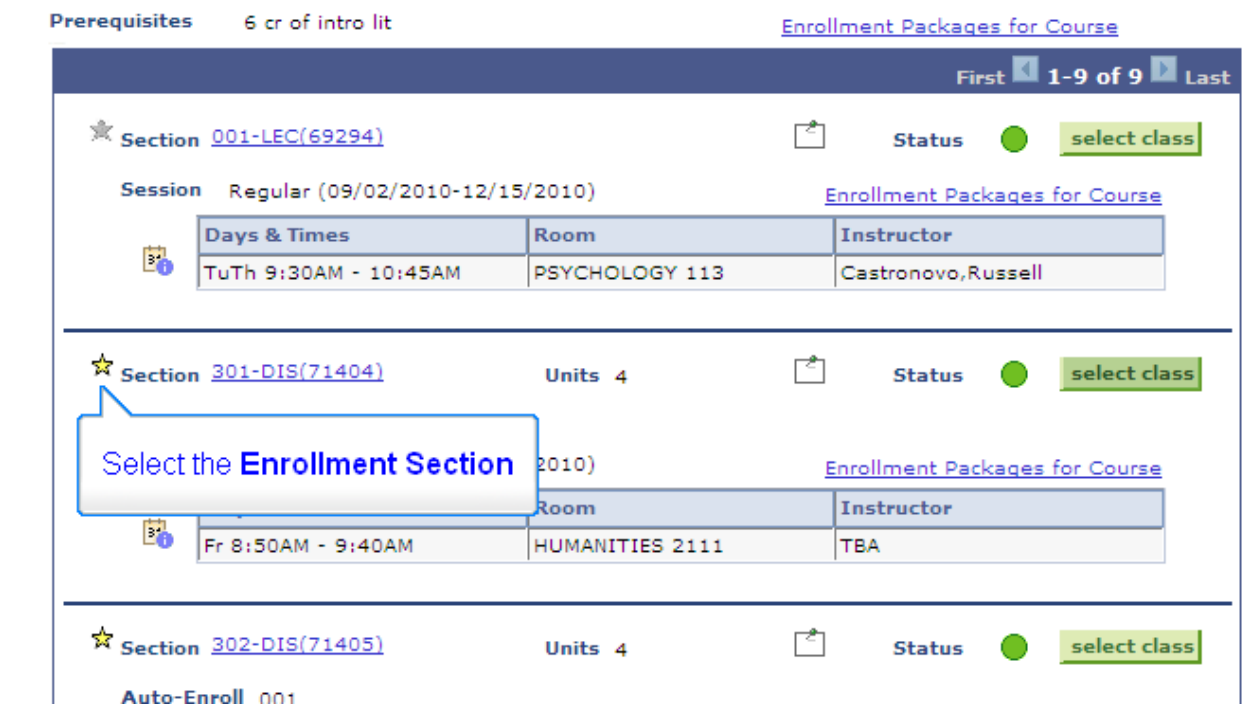
Prerequisites
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Enrollment Packages for Course
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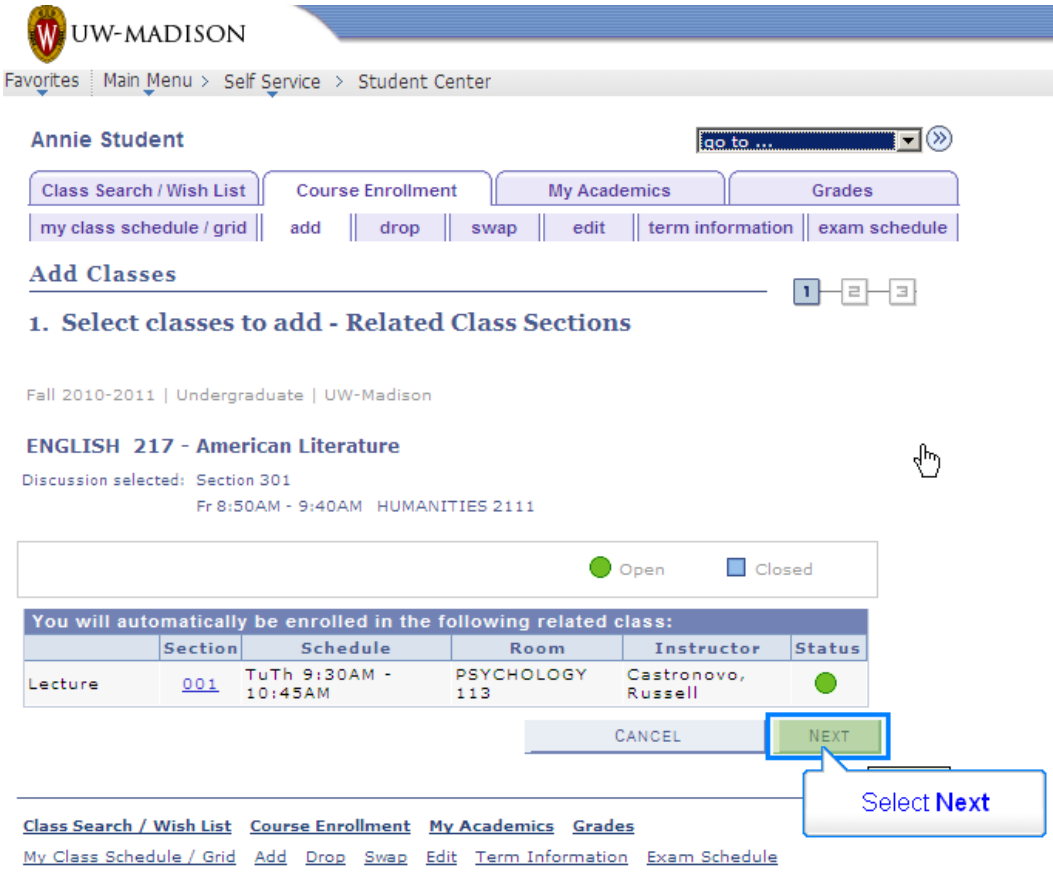
Section 001-LEC(69294)
Status
select class
Session Regular (09/02/2010-12/15/2010)
Enrollment Packages for Course
Days & Times
Room
Instructor
TuTh 9:30AM - 10:45AM
PSYCHOLOGY 113
Castronovo,Russell
Section 301-DIS(71404)
Units 4
Status
select class
Select the Enrollment Section
2010)
Enrollment Packages for Course
Room
Instructor
Fr 8:50AM - 9:40AM
HUMANITIES 2111
TBA
Section 302-DIS(71405)
Units 4
Status
select class
Auto-Enroll 001


UW-MADISON
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My Academics
Grades
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term information
exam schedule
Add Classes
1. Select classes to add - Related Class Sections
Fall 2010-2011 | Undergraduate | UW-Madison
ENGLISH 217 - American Literature
Discussion selected: Section 301
Fr 8:50AM - 9:40AM HUMANITIES 2111
Open
Closed
You will automatically be enrolled in the following related class:
Section
Schedule
Room
Instructor
Status
Lecture
001
TuTh 9:30AM - 10:45AM
PSYCHOLOGY 113
Castronovo, Russell
CANCEL
NEXT
Select Next
Class Search / Wish List
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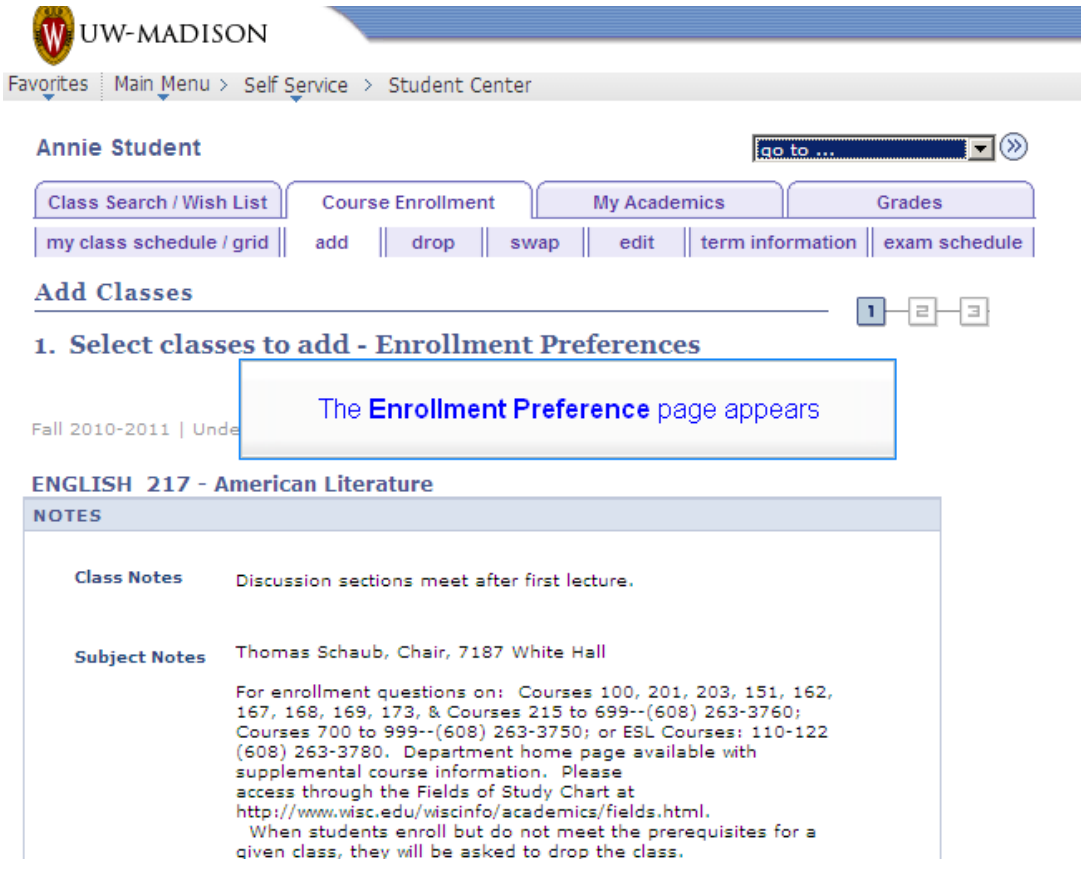
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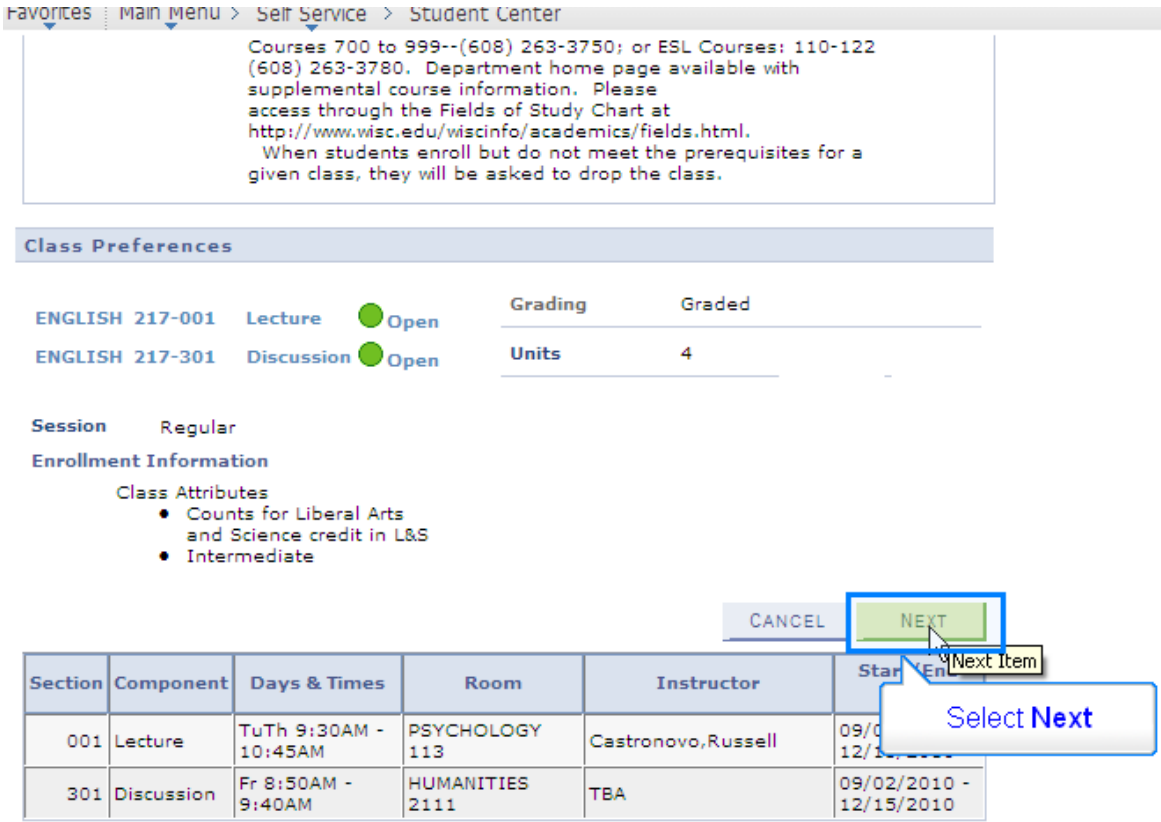
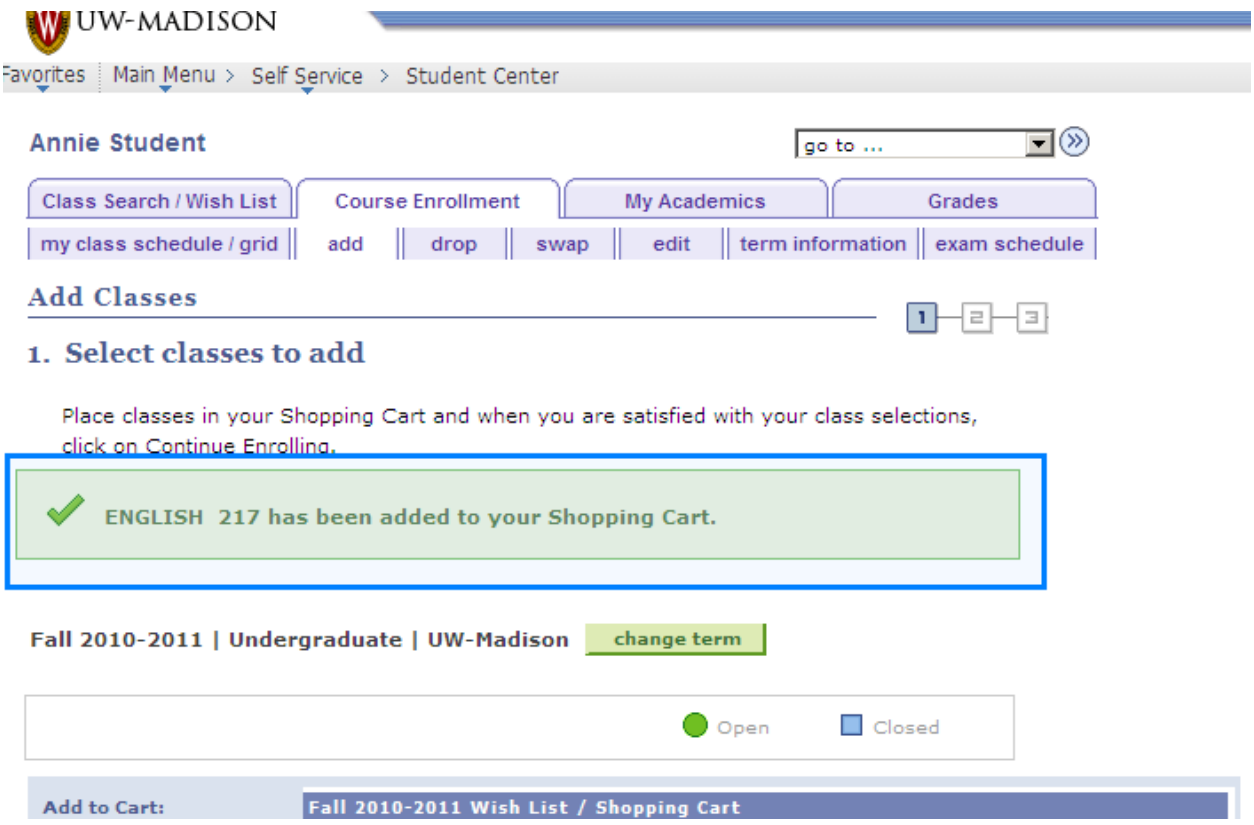
Add Classes
1. Select classes to add - Enrollment Preferences
The Enrollment Preference page appears
Fall 2010-2011 | Unde
ENGLISH 217 - American Literature
NOTES
Class Notes
Discussion sections meet after first lecture.
Subject Notes
Thomas Schaub, Chair, 7187 White Hall
For enrollment questions on: Courses 100, 201, 203, 151, 162, 167, 168, 169, 173, & Courses 215 to 699--(608) 263-3760; Courses 700 to 999--(608) 263-3750; or ESL Courses: 110-122 (608) 263-3780. Department home page available with supplemental course information. Please access through the Fields of Study Chart at http://www.wisc.edu/wiscinfo/academics/fields.html.
When students enroll but do not meet the prerequisites for a given class, they will be asked to drop the class.


Favorites | Main Menu > Self Service > Student Center
Courses 700 to 999--(608) 263-3750; or ESL Courses: 110-122 (608) 263-3780. Department home page available with supplemental course information. Please access through the Fields of Study Chart at http://www.wisc.edu/wiscinfo/academics/fields.html.
When students enroll but do not meet the prerequisites for a given class, they will be asked to drop the class.
Class Preferences
ENGLISH 217-001 Lecture Open
ENGLISH 217-301 Discussion Open
Grading Graded
Units 4
Session Regular
Enrollment Information
Class Attributes
Counts for Liberal Arts and Science credit in L&S
Intermediate
CANCEL
NEXT
Next Item
Select Next
Section Component Days & Times Room Instructor
001 Lecture TuTh 9:30AM - 10:45AM PSYCHOLOGY 113 Castronovo,Russell
301 Discussion Fr 8:50AM - 9:40AM HUMANITIES 2111 TBA 09/02/2010 - 12/15/2010


UW-MADISON
Favorites | Main Menu > Self Service > Student Center
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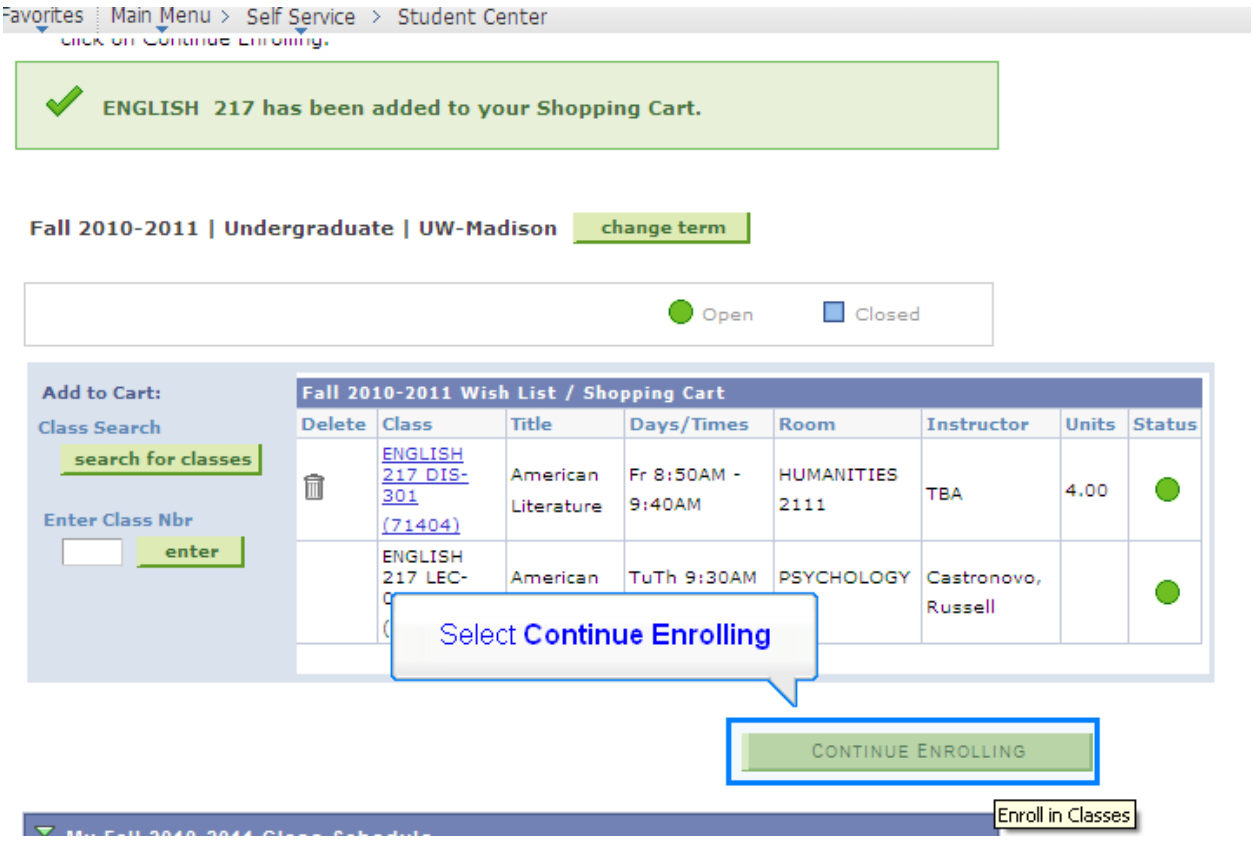
Class Search / Wish List | Course Enrollment | My Academics | Grades
my class schedule / grid | add | drop | swap | edit | term information | exam schedule
Add Classes
1 2 3
1. Select classes to add
Place classes in your Shopping Cart and when you are satisfied with your class selections, click on Continue Enrolling.
ENGLISH 217 has been added to your Shopping Cart.
Fall 2010-2011 | Undergraduate | UW-Madison change term
Open Closed
Add to Cart: Fall 2010-2011 Wish List / Shopping Cart


Favorites | Main Menu > Self Service > Student Center
ENGLISH 217 has been added to your Shopping Cart.
Fall 2010-2011 | Undergraduate | UW-Madison
change term
Open
Closed
Add to Cart:
Class Search
search for classes
Enter Class Nbr
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Fall 2010-2011 Wish List / Shopping Cart
Delete
Class
Title
Days/Times
Room
Instructor
Units
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ENGLISH 217 DIS-301 (71404)
American Literature
Fr 8:50AM - 9:40AM
HUMANITIES 2111
TBA
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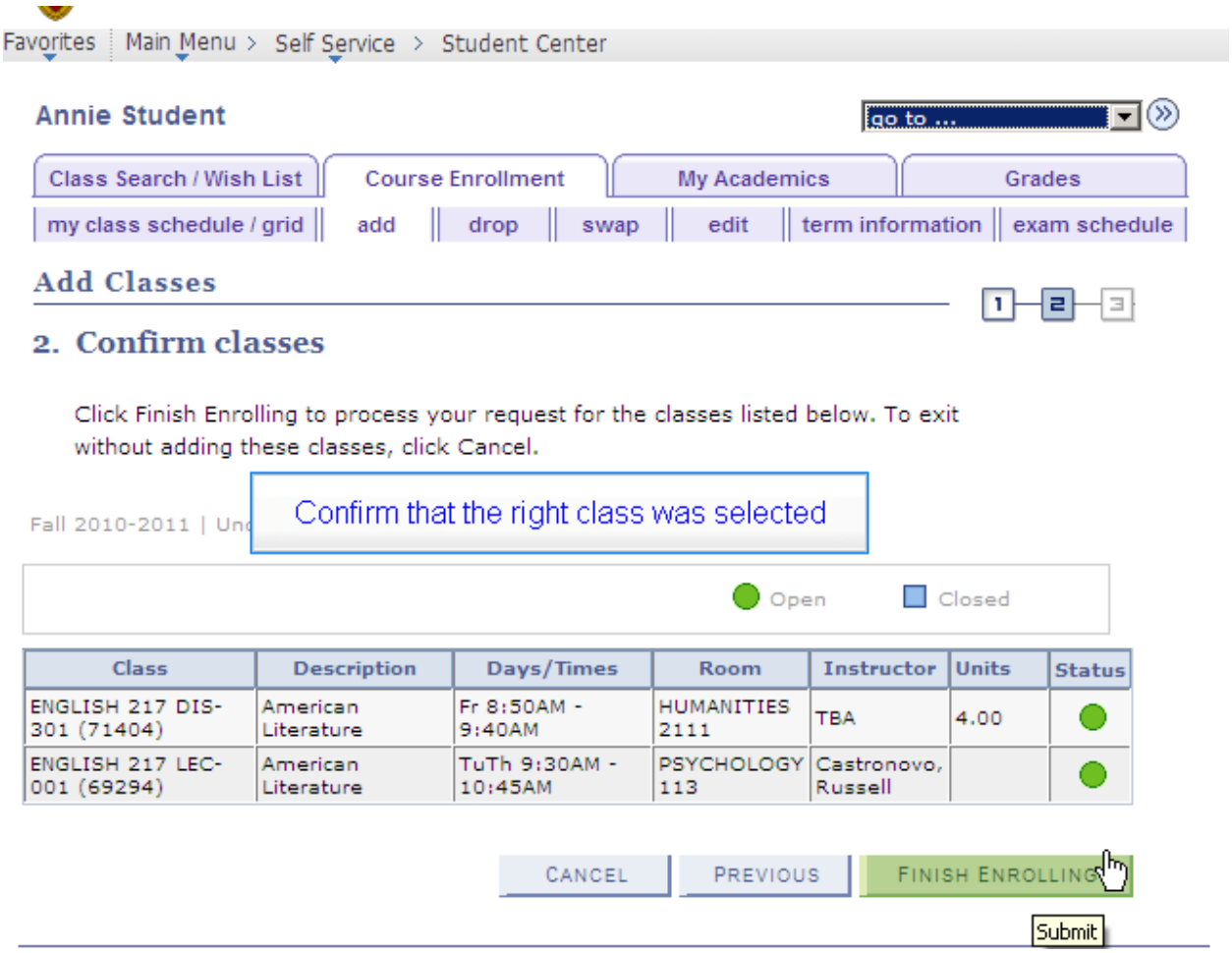
ENGLISH 217 LEC-
American
TuTh 9:30AM
PSYCHOLOGY
Castronovo, Russell
Select Continue Enrolling
CONTINUE ENROLLING
Enroll in Classes


Favorites | Main Menu > Self Service > Student Center
Annie Student
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Class Search / Wish List
Course Enrollment
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Add Classes
1
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3
2. Confirm classes
Click Finish Enrolling to process your request for the classes listed below. To exit without adding these classes, click Cancel.
Fall 2010-2011 | Und
Confirm that the right class was selected
Open
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American Literature
Fr 8:50AM - 9:40AM
HUMANITIES 2111
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ENGLISH 217 LEC-001 (69294)
American Literature
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PSYCHOLOGY 113
Castronovo, Russell
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PREVIOUS
FINISH ENROLLING
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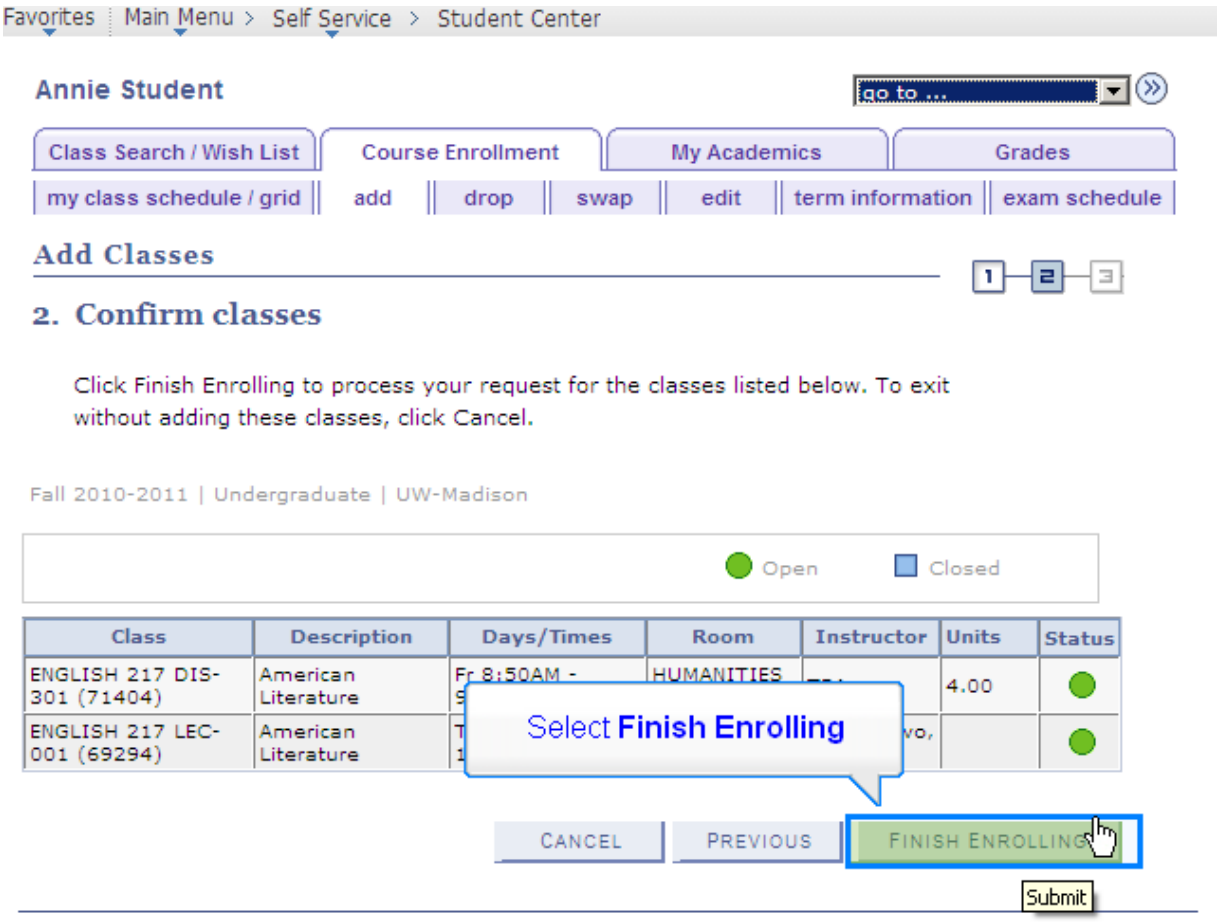
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Fall 2010-2011 | Undergraduate | UW-Madison
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Class
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Days/Times
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Units
Status
ENGLISH 217 DIS-301 (71404)
American Literature
Fr 8:50AM -
HUMANITIES
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ENGLISH 217 LEC-001 (69294)
American Literature
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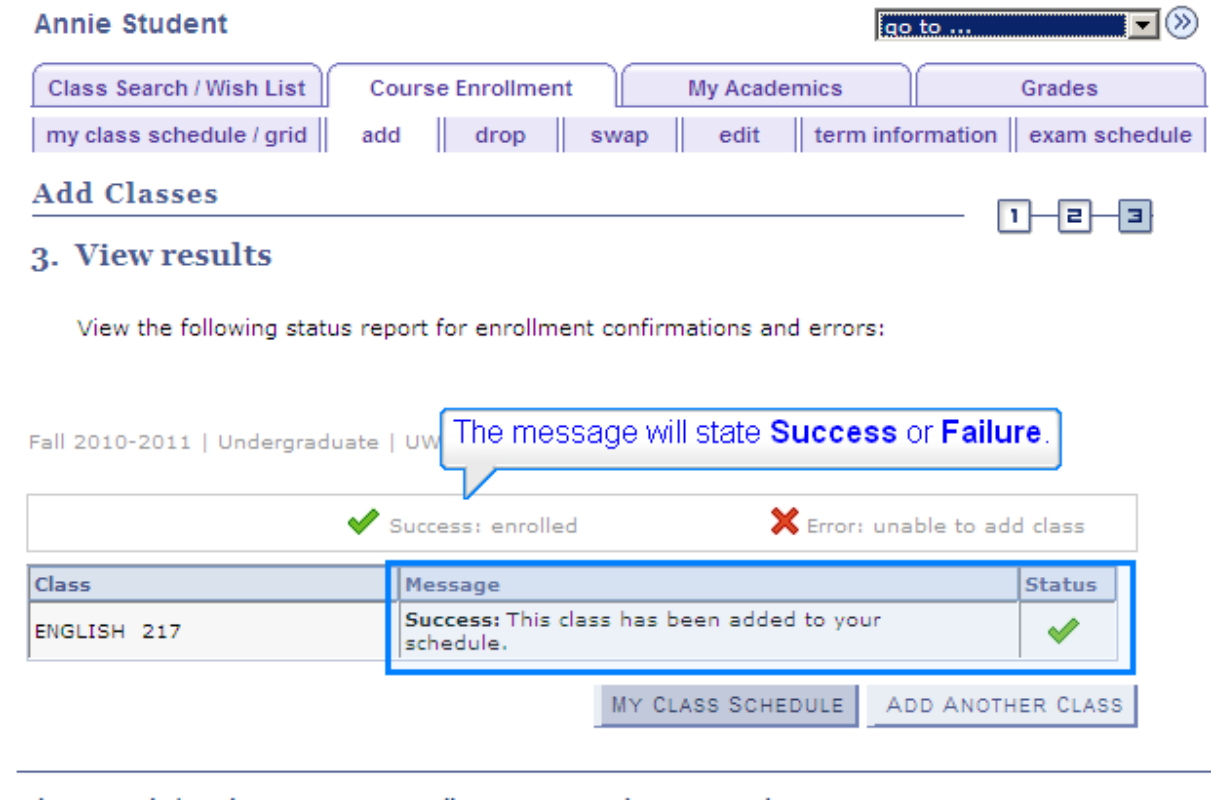
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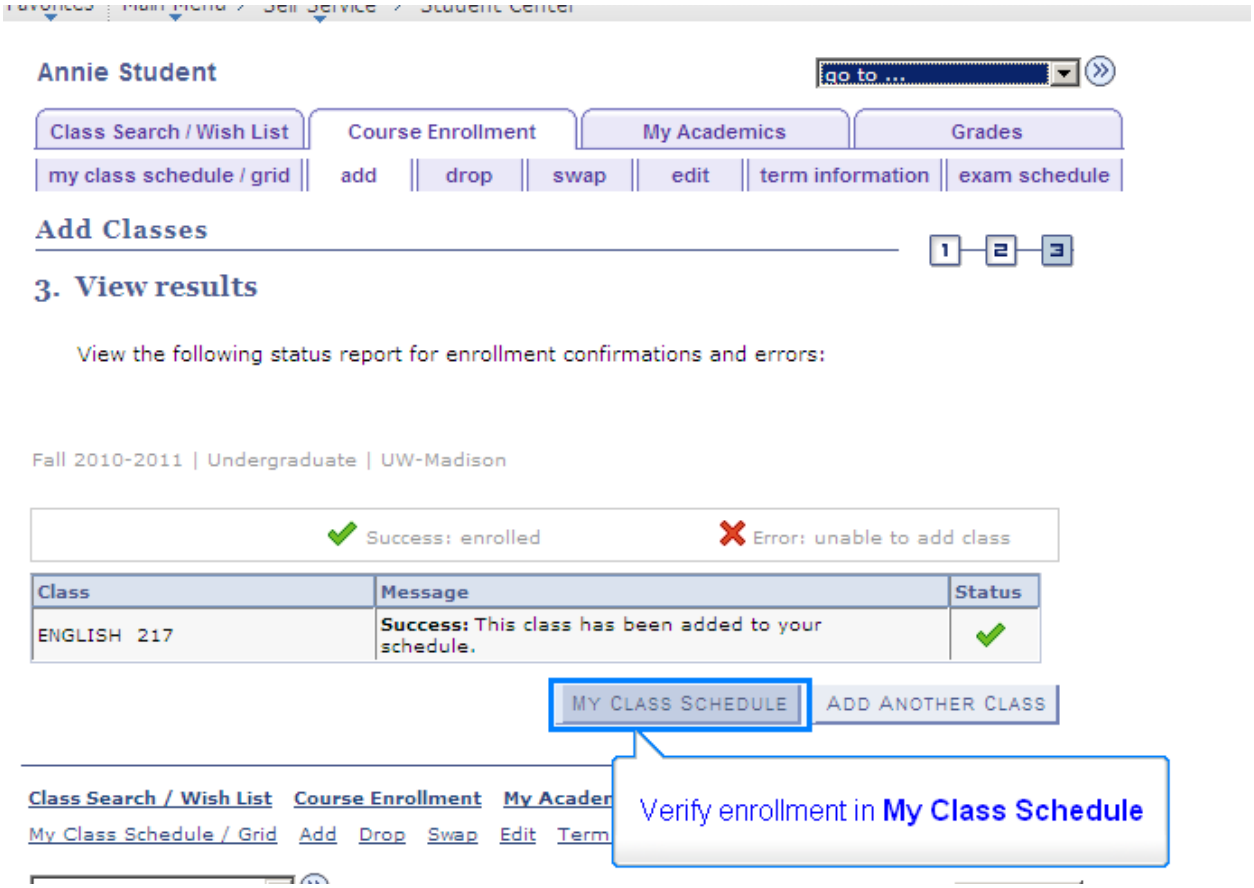
Add Classes
1 2 3
3. View results
View the following status report for enrollment confirmations and errors:
Fall 2010-2011 | Undergraduate | UW
The message will state Success or Failure.
Success: enrolled
Error: unable to add class
Class
Message
Status
ENGLISH 217
Success: This class has been added to your schedule.
MY CLASS SCHEDULE
ADD ANOTHER CLASS


Annie Student
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Class Search / Wish List
Course Enrollment
My Academics
Grades
my class schedule / grid
add
drop
swap
edit
term information
exam schedule
Add Classes
1 2 3
3. View results
View the following status report for enrollment confirmations and errors:
Fall 2010-2011 | Undergraduate | UW-Madison
Success: enrolled
Error: unable to add class
Class
Message
Status
ENGLISH 217
Success: This class has been added to your schedule.
MY CLASS SCHEDULE
ADD ANOTHER CLASS
Class Search / Wish List
Course Enrollment
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My Class Schedule / Grid
Add
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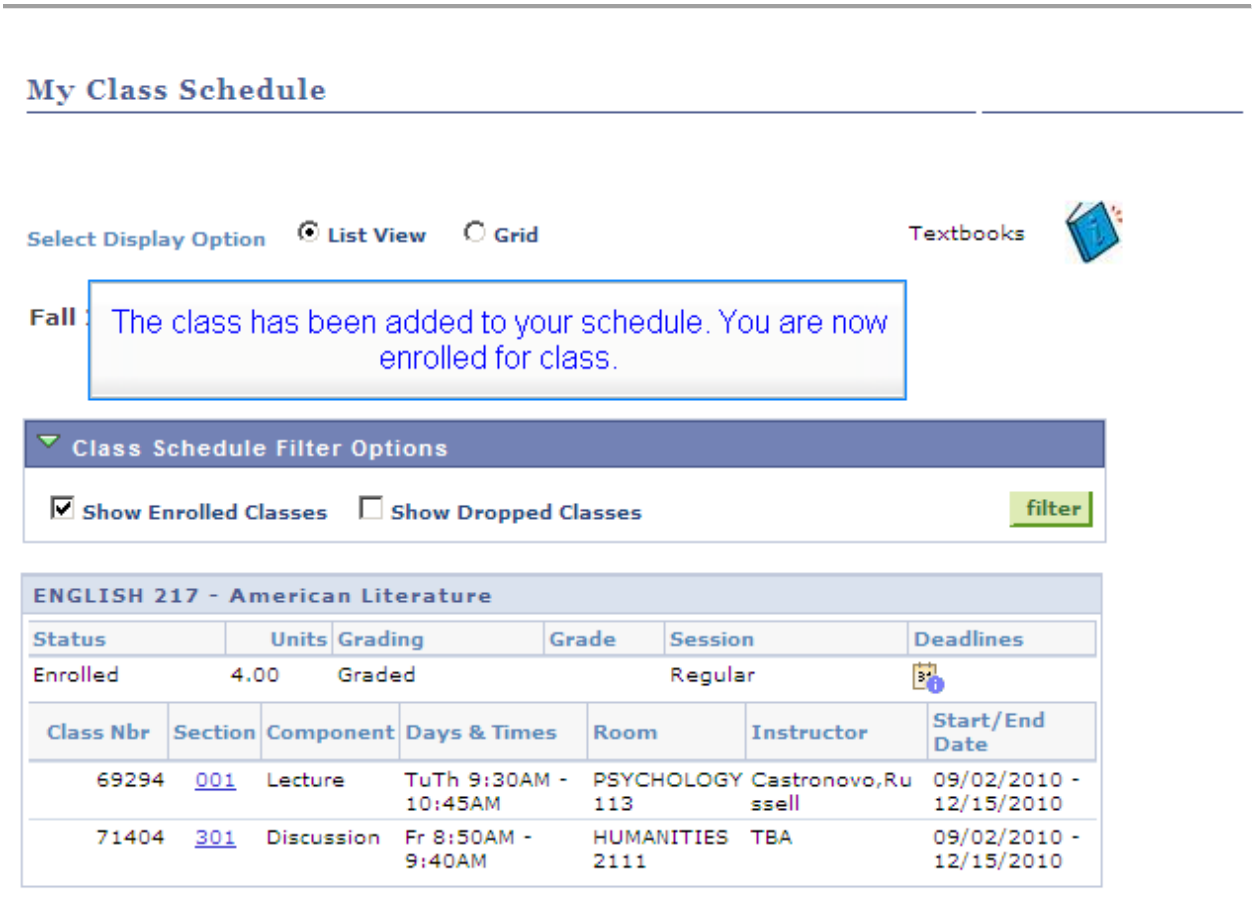
Swap
Edit
Term
Verify enrollment in My Class Schedule


My Class Schedule
Select Display Option
List View
Grid
Textbooks
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The class has been added to your schedule. You are now enrolled for class.
Class Schedule Filter Options
Show Enrolled Classes
Show Dropped Classes
filter
ENGLISH 217 - American Literature
Status
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Grade
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Deadlines
Enrolled
4.00
Graded
Regular
Class Nbr
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Days & Times
Room
Instructor
Start/End Date
69294
001
Lecture
TuTh 9:30AM - 10:45AM
PSYCHOLOGY 113
Castronovo,Russell
09/02/2010 - 12/15/2010
71404
301
Discussion
Fr 8:50AM - 9:40AM
HUMANITIES 2111
TBA
09/02/2010 - 12/15/2010

Grievance Procedures and Reporting Misconduct and Crime

If a student feels unfairly treated or aggrieved by faculty, staff, or another student, the University offers several avenues to resolve the grievance. Students' concerns about unfair treatment are best handled directly with the person responsible for the objectionable action. If the student is uncomfortable making direct contact with the individual(s) involved, they should contact the advisor or the person in charge of the unit where the action occurred (program or department chair, section chair, lab manager, etc.). Many departments and schools/colleges have established specific procedures for handling such situations; check their web pages and published handbooks for information. If such procedures exist at the local level, these should be investigated first.

In addition, the following administrative offices have procedures available for addressing various concerns:

Division of Student Life (for all grievances involving students)
75 Bascom Hall
students.wisc.edu
608-263-5700

Office for Equity and Diversity (for discrimination or harassment issues)
179A Bascom Hall
608-262-2378
oed.wisc.edu

Employee Assistance (for conflicts involving graduate assistants and other employees)
256 Lowell Hall
608-263-2987
eao.wisc.edu

Ombuds Office for Faculty and Staff (for graduate students and post-docs, as well as faculty and staff)
523-524 Lowell Center
608-265-9992
ombuds.wisc.edu

Ombuds Office for Medical School and Public Health (for students, faculty, and staff in the MSPH)
2262 Health Sciences Learning Center
608-265-9666
med.wisc.edu/for-staff/ombuds-office/main/786

Graduate School (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
217 Bascom Hall
500 Lincoln Drive
Madison, WI 53706-1380
608-262-2433
grad.wisc.edu

Graduate School Appeal Process:
An official review of procedures can be initiated by the Graduate School if a student feels that their grievance was not appropriately handled or resolved at the program/department or school/college level or through consultation with other resources listed above. Initial contact may be made through the Associate Dean in the student's division (Arts and Humanities, Biological Sciences, Physical Sciences, or

Social Studies; 608-262-1044) or through the Assistant Dean of Graduate Admissions and Academic Services (AAS; 608-262-2433).

If the student wishes to file an official appeal of a grievance decision, they should consult with the Assistant Dean of AAS and then send the following material to the Assistant Dean in 217 Bascom Hall:
• A detailed statement on the situation of the grievance and efforts to resolve the situation
• Copies of any previous communications regarding the situation
• Any determinations or actions taken by the program/department/School/College or other resource office.

Upon receipt of all of the above materials:
• The Assistant Dean will forward the formal grievance to the appropriate divisional Associate Dean for consultation and follow-up.
• The student will be notified in writing, within 20 days after the materials arrive in the Graduate School, acknowledging the receipt of the formal appeal and giving the student a time line for the review to be completed.
• If necessary, the Associate Dean will request additional materials relevant to the issues raised in a student's grievance from the student and/or the program/department (i.e., departmental handbook explaining grievance procedures).
• If necessary, the Associate Dean will arrange a meeting with the student and an appropriate designee of the Graduate School's Office of Admissions and Academic Services.
• If necessary, the Associate Dean will arrange a meeting with the advisor and/or program/department chair and the same member of the Graduate School's Office of Admissions and Academic Services.
• The Associate Dean will meet with the other divisional Associate Deans who will vote on a decision. The Dean of the Graduate School will not vote on this decision.
• The Associate Dean will notify the student, the advisor and/or program/department chair, in writing, of the decision, with a copy to the Assistant Dean for AAS.

Graduate School Final Appeal Process:
If a student is not satisfied with the initial appeal to the Graduate School Associate Deans, they may make a final appeal to the Graduate Faculty Executive Committee (GFEC) within 30 days of date of the above written decision:

• The student should send a request for a final appeal to the Assistant Dean for AAS, asking to reopen their file and including any new information pertinent to the appeal.
• The Assistant Dean for AAS will forward the complete file to the Dean of the Graduate School for follow-up.
• The Dean of the Graduate School will appoint five members from GFEC to review the appeal. At least two of the members, but not all the members should be representative of the student's academic division. One of the two divisional members will chair the committee. The Graduate School Associate Deans will not be a part of the appointed GFEC subcommittee.
• The Dean of the Graduate School will issue an official charge and an appropriate time frame (usually two to three months during the academic year) for completing a review.
• The GFEC subcommittee will review the student's final appeal, including all materials previously submitted, and will determine if additional information and/or meeting with the student and/or program/department is needed.
• Once determined, the subcommittee will report its recommendation to the next appropriate GFEC meeting. (Meetings occur every October, November, December, February, March, April, and sometimes May.) The full GFEC, with the exception of the Dean and Associate Deans, will vote on the appeal and advise the Graduate School Dean of its recommendation. The final decision, made on the basis of this recommendation and all other pertinent material, will be conveyed in writing by the Graduate School Dean to the student and the program, with a copy to the Assistant Dean for AAS.
• No further appeals are allowed.

Reporting Misconduct and Crime

The campus has established policies governing student conduct, academic dishonesty, discrimination, and harassment/abuse as well as specific reporting requirements in certain cases. If you have a grievance regarding unfair treatment towards yourself, please reference the procedures and resources identified above. If you learn about, observe, or witness misconduct or other wrongdoing you may be required to report that misconduct or abuse. Depending on the situation, it may be appropriate to consult with your advisor, Graduate Program Coordinator, or other campus resources (such as the UW Office of Equity and Diversity, Graduate School, Mc Burney Disability Resource Center, Employee Assistance Office, Ombuds Office, and University Health Services).

Research Misconduct Reporting

The University of Wisconsin-Madison strives to foster the highest scholarly and ethical standards among its students, faculty, and staff. Graduate students and research associates are among the most vulnerable groups when reporting misconduct because their source of financial support and the progress in their careers may be at risk by raising questions of wrongdoing. They are also often the closest witnesses to wrongdoing when it occurs and therefore must be appropriately protected from the consequences of reporting wrongdoing and be informed of their rights. Please find full details at https://research.wisc.edu/respolcomp/resethics/

Academic Misconduct Reporting

If you know a classmate is cheating on an exam or other academic exercise, notify your professor, teaching assistant or proctor of the exam. As a part of the university community, you are expected to uphold the standards of the university. Also, consider how your classmate's dishonesty may affect the overall grading curve and integrity of the program.

Sexual Assault Reporting

Faculty, staff, teaching assistants, and others who work direct with students at UW-Madison are required by law to report first-hand knowledge or disclosures of sexual assault to university officials, specifically the Office for Equity & Diversity or the Division of Student Life. This effort is not the same as filing a criminal report. Disclosing the victim's name is not required as part of this report. Please find full details at http://www.oed.wisc.edu/sexualharassment/assault.html
and http://www.students.wisc.edu/doso/studassist.html#sexassault

Child Abuse Reporting

As a UW-Madison employee (under Wisconsin Executive Order #54), you are required to immediately report child abuse or neglect to Child Protective Services (CPS) or law enforcement if, in the course of employment, the employee observes an incident or threat of child abuse or neglect, or learns of an incident or threat of child abuse or neglect, and the employee has reasonable cause to believe that child abuse or neglect has occurred or will occur. Volunteers working for UW-Madison sponsored programs or activities are also expected to report suspected abuse or neglect. Please find full details at http://www.oed.wisc.edu/childabuse/

Reporting and Response to Incidents of Bias/Hate

The University of Wisconsin-Madison values a diverse community where all members are able to participate fully in the Wisconsin Experience. Incidents of Bias/Hate affecting a person or group create a hostile climate and negatively impact the quality of the Wisconsin Experience for community members. UW-Madison takes such incidents seriously and will investigate and respond to reported or observed incidents of bias/hate. Please find full details at
http://students.wisc.edu/doso/biasreporting.html and http://www.students.wisc.edu/rights/what-if-i-witness-or-experience-a-bias-related-incident/

Section 4

Master's Degree Program

MASTER'S DEGREE REGULATIONS

University of Wisconsin-Madison – Department of Statistics
Revised May 1, 2014 - Effective for students entering the program in Summer/Fall 2014 or later

The objective of the Master's degree (MS) requirement is to satisfy the Department that the candidate has the potential to be a practicing statistician, it being understood that a practicing statistician must also have a proper grasp of statistical theory.

The Master's degree and PhD programs are distinct. The student can obtain a PhD without first obtaining a Master's degree. A Master's degree is regarded as evidence of having the skills of a practicing statistician. It confers a specific status on the recipient and it is hoped that most students will obtain a Master's degree, regardless of whether or not they proceed to a PhD.

The requirements for a Master's degree in Statistics are:

(a) Satisfaction of University requirements.
(b) Adequate course performance. A grade of B or better must be received in any course used to fulfill the required and elective course requirements.
(c) Passing a competency test of the candidate's potential as a practicing statistician (again, bearing in mind that this may include testing of theoretical competence).

1. Course Requirements (30 credits)

- Stats 609 (3 cr) or 709 (4 cr)
- Stats 610 or 710 (4 cr)
- Stats 849 (3 cr)
- Stats 850 (3 cr)
- Stats 998 (3 cr)
- Six or more elective credits from statistics courses numbered 600 or higher (with the exception of 609, 610, 699, 709, 710, 849, 850, or 998)
- The following will also be allowed to count towards the 30-credit minimum for the Master's degree (with permission of the Curriculum and Degree Requirement Committee)
    - Up to six credits from statistics courses numbered 327, 349, 351, 411, 421, 456, or 471 (students may not count both 456 *and* 760, 349 *and* 701, or 471 *and* 771)
    - Up to six credits of research (699)
    - Up to six credits of graduate courses in other departments complementary to the student's interest areas
    - Up to six credits of statistics coursework at the 600-level or above, taken while an undergraduate or special student at UW-Madison, provided that the work was completed no more than five years prior to admission to the Master's degree (with permission of the chair of the Master's Examination Committee). If the work was completed as a special student, the student must also pay the difference between special student and graduate tuition.
- If completing the Biostatistics option, six credits must include three credits of Stat 641 and three credits of either Stat 642, 741, or 877.

2. Competency Test

The Master's degree competency test (examination) will be the responsibility of an Examination Committee of faculty members (usually four) appointed by the faculty. Typically, the appointment

will be for two years and half the committee will be reappointed each year to provide overlap and continuity.

After the candidate successfully completes 998 or the semester in which 998 is taken, the candidate must demonstrate to the Examination Committee the potential to be a practicing statistician. The committee is given latitude to decide the details on each occasion as to how this will be done. However, the general form of the competency test (examination) will be as follows:

(a) The candidate will be presented with one or more written problems or projects and asked to provide a brief written report involving a suitable statistical analysis seven days later.
(b) The candidate will meet briefly with the clients related to the projects early in the examination period.
(c) After a further period of time, not to exceed ten days, the candidate will go before the Examination Committee for an oral examination based on questions arising from the above problems or projects. It is understood that the area of questioning may be extended to cover additional aspects of the candidate's theoretical or practical background on which satisfaction of competence is considered desirable by the committee.

A candidate may attempt the competency test at most twice. If a candidate initially attempts the MS degree exam in the fall and does not pass, a second attempt must be made in the following spring or fall. If a candidate initially attempts the MS degree exam in the spring and does not pass, a second attempt must be made in the following fall or spring. A candidate desiring to take this exam must register with the Examination Committee prior to the exam date. Picking up the exam constitutes an attempt *regardless of whether or not the examination is submitted for grading.*

3. **Graduate School Higher Learning Commission Requirements**

- A Master's degree requires 30 credits (not including audits or pass/fail). *[Minimum Graduate Degree Credit Requirement]*
- At least 16 of these credits must be taken in-residence at UW-Madison. *[Minimum Graduate Residence Credit Requirement]*
- Half of the degree course work (15 credits out of 30 total credits) must be completed in Statistics courses numbered 600 or higher (which our department considers to be graduate courses). *[Minimum Graduate Course Work (50%) Requirement]*
- With program approval, students are allowed to count no more than 9 credits of graduate course work from other institutions toward the graduate degree credit and graduate course work (50%) requirements. Course work earned five or more years prior to admission to a Master's degree is not allowed to satisfy requirements. *[Prior Course Work Requirement]*
- With program approval, up to 6 statistics credits from a UW-Madison undergraduate degree at the 600 level or above are allowed to count toward minimum graduate degree credits. Course work earned five or more years prior to admission to a Master's degree is not allowed to satisfy requirements. *[Prior Course Work Requirement]*
- With program approval, and payment of the difference between special and graduate tuition, up to 15 statistics credits completed at UW-Madison while a University Special Student at the 300 level or above are allowed to count toward minimum graduate degree and graduate residence credit requirements. Of these credits, those at the 700-level or above may also count toward the minimum graduate course work (50%) requirement. Course work earned five or more years prior to admission to a Master's degree is not allowed to satisfy requirements. *[Prior Course Work Requirement]*

BIOMETRY MS DEGREE REGULATIONS

University of Wisconsin-Madison – Department of Statistics
Revised 05/01/14 - Effective for students entering the program in Fall 14 or later

A) General

Graduate School entrance, residence and general requirements must be fulfilled. Specific requirements are listed below. The background courses in biology are a bare minimum; it is anticipated that almost all successful applicants will have a strong background in some area of biological science. Under extenuating circumstances, students may appeal to the Executive Committee for exemptions to prerequisites or requirements.

B) Prerequisites

1. Undergraduate calculus (Math 221, 222, and 234 or equivalent).

2. Course in statistics (For/Hort/Stat 571 and 572 or equivalent one year sequence).

3. Background courses in biology (e.g. Bot 130, Zool 101 & 102, Biology 151 & 152).

C) Required coursework

Each student must complete 30 credits of required courses as enumerated in the four categories below. At least 16 of these credits must be earned while the student is enrolled at UW-Madison. Courses used to satisfy requirements must be taken for a letter grade and passed with a grade of B or higher. A minimum of 9 of the 30 credits must be completed while enrolled in the Program. A grade of B or better must be received in any course used to fulfill the required and elective course requirements.

1. Six credits of Intro Math Stat (Stat 309-310 or 311-312, or equivalent one-year sequence).

2. Six credits in Statistics courses numbered above 600 (excluding 641, 698, 699, 756, and 990).

3. Three additional credits in Stats courses numbered at the 500 level or above (excluding 571, 572, 698, and 990) which are specifically designed for graduate students. Credits from suitable quantitative courses taught in other (non-biological) departments (e.g. mathematics) may be substituted.

4. Nine credits in biological courses numbered 300 or above (excluding introductory statistics courses and research) so that: at least six credits are taken in a single discipline or in closely related disciplines, at least six credits are taken at the 700 level and above, or in courses specifically designated by the relevant department as “graduate” courses, and a maximum of three credits are obtained in statistically oriented courses (e.g. MAS 610, Agron 770 or Agron 811).

D) Consulting experience

Students must complete three credits of Statistics 699 (Directed Study -- S/U grade) by consulting in the CALS Statistical Consulting Service. (These credits cannot be used for meeting requirements

in section C.) This consists of supervised consulting and will provide exposure to statistical issues surrounding a broad range of problems in biology, provide awareness of practical issues such as experiment management, data collection, data recording, etc., and provide experience assisting others in designing experiments and analyzing data. One credit is roughly equivalent to a single project that can be completed in one semester, and involves about 20-30 hours of effort, including meetings with consulting clients, background research, data analyses, etc.

E) Biometry project

Each student must complete a project that represents an original contribution to biometry. Examples of such contributions may include a novel analysis of some interesting biological data, the creation and evaluation of a useful experimental design, or the development and/or comparison of statistical methods. The project results are to be presented in a manuscript with emphasis on the integration of statistics and science. The manuscript should be of a quality that can lead to a publication. This requirement will be formalized by enrolling in at least three credits of "Research'' (e.g. Hort 990) in the department of one of the co-advisors. (These credits cannot be used for meeting requirements in section C.) For a student seeking a double M.S., a joint thesis would satisfy this requirement.

F) Final oral examination

Upon completion of course work and project, a three-member committee composed of the student's co-advisors plus an additional faculty member from Statistics will examine the student orally. This examination will cover the student's project and course work. For a student seeking a double M.S., a combined examination is acceptable. If failed, the oral examination may be repeated once.

At least three weeks prior to the final oral exam, you must fill out an MS Warrant Form with the Graduate Coordinator in Statistics. Please pick up the warrant from the Graduate Coordinator on the day of your oral exam.

G) Requirements for students seeking more than one degree

1. Students seeking two M.S. degrees (both research degrees) must recognize Graduate School requirements that at most 25% of the credits used for one degree can be applied towards the other. Students pursuing a professional degree may seek a Biometry M.S. but may not use courses required for a professional degree to count towards the Biometry M.S. degree.

2. There are no Graduate School limitations on applying credits towards both a M.S. and a Ph.D. degree. Credits used to satisfy the Biometry M.S. can also be used towards satisfaction of requirements for a Statistics minor, subject to approval by the appropriate minor certification committees. It should be noted that the Graduate School will not grant dissertator status on the Ph.D. program until completion of all requirements for the Biometry M.S. degree except for the final project. Upon reaching dissertator status, the student will register for research or thesis credits (they will have completed all coursework). The student should make application for both the Master's and PhD degrees during the semester in which they defend.

Statistics Masters Degree Option Data Science (MS-DS) Regulations

Created 10/16/2015. These regulations are effective for students entering the program in Summer/Fall 2016 or later. The objective of the Statistics Masters Degree Option Data Science (MS-DS) requirement is to train students to be practicing data scientists with a proper grasp of statistical methods and theory.

The MS-DS program is distinct from the other MS and PhD programs offered through statistics. The MS-DS program has two types of students:

- **MS-DS for VISP Students:** Students from another non-pooled program, such as the Visiting International Student Program, may have completed some degree requirements as undergraduates. They may request transfer of up to 15 credits from their VISP coursework, typically for the required sequences Stat 601-602 and 609-610.
- **MS-DS for Workforce Students:** Students with 5 or more years in the workforce having extensive experience with data may be seeking a well-rounded training in data science. Some workforce students may opt for part-time status (take 6-8 credits per semester) after being admitted.
  NOTICE: Admissions of MS-DS for Workforce Students will be delayed to 2017-18. No workforce students will be enrolled this year for 2016-17.

Note: ***MS-DS students are not allowed to be employed as an RA, PA, TA, or any other position at UW-Madison that leads to tuition remission. If a student is found to have such a position, s/he will be immediately removed from the MS-DS program.***

Prerequisites and Requirements

The recommended prerequisites for the MS-DS are:

- Stat 327 Data Analysis with R (2-3 credits)
- Math 340 Matrix & Linear Algebra (3 credits)
- Math 421 Single Variable Calculus (3 credits; has prerequisites of Math 221-222-234)

The requirements for an MS-DS are:

- Satisfaction of University requirements.
- Adequate course performance (see last point and Criteria for Satisfactory Progress). The student must obtain a grade of B or higher in every course used to satisfy the MS-DS degree requirement.
- Complete these courses:
  - Four required courses (15 credits): Stat 601, 602, 609, 610; [16 after 609 has 4 cr]
  - 15 or more elective credits from courses listed below. [14 after 609 has 4 cr]
- 9 or more of the 15 elective credits must be from statistics courses numbered 600 or higher (with the exception of 609, 610, 699, 709, 710, 849, 850, or 998). [8 or more of the 14 after 609 has 4 cr]

See our page on How to Apply to MS-DS.

Typical Courses for MS-DS

Required Core Data Science Courses (1-3 cr each)

Students must complete two year-long core sequences in statistical methods

- Stat 601 Statistical Methods I (4 cr)
- Stat 602 Statistical Methods II (4 cr)

and in mathematical statistics

- Stat 609 Mathematical Statistics I (3 cr)
- Stat 610 Introduction to Statistical Inference (4 cr)

Potential Statistics Elective Courses (mostly 3 cr each)

- Stat 349 Introduction to Time Series
- Stat 351 Introductory Nonparametric Statistics
- Stat 411 An Introduction to Sample Survey Theory and Methods
- Stat 421 Applied Categorical Data Analysis
- Stat 456 Applied Multivariate Analysis
- Stat 461 Financial Statistics
- Stat 471 Introduction to Computational Statistics
- Stat 479 Special Topics in Statistics
- Stat 575 Statistical Methods for Spatial Data
- Stat 627 Professional Skills for Data Science
- Stat 628 Data Science Practicum
- Stat 679 Special Topics in Statistics
- Other courses above 600 as approved by MS-DS Committee

Graduate School Higher Learning Commission Requirements

- A Master's degree requires 30 credits (not including audits or pass/fail). [Minimum Graduate Credit Requirement]
- At least 16 of these credits must be taken in-residence at UW-Madison. [Minimum Graduate Residence Credit Requirement]
- Half of the degree course work (15 credits out of 30 total credits) must be completed in Statistics courses numbered 600 or higher (which our department considers to be graduate courses). [Minimum Graduate Course Work (50%) Requirement]
- With program approval, students are allowed to count no more than 9 credits of graduate course work from other institutions toward the graduate degree credit and graduate course work (50%) requirements. Course work earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements. [Prior Course Work Requirement]
- With program approval, and payment of the difference between special graduate tuition, up to 15 statistics credits completed at UW-Madison while a University Special Student at the 300 level or above are allowed to count toward minimum graduate degree and graduate residence credit requirements. Of these credits, those at the 700-level or above may also count toward the minimum graduate course work (50%) requirement. Course work earned five or more years prior to admission to master's degree is not allowed to satisfy requirements. [Prior Course Work Requirement]

The Master's Exam
A Faculty View
Department of Statistics
The University of Wisconsin-Madison

Date of exam

Revised 1998

At Wisconsin the Master's degree in Statistics is distinct from the Ph.D. degree. The Master's degree is aimed at preparing students for careers in consulting whereas the Ph.D. degree is directed to research. The main requirement for the Master's degree is fulfilling certain coursework requirements and passing the Master's exam.

The Master's exam reflects the consulting orientation. You are given two real-world problems and are required to produce a written report on each problem one week later. Usually you will be able to have a short interview with the researcher who provided the problem so you can ask him/her about some of the background to the problem or ask for clarification on some parts of the question. You can also explore ideas that you have on how to analyze the data. The researcher, whether you meet with him/her or not, should be viewed as a client for whom the analysis and report is intended.

Two or three days after the written reports are submitted, you will have an oral exam of approximately half an hour. In this exam the Master's Exam Committee (four faculty members from the Statistics Department) will ask you about the analyses that you did and the reports that you wrote. They may also ask about some statistical or practical issues related to the problems and your reports. Later that day, the committee will decide if you pass or fail the exam. You usually receive written notification the next day.

Even though the reports are graded by faculty members of the Statistics Department, the reports are intended to be directed to the client. You should provide analysis and a style of presentation that is appropriate for the client. Part of your grade will be based on how well your report can be understood by the client.

Choice of Problems

How are problems chosen for the Master's Exam? They are consulting problems that real clients want to have answered. As much as possible we try to make these problems realistic and we try to phrase them in the way that the client brought them to us. Sometimes the definition of the problem is cleaned up a bit so it is easier for you to decide what you are supposed to do. Also, some modifications may be made so that the problem fits into the time frame appropriate to the Master's Exam.

A file containing previous exams may be borrowed from Jude Grudzina in the Statistics office. The data sets corresponding to some of these exams may be found in the directory /p/stat/Data/Ms.exam or via the World Wide Web under the Department at http://www.stat.wisc.edu.

Preparation

We assume that a person taking the Master's Exam has a good background in basic statistical techniques. It is assumed that this background will include a course in linear models and analysis of variance (at the level of 849-850), and in statistical consulting (998). The statistical consulting (998) experience should include data presentation and report writing. The background should also include knowledge of some additional techniques such as time series analysis (701-702),

categorical data analysis (421) or biostatistics (749) although there are no expectations of particular subject matter skills.

More important than the knowledge of specific topics is the ability to approach a practical problem and use good statistical reasoning to produce a useful answer. There is no "right" answer for the problems – we are looking for a useful, statistically sound report. Your experience in Statistics 998 is the best guide to the types of reports expected on the Master's exam.

Essential to preparation for the Master's Exam is gaining some facility with the computer system and with (preferably two or more) statistical packages. Some of the packages that may prove useful are SAS, Minitab, and S-plus. As noted, exposure to specific statistical topics like time series analysis is helpful, but more in the sense of broadening your thinking than because you expect that a problem will fall exactly into a time series framework. You may be required to learn enough about a topic such as logistic regression to answer an exam problem, but that is also what can happen to you in actual consulting practice so flexibility and adaptability are more important than knowledge of specific techniques. (The committee setting the exam will be very aware of the time factor and will not expect a major investment of time learning new techniques.)

There will be no 'single correct approach' to any problem. Sound application of basic techniques is the key to success on the Exam. The simplest method that properly answers the client's question is the best.

One way to gain facility in statistical consulting is to have some experience in consulting. There are many opportunities on campus. There are formal consulting groups in Biometry, Biostatistics, and Quality and Productivity. There are many other opportunities for informal consulting with a wide range of researchers. You are encouraged to explore these.

A final suggestion – unfortunately it appears inevitable that the structure of the Master's exam tends to make part of the experience an endurance test. You are strongly encouraged to budget your time carefully and get enough rest throughout the week of the exam. Although it is easy to generate lots of computer output when one is tired, in general, statistical judgment is best when one is fresh. The committee recognizes that you could easily spend an entire month on the exam. All the committee is looking for is a statistically sound approach that answers the main questions that the clients have posed. It is usually unwise to invest time in fancy complex procedures that the client would probably not understand anyway. The best course is to keep things simple.

MS Exam, Spring, 2014

Schedule: Handed out: 1:00 p.m., Tuesday, April 8, 2014
Due: 10:00 a.m., Tuesday, April 15, 2014
Oral exams: Friday, April 18, 2014

Notice of intent:

If you intend to take the exam this semester, please so indicate on or **before March 14** by stopping in the Administrative office in Room 1220 MSC to sign up for the exam in person. **No more than twelve students may take the MS exam each semester. If you sign up for this exam the last day to cancel will be Friday, April 4.**

Committee: R. Chappell (Chair), B. Larget, K. Rohe, J. Zhu

Format: The exam consists of problems similar to those that may later be encountered on the job. The exam has two parts: (1) preparing one or more written reports and (2) answering oral questions of the Master's Exam Committee. Copies of earlier exam problems are available for reading in Administrative office (Room 1220.)

Written reports:

There should be a separate report for each problem on the exam. Each report should be directed to the "client" whose problem you are attempting to solve and should be limited to at most 12 pages, including computer output, tables, and figures. It is extremely important that each report be *concise, well-written,* and *thorough*. However, you need to ensure that your report contains the appropriate amount of "hard" statistical information. Finding the balance between too much and too little 'hard' statistical information is a key part of report preparation.

Oral exams:

The oral questioning provides an opportunity to explore various points in greater depth and to clear up questions such as those relating to choice of models, priorities and analyses not reported. Questioning is not necessarily limited to just those topics covered in the written portion of the exam. Please sign up for a time for the oral exam when you pick up the exam.

Taking the exam:

Picking up a copy of the exam constitutes "taking the exam." If a student fails the exam on the first attempt, the following options are available:

- If you fail the exam in the fall, the second and final attempt must be made the following spring or the following fall.
- If you fail the exam in the spring, the second and final attempt must be made the following fall or the following spring.
- Failure to turn in the reports by the indicated time will constitute failure on the exam.
- Errata sheets will be accepted by the committee at the time of the oral exam. Obviously, such errata should be kept to a minimum.

Computer facilities:

The departmental computers are intended as the primary computers for this exam. The data file(s) will be accessible on all departmental computers. Many of the data sets from earlier M.S. exams are available on the departmental computers in subdirectories of /p/stat/Data/MS.exam/. Use of non-departmental computer systems is allowed for the exam but you will have to make your own arrangements for copying data and accessing the necessary software.

Intent to graduate:

If you hope to graduate with the M.S. this semester, you need to inform Andrea of this when you sign up for the exam, so that she can file the appropriate form with the Graduate School.

University of Wisconsin-Madison
Department of Statistics
Rm 1220 MSC
1300 University Avenue
Madison WI 53706-1685
(608) 262-2598

April 8, 2014

TO: Master's Exam Candidates

FROM: Master's Exam Committee (R. Chappell, chair, J. Zhu, B. Larget, K. Rohe,)

SUBJECT: Master's Examination, Spring 2014

Schedule:	Handed out:	1:00 p.m., Tuesday, April 8, 2014
	Due:	10:00 a.m., Tuesday, April 15, 2014
	Oral exams:	Friday, April 18 between 8:30 am and 11:25 am

The examination should be treated as confidential and candidates should ensure that no one else reads it until after the oral examinations are completed on April 18. In addition, the examination should not be discussed with anyone else until that time, unless permission is obtained from the committee to do otherwise. The only exceptions to this rule involve members of the exam committee. Please sign the attached honor code form on the day you pick up the exam (April 8) and then again at your oral exam on April 18 (there are two lines on the form to be signed on the different dates).

Questions regarding the exam should be addressed to Rick Chappell. He can be reached through email as "chappell." Outside of client interviews, any question should be addressed to the committee chair, for fairness purposes and to avoid extra burden on the clients. Questions to clarify the problem description or data entry will be communicated to the client by the committee chair and answers will be forwarded to all students if necessary.

There are two problems: (1) Copepod Adaptation to Crude Oil and (2) Genomic Prediction of Milk Production. Submit one report for each problem. The reports are to be aimed at the client. Each report should not exceed 12 pages (double-spaced) including the title and summary. There should not be a full page set aside as a title page; one to two lines of title should be followed immediately by the rest of your report. The reports must be clear and readily legible, with the body of the text double-spaced and in a font that produces no more than 32 lines of text per page (for example, **Word**, with 1.5 line spacing, standard width, and various 11pt fonts; or various **LaTeX** formats using 11pt or 12pt). Figure and table captions may be single-spaced. A very brief Appendix may be included with each problem, and is not counted toward the 12-page limit. Be sure to number all the pages in your report.

In general, caution should be exercised in deciding what to include in the appendices. Information critical to your major analyses should be presented in the main body of the report. A few extra graphs

and tables can properly be included in the appendices, but keep in mind that lengthy appendices will not generally receive as much attention as part of the report.

You will be given a code name by the graduate coordinator, Andrea Palm, when you pick up your examination. Put this code on your reports. Your name should NOT appear on the reports.

Carol Lee, the client on the Copepod Adaptation to Crude Oil problem, will be available for appointments on Wednesday, April 9, from 1:15 pm to 3:15 pm in Room 1219 MSC.

Amy Stanton, the client on the Genomic Prediction in Milk Production problem, will be available for appointments on Thursday, April 10, from 1:30 pm to 3:45 pm in Room 1219 MSC.

Prepare a written list of questions on each problem and give this list to the client at the beginning of the session. It is understood that an answer to any question may cause you to follow up with questions in an order that differs from the one prepared ahead of time. Indeed, you may think of questions that had not occurred to you before. Make a photocopy of your lists of questions and hand them in as an Appendix to your report. Be sure your name does not appear on these lists.

Turn in the original of each report along with three photocopies (four total). Note that your reports are due by 10:00 am on Tuesday, April 15. Keep a copy for yourself. Make sure that all photocopies are clearly readable. Check especially the graphs and tables. It is your responsibility to ensure that you have sufficient time for photocopying. Recall that the departmental photocopiers should not be used for large jobs. You are encouraged to arrange for your own copying. Give yourself plenty of time!

Exams are due on time. Late exams will not be accepted, unless accompanied by a written explanation regarding the reason(s) for being late. Exams handed in late will be graded, and an oral exam will be offered, so that students can obtain feedback. However, if the exam is handed in late, the student will fail the MS exam. Under very extenuating circumstances, the student may appeal the ruling that the MS exam is automatically failed due to lateness of handing in the exam. Such an appeal, if it is desired, should be included with the written explanation regarding the reason(s) for being late. The Committee will rule on the appeal prior to conducting the oral exams.

We expect that the department computers will be adequate for this exam. You may use other computer systems, but we will not answer questions pertaining to the use of other systems. The data for the exam will be sent to you in an email shortly after you pick up the exam.

During the oral exam you will answer questions from committee members. Bring a copy of your reports and get prepared for questions.

NOTE: If Andrea Palm is not in her office during this exam week or the day it is due, and you have a question, her back-up contact is Nancy Brinkerhoff, tel (608) 262-1009.

REMEMBER TO BRING FOUR COPIES TO ANDREA PALM BY 10:00 AM ON 4/15/14!

UNIVERSITY OF WISCONSIN–MADISON
Graduate School
Advancing Knowledge through Education and Research

Expecting Your Master's Degree? Procedures to Help

What You Need to Do:

You must meet both departmental and the Graduate School requirements for graduation. It is your responsibility to notify your departmental graduate coordinator by the department deadline of your intention to graduate. Your department must request your degree warrant **a minimum of three weeks before your defense/exam or the degree deadline**. The Graduate School issues a degree warrant if you meet these requirements:

- Graduate registration for a minimum of two graduate-level credits (300-level or above for a grade, no audits, or pass/fail) in the semester (fall, spring or summer) you expect your degree. Alternatively, if a degree completion fee has been approved by the Graduate School, you must have paid the fee in lieu of registration (see the Academic Guidelines: degree completion fee).

- Credit requirement for the appropriate degree has been met, or will be by the end of the semester (master's degrees, 30 credits)

- Graduate GPA of at least 3.00.

- All incomplete, unreported grades, or progress grades in anything other than research/thesis (usually 690, 790, 990) must have been cleared. Independent study (usually 699, 799, or 999) must be given a grade (not progress) each semester. If you are continuing for a Ph.D., a warrant may be issued even though you have incomplete or progress grades that are part of your Ph.D. program, but your advisor needs to send a letter to the Graduate School stating which courses are for your Ph.D. requirements.

- Students receiving a second (or third) master's degree from UW-Madison, and students receiving two master's degrees during the same semester, must submit official lists (on departmental letterhead and signed by advisors or department chairs) of courses used for each degree. We use these lists to check the 25% overlap rule.

- You must complete all requirements by the appropriate degree deadline.

Things You Need to Know:

Master's Completion Student Update: Please complete the Master's Completion Student Update to inform the Graduate School about your academic and career plans. By completing the update, you provide the Graduate School with valuable information about post-degree placement, and help us determine how we can improve programs and services for students. At the end of the semester, graduate students will be sent an email containing instructions on how to complete the update.

Degree Warrant: A warrant is a document issued to your department by the Graduate School at your department's request after you have met all degree requirements. Warrants are valid for one

semester, and are signed by the department chair, advisor, or your committee. By signing the warrant, departments indicate that all departmental degree requirements have been met. If the Graduate School does not have your warrant with appropriate signature(s), you will not graduate. NOTE: If your department has signed and returned your warrant to the Graduate School, and you receive an Incomplete or Progress grade at the end of the semester, or you deposit your thesis after the degree deadline, you will receive your degree during the following semester when your grade is cleared or your thesis is deposited (if your program requires thesis deposit).

Degree Completion Fee: The amount of this fee is equal to two credits at the in-state rate. The Graduate School must approve payment of the fee in lieu of registration. If the fee is appropriate for you, your department must submit a Degree Completion Fee Request Form to the Graduate School for approval. To qualify you must be finished with all degree requirements except for a thesis defense, comprehensive exam, presentation of a final project, or an incomplete course. **You must have submitted your thesis, paper, or project to your advisor while you were registered in the previous semester.**

Degree Completion Letter: Before your degree is posted on your final transcript and diploma is available, you can request a Degree Completion Letter from the Registrar about two weeks after the end of the session (or sooner if you complete early in the semester and all requirements are cleared). Contact Office of the Registrar at 333 East Campus Mall #10101.

Window Period: This is the time between the end of one degree period and the beginning of the next. If you were registered for the previous semester and met all degree requirements by the end of the window period, your degree will be granted in the following semester, but you will not have to register or pay fees for the next semester.

Other Information About Your Graduation:

Transcripts: The Registrar posts degrees on official transcripts approximately four to six weeks after the end of the semester. You can order transcripts at the Office of the Registrar. Call 262-3811 for more information.

Diploma: The Office of the Registrar will send your diploma to your DIPLOMA address approximately 12 weeks after degree conferral. Update your Diploma address via My-UW prior to leaving campus. International students: you MUST enter your DIPLOMA address via My-UW to receive your diploma.

International Mailing Address for Diploma and Certification of Graduation: If you wish to have your diploma sent to an address outside of the U.S., tell the Registrar ahead of time at 333 East Campus Mall #10101. Certification letters are always sent by air mail.

Commencement: Once you have met your degree requirements, you may choose to attend a fall or spring commencement ceremony. Commencement occurs in May and December each year and is coordinated by the Office of the Chancellor. There is no summer commencement ceremony. If you plan to graduate in August, you may attend either the May or the December ceremony. If you want your name to be printed in the commencement program, you must apply to graduate through your MyUW Student Center by the deadline each semester in addition to contacting your major program to request a degree warrant from the Graduate School. For Master's students, the deadline to request your warrant can be found in the Degree Deadlines. You may attend the commencement ceremony even if your name is not included in the commencement program. See commencement.wisc.edu for more information.

Application to PhD Program in Statistics for Students Currently Enrolled in the Department's MS Program

General Principles: Students who successfully complete our MS Program (or are very close to completion of the Program) and demonstrate sufficient aptitude to complete our PhD Program are encouraged to continue toward the PhD in our Department. Any necessary and appropriate exemptions to the timing deadlines in our Criteria for Satisfactory progress will normally be granted. For students of sufficient promise for the PhD, an offer of financial support (or extension of existing support) will be seriously considered.

Application procedure: A student currently completing the MS degree in our Department wishing to pursue the PhD here needs to take the following actions.

Write a letter addressed to the chairperson of the Graduate Admissions Committee that addresses the following issues:

a. The student's exact status in the MS Degree program. (Is s/he finished or what is left to be completed?)
b. An indication of desire and/or need for financial support. (Assurance of consideration for a new commitment of support or an extension of an existing commitment commencing in the fall will require that the application be submitted by the deadline for fall admissions.)
c. The student's goals in seeking the PhD. (Any special interests or possible research objectives should be mentioned.)
d. (optional) Any other information that might be helpful for the committee (not likely to be found in the student's Departmental folder).

(Optional): Up to two letters of recommendation from UW faculty attesting to the student's promise for the PhD.

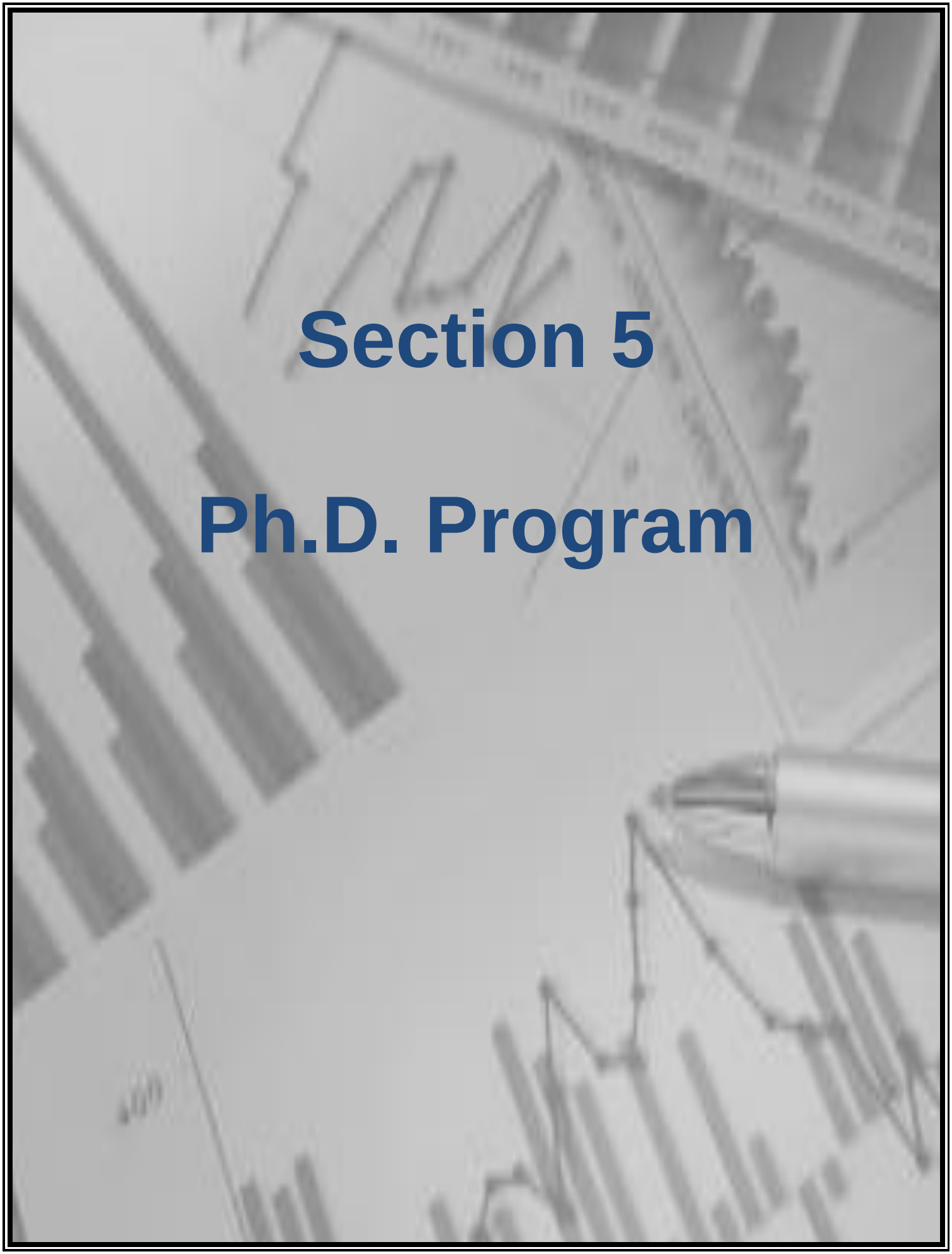
All these materials should be given to the Graduate Student Coordinator.

Decision process: The Graduate Admissions Committee will consider the application. It should be noted that successful completion of the MS degree is not an entitlement to continue for the PhD. Each student's potential for success in the PhD program will be carefully evaluated.

Requests will be made for additional material if this might be helpful. Except for decisions regarding financial support, the Committee will attempt to provide a decision within 6 weeks of submission. In general, decisions on financial support (new commitments or extensions of commitments) will be made early in the spring semester each year. In some (rare) situations, it may be possible to make such a decision at other times.

All questions relative to this process should be addressed to the Chairperson of the Graduate Admissions Committee and/or the Graduate Student Coordinator (Andrea Palm).

05/01/14



Section 5

Ph.D. Program

PhD DEGREE REGULATIONS

University of Wisconsin-Madison – Department of Statistics
Revised May 1, 2014 - Effective for students entering the program in Summer/Fall 2014 or later

1. Course Requirements (51 credits)

- Stats 709 and 710 (Mathematical Statistics)
- Stats 733 (Measure Theoretic Probability)
- Stats 849 and 850 (Statistical Methods and Applications)
- Stats 998 (Statistical Consulting)
- Eighteen or more elective credits from statistics courses numbered 641, 642, or 700 or higher (with the exception of 609, 610, 699, 709, 710, 849, 850, 990, or 998). If 992 is used to fulfill the elective requirement, a maximum of 9 credits can be counted, with a maximum of three credits on any one topic.
- Breadth requirement (option A, B, or C). Specific requirements can be found in section 5 of this document.
- The following may also be allowed to count towards the 51-credit minimum for the PhD degree:
    - Up to six credits of graduate courses in other departments complementary to the student's interest areas (with permission of the student's advisor).
    - Up to six credits of statistics coursework at the 600-level or above, taken while an undergraduate or special student at UW-Madison, provided that the work was completed no more than ten years prior to admission to the PhD degree (with permission of the student's advisor). If the work was completed as a special student, students must also pay the difference between special student and graduate tuition.
- Sufficient credits of Statistics 990 to reach the 51-credit minimum.
- If completing the Biostatistics option, 12 credits of the required 18 elective credits must include three credits of Stat 641, six credits from this list: (Stat 642, 741, and 877), and three credits selected from this list: (Genetics 466, Zoology 570, Biocore 303, Population Health 795, or Medical Sciences 622-721).

A grade of B or better must be received in any course used to fulfill the required and elective course requirements.

With the approval of the Curriculum and Degree Requirements Committee, up to nine credits of graduate course work taken elsewhere or equivalent material learned elsewhere may be used to fulfill the above requirements. Approval must be requested within the first two semesters of registration as a graduate student in the department.

2. Qualifying Examination

The student must pass the PhD Qualifying Examination within six semesters from the first fall semester of registration as a graduate student in the Department. The examination may be attempted a maximum of two times.

Master's degree students who successfully complete the Department's MS Degree Requirements within four semesters and are then admitted to the PhD program must pass the PhD Qualifying Examination within four semesters after entering the PhD program.

The examination is a written exam and is based on a syllabus made available by the PhD Qualifying Examination Committee. A reading list containing references discussing material on the syllabus is also available. Most or all of the syllabus material is covered in the required courses, 709, 710, 733, 849, and 850.

The written examination is given during the week before or the first or second week of classes in each semester and is administered on two days. The first day covers Mathematical Statistics and is based on the material of 709 and 710; typically the student must answer three questions from a list of four. On the second day the student must answer two questions from a list of four containing two questions based on material from 849-850 and two questions based on material from mathematical distribution theory and probability (709 and 733).

Passing or failing this examination will not affect the student's candidacy for the Master's degree.

3. Preliminary Examination

The student must pass an oral preliminary examination on a topic selected with the approval of the student's advisor. The examination is given by a committee of at least four faculty members appointed by the advisor. Prior to the actual examination, the student must prepare a 15 to 20 page paper outlining the area to be covered. The paper must be written in a clear style with consistent notation. The paper should indicate the scope and depth of the student's dissertation research, and should be submitted to the committee at least one week prior to the examination.

The examination typically consists of a 20 to 30 minute talk by the student and questions by the committee. The committee may ask questions during and after the talk. The student may consult notes, but is expected to display a mastery of the subject matter as defined by the list of references. The scope of the questions will normally be directed to the subject matter of the paper but may, by natural extension, include any relevant topic. The student's advisor may not serve as chair of the committee, but does appoint the chair.

At least three weeks before the scheduled Preliminary Examination, students should contact the graduate coordinator, who will request a preliminary warrant from the Graduate School. Upon review, the Graduate School will return the warrant to the Graduate Coordinator for committee members to sign after the examination.

4. Dissertation

The primary requirement for the PhD degree is the completion of a significant body of original research and the presentation of this research in a dissertation. The research is carried out under the guidance of a member or members of the Department. The candidate must defend the dissertation in a final oral examination.

At least three weeks prior to the final oral examination, the student should contact the graduate coordinator, who will submit a request for a "PhD Final Oral Committee Approval Form" to the Graduate School. Upon review, the Graduate School will return the warrant to the Graduate Coordinator, which will then need to be signed by the Committee and Department Chair following a successful defense.

Students are responsible for ensuring that they meet Graduate School requirements and deadlines: http://grad.wisc.edu/currentstudents/degreedeadlines/ and http://grad.wisc.edu/currentstudents/degree/ .

5. Breadth Requirements

There are three options that fulfill the breadth requirement. For all options, students must complete PhD Breadth Requirement form and have it signed.

Option A (External): Fulfill the minor requirement as specified by another department or program other than Statistics. Students should contact the individual department or program for details.

Option B (Distributed minor):

- At least 9 credits in one or more departments other than Statistics.
- At least 3 credits must be from courses numbered 600 or higher.
- Some courses numbered lower than 600 may not be included*.
- Any course covering the same material as existing courses in Statistics cannot be included* except that at most one course cross-listed with Statistics may be included if it is not staffed by the Statistics department. (* The Department maintains a list of such courses. For example, the following courses are not included: all courses 300 or below, CS 302, CS 367, Math 521, Math 522, Econ 709, Econ 710.)
- Courses must be completed with grades BC or higher with an average of B or higher.

Option C (Breadth): Fulfill at least two of the following three:

- Participatory seminar experience: Take two one-credit seminar courses outside of the Statistics and Biostatistics and Medical Informatics (BMI) departments. These must involve some level of active participation, such as an oral presentation or written report.
- Collaborative research experience: This provides students with direct experience in interdisciplinary collaborative research activity under the guidance of a faculty trainer. The student must report the results of this activity in an advertised seminar. Students may fulfill this requirement by rotating through directed study/research credits with Statistics or Biostatistics degree option faculty trainers, or with faculty from other departments.
- Breadth course: Take a 2-3 credit graduate course outside of the Departments of Statistics or BMI. This must be at or above the 600 level, or be from the approved list of outside courses for the Biostatistics Degree Option.

For option B, the student must complete a PhD Minor Agreement Form signed by the student's advisor and the Department Minor Advisor before starting the second minor course.

For option C, the student must present a tentative proposal signed by the student's advisor and the Department Breadth Advisor before starting the second part of this option. The student must write a letter to the Chair of the Curriculum and Degree Requirements Committee (CDRC) detailing how the requirements are fulfilled and submit with PhD Breadth Requirement form.

Students who do not yet have a major professor and who want some preliminary advice on the kinds of programs likely to be approved may speak with a Graduate Advisor for New Students.

6. Graduate School Higher Learning Commission Requirements

- A PhD degree requires 51 credits (not including audits or pass/fail). *[Minimum Graduate Degree Credit Requirement]*
- At least 32 of these credits must be taken in-residence at UW-Madison. *[Minimum Graduate Residence Credit Requirement]*

- Half of the degree course work (26 credits out of 51 total credits) must be completed with a combination of Statistics courses numbered 600 or higher (which our department considers to be graduate courses), and, if doing the Biostatistics option, courses considered graduate courses from other departments used to satisfy the Biostatistics requirements (including, but not limited to, Genetics 466, Zoology 570, Biocore 303, Population Health 795, and Medical Sciences 622-721). *[Minimum Graduate Course Work (50%) Requirement]*
- With program approval, students are allowed to count no more than 9 credits of graduate course work from other institutions toward the graduate degree credit and graduate course work (50%) requirements. Course work earned ten years or more prior to admission to a doctoral degree is not allowed to satisfy requirements. *[Prior Course Work Requirement]*
- With program approval, up to 6 statistics credits from a UW-Madison undergraduate degree at the 600 level or above are allowed to count toward minimum graduate degree credits. Course work earned ten years or more prior to admission to a doctoral degree is not allowed to satisfy requirements. *[Prior Course Work Requirement]*
- With program approval, and payment of the difference between special and graduate tuition, up to 15 statistics credits completed at UW-Madison while a University Special Student at the 300 level or above are allowed to count toward minimum graduate degree and graduate residence credit requirements. Of these credits, those at the 700-level or above may also count toward the minimum graduate course work (50%) requirement. Course work earned ten years or more prior to admission to a doctoral degree is not allowed to satisfy requirements. *[Prior Course Work Requirement]*

THE UNIVERSITY of WISCONSIN MADISON

Department of Statistics
1220 Medical Science Center
1300 University Avenue
Madison, WI 53706-1510
(608) 262-2598

April 21, 2016

MEMORANDUM

TO: Statistics Graduate Students

FROM: PhD Qualifying Exam Committee (Sunduz Keles, Chair; Andrea Palm, Coordinator)

SUBJECT: PhD Qualifying Exam in Statistics, Fall 2016

**Please note that this memo does not apply to students who are entering the department in Summer or Fall 2016; the earliest they should attempt to take the Qualifying Exam would be in Fall 2017 (or possibly in Spring 2017, although in the last several years, the Qualifying Exam has only been offered in August).

The Statistics PhD Qualifying Exam is scheduled for **Tuesday, August 30, 2016.** Students who sign up must indicate whether they will be taking Option A (709/710) or Option B (609/610/849/850). Both options will be held in 133 SMI from 12:30-4:30 pm on August 30th. A detailed syllabus with information about the material to be tested for both options is attached to help you decide which option you will be taking.

Here are the general guidelines for the exam:

1. The exam will be closed book but you are permitted to bring one page of notes. The page of notes may be double-sided (not two one-sided pages back-to-back), and it must be handwritten, non-photocopied originals of standard size (8½" x 11").
2. No stapled sheets are permitted, and all notes will be subject to inspection by the proctors.
3. Statistical tables will be provided as needed.
4. You will need a hand calculator. The main office has hand calculators that you may check out up to one week from the exam. Checking out early is in general a good idea to familiarize yourself with the calculator. No other calculators, cell phone applications, or computers will be allowed.
5. Please check https://www.stat.wisc.edu/phd-masters/PhD_Exam_Syllabus for notes on the Departmental PhD Regulations. Note, in particular, that a student must pass the Exam within six semesters from the first fall semester of registration as a graduate student in the department. Each student may sit for the Exam a maximum of two times.

If you wish to take the PhD Qualifying Exam this Fall semester, please complete the attached registration form and return it to Andrea Palm by **11:00 am, Monday, May 30, 2016** (a signed and scanned form sent as a PDF is acceptable).

If you have any questions, please contact Prof. Sunduz Keles (the Qualifying Exam Committee Chair).

Attached: Registration form

Fall 2016 PhD Qualifying Exam Registration
Complete and return to Andrea Palm
by 11:00 am, Monday, May 30, 2016

1. I wish to take the Statistics PhD Qualifying Exam on August 30, 2016.

Name: _____ Signed _____

2. I wish to take the following option (choose only one): A_____ B _____

3. First or second attempt? Circle one: First Second

4. First enrollment as a graduate student in this Department (Sem/Yr): _____

5. Information on courses 609/610/849/850/709/710:

Course	609	610	849	850	709	710
Sem/Yr Course Taken						
Grade						

6. Other graduate statistics courses at UW-Madison:

Course #	Grade		Course #	Grade

7. Graduate statistics courses taken elsewhere:

Institution	Course Title	Grade

8. Names of three faculty members in the Department who are most familiar with you:

PhD Qualifying Exam Syllabus

Option A (709/710)

Probability and Distribution Theory.

Set operations, σ-fields, measures, probability measures, distribution functions, measurable functions, random variables and vectors, induced measures, abstract integration theory, *monotone and dominated convergence theorems, product measures and *Fubinis theorem, differentiation under integral sign, expectations, moments, inequalities, absolute continuity of measures, independence of classes of events, independence of random vectors, *Radon-Nikodym theorem, probability density functions, change of variables, generating functions, characteristic functions, *uniqueness theorem, quadratic forms and their distributions, *Cochrans theorm, conditional expectations, conditional distributions, properties of conditional expectations, Markov chains.

*proofs not required

Asymptotic Theory.

Modes of convergence (almost sure, in probability, in rth mean, in distribution, weak convergence) and their relationships, stochastic orders ($O_p(1)$ and $o_p(1)$), *Borel-Cantelli lemma, *Helly-Bray theorem, *Levy-Cramér theorem, *Skorohod theorem, Slutsky theorem, Scheffé's theorem, convergence of moments, convergence in distribution of a sequence of multivariate random vectors in terms of their linear combinations, continuous mapping theorem, delta method, weak laws of large numbers, strong law of large numbers, central limit theorems (Lindeberg, Liapunov, Lindeberg-Feller).

*proofs not required

Models and Inference Criteria.

Statistical models, sufficient statistics, factorization theorem, minimal sufficiency, exponential family, natural parameter space properties under sampling from exponential family, moments of exponential family, completeness, completeness of exponential family, Basu's theorem, inference problems, elements of decision theory, loss and risk functions, admissibility, Bayes and minimax criteria, prior and posterior distributions, large sample criteria, weak and strong consistency, asymptotic biases and variances, asymptotic inference.

Point Estimation.

Unbiased estimators, UMVUE, Rao-Blackwell and Lehmann-Scheffé theorems, Fisher information, Cramér-Rao lower bounds, least squares in general linear models, geometric interpretation of least squares, estimable functions, Gauss-Markov theorem, U and V-statistics, methods of moments, Bayes and generalized Bayes estimators, minimax estimators, shrinkage estimators, likelihood functions, maximum likelihood estimation (MLE), MLE in exponential family, consistency and asymptotic normality of MLE and asymptotic normality of solution to the score equation, asymptotic efficient estimators, asymptotic relative efficiency, empirical distributions, empirical likelihoods, density estimation, semi-parametric methods, consistency and asymptotic normality of sample quantiles, L- and M-estimators.

Hypothesis Testing and Confidence Sets.

Tests, randomized tests, power function and size of a test, Neyman-Pearson lemma, uniformly most powerful tests, monotone likelihood ratios, unbiased tests, uniformly most powerful unbiased for exponential family, similar test and Neyman structure, likelihood ratio test, and other large-sample equivalents to LR test (Walds test, Raos score test, Pearsons goodness of fit chi-square test for multinomial parameters), limiting distribution of tests, general linear hypothesis and likelihood ratio tests in linear models, ANOVA table and distribution theory, confidence sets, pivotal quantities, optimal confidence sets (uniformly most accurate confidence sets, confidence intervals of minimum length or expected length), large sample confidence sets

using MLE and likelihood ratio statistics, relation between confidence sets and tests of hypothesis, confidence sets and simultaneous confidence intervals with applications in one-way and balanced two-way layout and simple regression analysis.

Suggested References

Chung, K.L. (1974). *A Course in Probability Theory*, 2nd edition. Academic Press, New York.

Lehmann, E.L. (1986). *Testing Statistical Hypotheses*, 2nd edition. Springer-Verlag, New York.

Searle, S.R. (1971). *Linear Models*. Wiley, New York.

Shao, J. (2003). *Mathematical Statistics*, 2nd edition. Springer, New York.

Option B (609/610/849/850)

Probability Theory.

Probability and conditional probability, correlation and independence, random variables, distributions, transformations, expectations, moment generating functions, useful distributions (binomial, Poisson, negative binomial, normal, gamma, chi-square, t- and F-distributions), exponential and location-scale families, multivariate normal and linear and quadratic forms, convergence (almost surely, in probability, in distribution), law of large numbers, central limit theorem, convergence of transformations, Slutsky theorem and delta-method.

Statistical Inference.

Sample, population, statistics, sampling distribution, sufficiency, minimal sufficiency, completeness, maximum likelihood, moment method, estimation equation, least squares, weighted least squares, Bayes estimators, unbiasedness, UMVUE, information inequality, likelihood ratio tests, evaluation of tests and Neyman-Pearson Lemma, uniformly most power tests, unbiased tests, the duality between tests and confidence sets, pivotal quantities, consistency, asymptotic normality and efficiency, robustness, asymptotic tests based on likelihoods and chi-square tests.

Linear and Generalized Linear Models.

Linear regression, least squares fit, Gauss-Markov theorem, distributions of quadratic forms, standard model assumptions, computational issues, testing simple and compound hypotheses, prediction, diagnostic tools and model selection (residuals, leverage and influence, Cp, R-square and adjusted R-square, stepwise methods, all possible regressions, leaps and bounds, AIC and BIC), transformations, Box-Cox transformations, multicollinearity, ridge regression, generalized linear models (estimation and testing theory, prediction and model selection, residuals and diagnostics).

Experimental Design and Applications.

Model formulation, ANOVA table, hypothesis testing, diagnostic tools, transformations, multiple comparisons, contrasts, completely randomized designs, block designs, designs with multiple blocking factors, factorial designs, designs with multiple random effects, subsampling, split plot and strip plot designs, general linear models for designed experiments, parameterization of factors, estimability, cell means model, unbalanced designs and missing data, random and mixed effects models, model representations in matrix form, model fitting, testing, and diagnostics, ML and REML.

Suggested References

Grimmett, Geoffrey R. and Stirzaker, David R. (2001), *Probability and Random Processes (Third edition)*, Oxford University Press.

Bickel, P.J. and Doksum, K.A. (2001), *Mathematical Statistics (Vol. I), 2nd edition*, Prentice Hall.

Casella, G. and Berger, R.L. (2002), *Statistical Inference, 2nd edition*, Brooks/Cole Cengage Learning.

McCullagh, P. and Nelder, J.A. (1989). *Generalized Linear Models, 2nd ed.*

Milliken, G. A. and Johnson, D. E. (2009). *Analysis of Messy Data. Volume I: Designed Experiments, 2nd ed.*

Seber, G. A. F. and Lee, A. J. (2003). *Linear Regression Analysis, 2nd ed.*

October 2012

BREADTH REQUIREMENTS & PROCEDURES for PhD STATISTICS STUDENTS

There are three options that fulfill the breadth requirement. For all options, student must complete PhD Breadth Requirement form and have it signed.

Option A (External): Fulfill the minor requirement as specified by another department or program other than Statistics. Students should contact the individual department or program for details.

Option B (Distributed minor):

- At least 9 credits in one or more departments other than Statistics.
- At least 3 credits must be from courses numbered 600 or higher.
- Some courses numbered lower than 600 may not be included*.
- Any course covering the same material as existing courses in Statistics cannot be included* except that at most one course cross-listed with Statistics may be included if it is not staffed by the Statistics department. (* The Department maintains a list of such courses. For example, the following courses are not included: all courses 300 or below, CS 302, CS 367, Math 521, Math 522, Econ 709, Econ 710.)
- Courses must be completed with grades BC or higher with an average of B or higher.

Option C (Breadth): Fulfill at least two of the following three:

- *Participatory seminar experience:* Take two one-credit seminar courses outside of the Statistics and Biostatistics and Medical Informatics (BMI) departments. These must involve some level of active participation, such as an oral presentation or written report.
- *Collaborative research experience:* This provides students with direct experience in interdisciplinary collaborative research activity under the guidance of a faculty trainer. The student must report the results of this activity in an advertised seminar. Students may fulfill this requirement by rotating through directed study/research credits with Statistics or Biostatistics degree option faculty trainers, or with faculty from other departments.
- *Breadth course:* Take a 2-3 credit graduate course outside of the Departments of Statistics or BMI. This must be at or above the 600 level, or be from the approved list of outside courses for the Biostatistics Degree Option.

For option B, the student must complete a PhD Minor Agreement Form signed by the student's advisor and the Department Minor Advisor before starting the second minor course.

For option C, the student must present a tentative proposal signed by student's advisor and the Department Breadth Advisor before starting the second part of this option. The student must write a letter to the Chair of the Curriculum and Degree Requirements Committee (CDRC) detailing how the requirements are fulfilled and submit with PhD Breadth Requirement form.

Students who do not yet have a major professor and who want some preliminary advice on the kinds of programs likely to be approved may speak with a Graduate Advisor for New Students.

PhD BREADTH REQUIREMENT FORM
Graduate Program in Statistics Department

Name: ID#:

E-Mail: Tel #:

Major: STATISTICS Area:

Today's Date: Date Breadth Requirement Completed:

□ **Option A** (single department outside Statistics) Dept:
External (*requires approval of minor department*)

□ **Option B** (minimum 9 credits in two or more departments) Dept:
Distributed *(requires approval of major department)*

□ **Option C**
Breadth

List courses out Statistics as they appear on your Madison campus transcript:

Dept Name	Course #	Course Title	Cr	Grade	Sem/Yr

_____
Option A: Signature & Date of Minor Advisor

_____
Option B and C Signature & Date of Major Advisor

_____ _____
Option B and C Signature & Date of Breadth Req. Advisor Signature & Date of Major Dept. Chair

Note: This form is to be retained by the Graduate Coordinator in the Department of Statistics. Return signed form to Rm 1220D MSC.

Dissertator Status

(from https://grad.wisc.edu/acadpolicy/)

Dissertator is a unique fee status for students who have completed all requirements for a doctoral degree except for the dissertation. To be eligible for dissertator fee status, a student must:

- Pass the preliminary examination(s);
- Satisfy the doctoral minimum credit requirement;
- Complete all minor requirements, if the major program requires a minor;
- Complete all program requirements except the dissertation;
- Clear all Incomplete grades or Progress grades in non-research courses (progress grades in 990 research may remain);
- Earn at least a 3.0 cumulative GPA;
- Return the signed preliminary exam warrant to the Graduate School.

Dissertator status is effective at the start of the semester following completion of all dissertator requirements for the doctoral degree except for the dissertation. In order to initiate the change to dissertator status, the prelim warrant must be sent to the Graduate School. Students can check on dissertator status by contacting the program's graduate student coordinator.

All dissertator requirements must be met before the first day of classes to be a dissertator for any given semester. If all dissertator requirements are completed before the first day of classes but the signed prelim warrant does not reach the Graduate School by that deadline, the student can still become a dissertator that semester. Submit the warrant to the Graduate School as soon as possible and enroll for at least 3 credits (usually 990 research) for that semester.

Removal of Dissertator Status: A dissertator who enrolls for more than 3 credits will be removed from dissertator status for the fall or spring term in which the enrollment exceeds the 3-credit maximum. During the summer, however, an enrolled dissertator may ask their advisor to request an overload of 1-2 additional credits in a short session and still retain dissertator fee status, if the course is related to dissertation research or professional training that is not offered in regular semesters.

The removal of dissertator status may have the following consequences:

- Graduate assistant (TA/PA/RA) salary rates may have to be adjusted to the non-dissertator rate, or percent limitations. See Maximum Levels of Appointments.
- Fees are assessed at the non-dissertator rate.
- Full-time status may change to part-time, possibly affecting loan deferral, visa status, etc.

If a dissertator wants to pursue a graduate degree or certificate in another area, the dissertator fee status will be discontinued and regular graduate fees will be assessed, with possible consequences listed above.

Graduate School Degree and Dissertator Eligibility Deadlines

See https://grad.wisc.edu/currentstudents/degreedeadlines/ for updated information.

Spring 2016 (1164)

January 15	Dissertator Eligibility for Spring 2016
April 22	Request for all Masters and Ph.D. Degree Warrants
May 13	Degree Deadline
May 16–June 10	Summer Degree Window Period[1]

For all graduating students: If you want your name to be printed in the commencement program or if you plan to attend the commencement ceremony, you must sign up at My UW "apply to graduate" to attend the commencement ceremony. If you are graduating with a Master's degree and the "apply to graduate" application is not showing a Master's option, your program should submit your warrant to the Graduate School before Friday, March 25th.

Summer 2016 (1166)

June 10	Dissertator Eligibility for Summer 2016
August 5	Request for all Masters and Ph.D. Degree Warrants
August 26	Degree Deadline
August 29–September 2	Fall Degree Window Period[1]

Fall 2016 (1172)

September 2	Dissertator Eligibility for Fall 2016

[1] The "Window Period" is the time between the end of one degree period and the beginning of the next. **You must have been registered for the previous semester (Fall, Spring, or Summer)**. If all degree requirements are met by the end of the window period, your degree will be granted for the **following semester**. However, you will not have to register or pay fees for the next semester.

Graduate School
UNIVERSITY OF WISCONSIN–MADISON

Guidelines for Electronic Deposit of Doctoral Dissertations

Formatting requirements

We encourage you to read these requirements before you start writing.

Producing Your Dissertation

Format Requirements
- Appendices
- Bibliography
- Equations, Superscripts, and Subscripts
- Footnotes and Endnotes
- Graphics
- Language Use
- Margins
- Page Headers
- Page Numbering
- Production of Document
- Title Page

Additional Guidelines
- UMI Abstract
- Abstract Within Dissertation
- Copyright Page (optional)
- Corrections
- Reprints and Use of Copyrighted Material

When you are ready to defend and deposit

Step 1 - Prechecks
Step 2 - Requesting Your Final Warrant
Step 3 - Electronic Deposit of your Dissertation & Payment of Fees
Step 4 - Graduate School Final Reviews

FAQ: Electronic Deposit (external webpage)

Other Information About Your Graduation

For more information

UW-Madison Graduate School
Graduate Degree Coordinator
217 Bascom Hall, 500 Lincoln Drive
(608) 262-3011
gsaserv@grad.wisc.edu

Formatting requirements

PRODUCING YOUR DISSERTATION

These guidelines will help you prepare your dissertation to ensure that it constitutes a permanent document of quality appropriate for a major graduate institution.

Your dissertation is required to conform to these standards. It will be fully corrected, complete, and submitted electronically as a **single** PDF file. The Graduate School sends the final packet to your program after you file the Ph.D. Final Oral Committee Approval Form. This form must be on file with the Graduate School a minimum of **three weeks** before your final oral examination.

Electronic and paper copies of approved dissertations are sent to the UW-Madison Memorial Library. They can be found electronically on MadCat and the ProQuest database. ProQuest/UMI Dissertation Publishing archives all accepted dissertations.

You are responsible for knowing and meeting deadlines for degree completion.

FORMAT REQUIREMENTS

Appendices

You may put unusual or supplementary materials (such as questionnaires or photos) into appendices. Number the appendices consecutively with the text of the dissertation. The formatting of the appendices must meet the standards for the rest of the dissertation.

Bibliography

The bibliography should meet your major program's style requirements, which often conform to the leading journals or book series of the field. They may be single-spaced with an additional space between entries.

Equations, Superscripts, and Subscripts

Equations, superscripts, and subscripts are acceptable in your dissertation provided they are legible when microfilmed. Generally, superscripts and subscripts may be one size smaller than the text. To identify each equation clearly, please isolate it with double spacing.

Footnotes and Endnotes

Footnotes and endnotes may be single-spaced with an extra space between notes. Please follow the preference of your major program when deciding where footnotes or endnotes should be placed in your text.

Language Use

You may include quotations in languages other than English in your dissertation. However, the dissertation itself must be in English unless your program certifies that one or both of the following conditions have been met: the foreign language is that of the readers to whom the work is addressed; or translation into English would make the study obscure and imprecise. Dissertations submitted by students from a language program are acceptable in the language of that program.

Graphics

Figures and graphs must meet the same standards as the rest of the dissertation. Headings, keys, and all other identifying information must be of the same quality and format as the text. If graphics, tables, or figures are in landscape mode, **orient the top of the printed page at the dissertation binding edge** (left side of the paper) with the page number in the upper right-hand corner in the portrait page setup. Images may be submitted in black and white or color.

Margins
MINIMUM REQUIRED

- Use a minimum of 1" margin on all four sides.
- Page numbers must be in the **upper right-hand corner at least a half inch from the top and one inch from the side of the page.**
- **Page Headers**
  Do **not** use page headers (except for page numbers) or decorative borders.

Page Numbering
The title page and copyright page (if you are retaining and registering copyright) are not counted in the numbering of pages. The other pages are.

- Number the preliminary pages (for example, dedication page, acknowledgments page, table of contents, and abstract) that precede the main text with **lower case Roman numerals beginning with i**. Put page numbers in the right-hand corner one inch from both top and side of the page. Page numbers half an inch from the top of the page are also acceptable.
- Number the main text consecutively beginning with **Arabic numeral 1** in the upper right-hand corner one inch from both top and side of the page. **Check your dissertation to ensure that all pages are present and in numerical order**.
- If you are using Microsoft Word, directions about how to exclude title page, etc. in pagination can be found on YouTube: www.youtube.com/watch?v=NGzz2ZmLrFw.
- Number appendices consecutively with the text, continuing the Arabic numeral sequence.
- Landscaped pages must have a portrait page number. There are a number of ways to do this. For methods using Microsoft Word, such as text boxes, see instructions at the following link: www.support.microsoft.com/kb/162235. Directions can also be found on YouTube: www.youtube.com/watch?v=SYZi8T_bVpU.

Production of Document

- Use 10 to 12 point type.
- Double-space the main text of the dissertation.
- Lengthy quotations, footnotes, and bibliographies may be single-spaced with a double space between entries or paragraphs.
- Maps, charts, etc. are acceptable.

Title Page
The title page is the very first page of your dissertation. Do not number the title page. At the bottom of the title page, you must indicate the date you passed your final defense (final oral examination) and list your committee members' names, titles, and programs. Follow this format exactly https://grad.wisc.edu/currentstudents/wp-content/uploads/sites/9/2013/12/new_phd_title_page_for_electronic_deposit.pdf

If you are depositing your thesis in the window period then your title page should reflect the year in which your degree will be granted. For example, if you are depositing on December 27th, 2013 this falls within the spring degree window period. The title page should read 2014 as the degree year since your degree will be granted in Spring 2014.

ADDITIONAL GUIDELINES

UMI Abstract
When you deposit your dissertation electronically, ProQuest/UMI will require you to provide the text of your UMI abstract. Please have this text ready when you begin the online submission process. The abstract must be in English, **must not exceed 350 words**, and must be approved by your advisor.

Abstract Within Dissertation
Your program may require an abstract to be part of the dissertation. Please follow your program's style requirements, and number all of these pages as part of the preliminary material (use lower case Roman numerals). This abstract must be included in the table of contents.

Copyright Page (optional)
You may include a copyright page; if you do, insert it directly after the title page. Do not number the copyright page. View a sample at https://grad.wisc.edu/currentstudents/wp-content/uploads/sites/9/2014/04/Copyright.pdf. Center the text in the bottom third of the page within the dissertation margins.

Registration of copyright (optional)
You are automatically protected by copyright law, and you do not have to pay in order to retain copyright. There is an additional fee of **$55.00** for registering your copyright, which is a public record, and is payable to ProQuest/UMI at the time of electronic submission, along with the dissertation microfilming and binding fee of $25.00 (plus tax). If you register your copyright, ProQuest/UMI will send a digital copy of your dissertation to the Library of Congress. You are not required to register your copyright through ProQuest/UMI; you may choose to do it on your own. More information is available online at www.copyright.gov and www.library.wisc.edu/scp/copyright.

Corrections
After you submit the PDF of your dissertation electronically, you will not be permitted to make any additional corrections. Therefore, make sure the PDF is completely accurate before you submit.

Reprints and Use of Copyrighted Material
You are responsible for appropriate use of copyrighted materials in your thesis. Some material may be available for use without restriction while other material may require written permission from the rights holder. Other material may be appropriately used without written permission under the "fair use" provisions of the copyright law. General guidance regarding use of copyrighted materials is available from ProQuest/ UMI at the following link http://www.umi.com/en-US/products/dissertations/copyright/ or from the UW-Madison Libraries website at http://www.library.wisc.edu/copyright/#copyright-basics

a. Fair Use: General information regarding how to determine if your use of copyrighted materials constitutes fair use can be found at http://www.umi.com/en-US/products/dissertations/copyright/AppxB.html. Reviewing and completing a fair use check list may also assist you. See the fair use checklist at http://www.copyright.columbia.edu/fair-use-checklist. Additionally, your own professional or disciplinary societies may have fair use statements to help you negotiate disciplinary specialties.
b. Written Permission: If written permission is required, you are responsible for obtaining such permission and maintaining records of the written permission to use the copyrighted material in your thesis. You can usually get permission by sending a letter of request to the copyright holder. Normally, your letter will be returned with an approval stamp or signature. Some copyright holders require a specific form of acknowledgment. A sample permission request letter can be found at http://www.umi.com/en-US/products/dissertations/copyright/AppxA.html. Note that obtaining written permission can be a lengthy process. Plan ahead and budget ample time to obtain all required permissions.

Embargo/Delayed Release

All dissertations are normally open and made available to the public shortly after you receive approval from the Graduate School. However, if a publication or a patent is pending, an embargo may be requested during the electronic submission process. On the ProQuest/UMI ETD Administrator site, you will have the option to select "No" to the Publishing Options question: "I want my work to be available in ProQuest as soon as it is published." Next you will be prompted to select a time period of 6 months, 1 year or 2 years for embargo. These options do not require special permission but you should have discussed this with your advisor in advance. Any request for more than a 2 year embargo or an extension of the original embargo request will be reviewed by the Graduate School Divisional Associate Dean. Such a request requires a letter to be signed by the student and the advisor in advance.

Please keep in mind that if you select an embargo, there will be no record of your dissertation in the public domain and no opportunity for citations. In addition, if you order a bound copy of your dissertation through ProQuest, you will not receive it until your dissertation is released at the end of the embargo period.

Producing Copies of Your Dissertation (optional)

There are many options available in terms of producing copies of your dissertation. You do NOT have to order copies through the UMI/ProQuest ETD Administrator site but that option is available. Some other ways to produce copies of your dissertation include:

- UMI/ProQuest ETD Administrator site: order copies
- Printing shop (FedEx Office, Bob's Copy Shop, etc.)
- Local book bindery (Grimm Book Bindery, Mc Ginn Bindery, etc.)

When you are ready to defend and deposit

You are responsible for completing the following steps by the appropriate degree deadlines.

Step 1 PRECHECKS

To answer specific format questions (for example, use of tables, graphs, and charts) we have set aside 9:00am-9:30am Monday-Thursday and 12:30pm-1:00pm Fridays for Prechecks. You may bring in eight to ten pages to be reviewed. You do not need an appointment - just come to Room 217 Bascom Hall with samples in hand.

Step 2 REQUESTING YOUR FINAL WARRANT

File the **Ph.D. Final Oral Committee Approval Form** in the Graduate School a minimum of three weeks before your final oral examination. This form is available in your program office or at the Graduate School 217 Bascom Hall. You must be enrolled during the semester when you defend and deposit; if you want to defend and/or submit your dissertation to the Graduate School in the summer term, you must register for 3 credits in research for the 8-week session.

After you submit the Ph.D. Final Oral Committee Approval Form, we send the final packet to your program. This packet will include the final oral defense warrant. Committee members on the warrant should match those on the Ph.D. Final Oral Committee Approval Form. Bring the warrant to your oral defense to obtain committee members' signatures.

Step 3 ELECTRONIC SUBMISSION OF YOUR DISSERTATION & PAYMENT OF FEES

After you pass your oral defense, you can submit your dissertation electronically. Before you begin the submission steps, please be sure you have the following:

a. Full text of your dissertation in PDF format. This must be one file. Fonts must be embedded. Security settings must be set to "no security." Encrypted files cannot be processed for publishing. The maximum file size that can be uploaded is 1000 MB. The PDF file name cannot contain periods (except for the .pdf extension). Instructions about PDF conversion are available at the ProQuest/UMI ETD Administrator site under the "Resources and Guidelines" tab, as well as at this website: www.etdadmin.com/cgi-bin/main/createpdf. A PDF conversion tool is available at the ETD Administrator website, for use if your office software does not include one.
b. UMI abstract text. This abstract is limited to 350 words and must be in English. You will be asked to copy and paste this text during the electronic submission steps.
c. Optional supplementary files. These images, data, etc. are an integral part of the dissertation, but not part of the full text.
d. Advisor and other committee members' names.
e. Subject category. Please choose one to three subject categories from the Subject Category list that best describe your dissertation subject area.

Go to www.etdadmin.com and choose "Submit my dissertation/thesis." Select University of Wisconsin-Madison from the list provided. Create an account or login using an existing account.

ProQuest/UMI ETD Administrator will walk you through a simple process of accepting the publishing agreement and uploading the files and information about your submission. If you need to finish your submission later, you can save your information and come back to finish. No information will be lost.

At the submission step called Dissertation/Thesis Details, you will be asked to enter the following important information about your dissertation. Accuracy is essential.

Title: Enter the full title of your dissertation, as it appears on the title page. Only some special characters can be used in this field. If needed, visit this FAQ to learn how. The title field does not accept subscript, superscript, or Greek letters; instead, you will need to spell these out. Select the year in which you completed your manuscript.

Degree/Department Information: Select the year in which your degree will be conferred. If you are depositing during the window period and are uncertain, please contact the Graduate School. Select the degree you will receive and your program.

Advisor/Supervisor/Committee Chair: Enter your primary advisor's name exactly as it appears on your warrant. Do not repeat your advisor in the list of committee members.

Committee Members: Enter your committee members' names exactly as they appear on your warrant.

Description of Dissertation/Thesis: Select categories and keywords that identify your work.

Abstract: Enter the text of your UMI abstract, exactly as it was approved by your faculty advisor. There is a 350 word maximum. If your abstract contains symbols or special characters, please visit this webpage for tips.

ETD Administrator will collect the **mandatory $25.00 (plus tax) payment** from you for binding and microfilming. You may choose to order additional copies and register copyright – both optional. The only fee you are required to pay is $25.00 for binding and microfilming, plus tax. You must pay by credit card, Visa, Master Card, or American Express.

Be certain to complete the final **submit** step at the ETD Administrator website. When you submit your dissertation, it will be reviewed by a Graduate School staff member to ensure that you have followed all formatting requirements.

After you complete the final submit step, you will immediately receive an email confirming the submission.

Step 4

GRADUATE SCHOOL FINAL REVIEWS

Contact the Graduate School at 608-262-2433 to arrange an appointment for the final review. Please call to schedule an appointment at least one day in advance. You must have defended in order to make the final review appointment. If you are defending near the degree deadline call immediately after you defend; appointment times fill rapidly during the two to three weeks before any deadline. You must submit your dissertation electronically before you come for your final review. This submission is final. You are not allowed to make changes after submitting.

Reviews normally take about 15 minutes. Our regular dissertation review appointment times are 10:00 a.m. to 11:00 a.m. and 1:00 p.m. to 2:00 p.m. Monday through Friday. *Please note that there may be occasional dates when our degree coordinators are completely booked or otherwise unavailable, so please call ahead to make an appointment and ensure availability.

If you are requesting **certification of your degree** from the **Registrar's Office**, the grade(s) for the semester in which you are depositing your dissertation (and all other outstanding grades) must be reported to the Graduate School before you can receive a completion letter. A completed grade change form can be brought to the final review if a degree completion letter will be needed.

The following items must be brought to 217 Bascom Hall for the final review:

- **Warrant.** Your Committee must be identical to the one approved on the Ph.D. Final Oral Committee Approval Form.
- **Survey of Earned Doctorates (SED) certificate of completion.** Please follow the steps below to submit the survey online. To complete the SED online, first go to https://survey.norc.org/doctorate and provide basic information including your email address. You will then receive an e-mail with a unique PIN and password. Access the SED survey site using the URL, PIN, and password sent to you in this email, and complete the survey. You must advance past the certificate of completion screen, in order to submit the survey. Please print and bring the certificate of completion to your final review.
- **Graduate School's Doctoral Exit Survey (DES) certificate of completion**. The DES obtains information on your academic experience (e.g., program quality, support, advising) in your doctoral program and information about your postdoctoral plans.
  To complete the DES, go to https://uwmadison.qualtrics.com/SE/?SID=SV_cCPVoJrkzHGvTh3 . Enter your name as it appears in university records and student ID number (10 digits). At the end of the survey there is a survey completion screen. Please print and bring the certificate of completion to your final review. If you have problems accessing the survey, please contact gspd@grad.wisc.edu and include your name and student ID number.

After your final review appointment, a Graduate School staff member will submit your dissertation to ProQuest/UMI Dissertation Publishing for microfilming and binding. The UW-Madison Library will receive a bound copy and an electronic version of your dissertation. You will receive an email notification when the Graduate School has reviewed and approved your dissertation for publication.

CONGRATULATIONS! You are done.

Other Information about Your Graduation

Transcripts

The Registrar posts degrees on official transcripts approximately four to six weeks after the end of the semester. Order transcripts at http://ordertranscript.wisc.edu/. Call 262-3811 for more information.

Diploma

The Office of the Registrar will send your diploma to your DIPLOMA address approximately 12 weeks after degree conferral. Update your Diploma address via My-UW prior to leaving campus.

International students: you MUST enter your DIPLOMA address via My-UW to receive your diploma.

Commencement - December and May

If you want your name to be printed in the commencement program, you must submit an Apply to Graduate application through your MyUW Student Center. This is in addition to contacting your program to request your degree warrant from the Graduate School. You may attend the ceremony even if your name is not included in the commencement program. August does not have a commencement ceremony. If you plan to graduate in August, you may attend either the May or the December ceremony submitting the Apply to Graduate application through MyUW Student Center. Cap and gown rentals are at University Bookstore. Guests can attend without tickets.
http://www.commencement.wisc.edu/

Graduate School
UNIVERSITY OF WISCONSIN–MADISON

Section 6

Biostatistics Information

BIOSTATISTICS OPTION: MS/PhD Programs

Overview

The Biostatistics Degree Option (BDO) is a specialization within the Statistics MS/PhD programs that is implemented jointly by the Departments of Statistics and of Biostatistics and Medical Informatics. Students pursue course work in the theory, methodology, and application of statistics. They focus on developments of statistics in biomedical sciences by taking additional biostatistics courses and (for the PhD) an approved biological sciences course, and they fulfill a total credit requirement by taking elective credits from a menu of relevant courses. MS students prove competency through an applied examination. PhD students pursue a faculty-mentored interdisciplinary collaborative research project and thereby become directly engaged in an active biomedical problem. Finally, PhD students pursue and defend original scholarly research in biostatistics.

PhD Requirements

1. Courses:

Seven statistics courses are compulsory: a two-semester course sequence in advanced statistical inference (709/710), a course in advanced probability theory (733), a statistical consulting course (998), a course sequence in linear models (849/850), and a course in clinical trials (641). These cover core topics in probability, mathematical statistics, and statistical methodology, including distribution theory, asymptotic analysis, theory of estimation and testing, general regression techniques, and also specialized statistical methods for clinical studies.

In total *four* additional elective courses (12 credits) must be taken from statistics courses numbered 642, or 700 or higher, excluding 609, 610, 699, 709, 710, 849, 850, 990, or 998; if 992 is used to fulfill the elective requirement, only three credits on any one topic are allowed. The chosen electives must contain at least *two* of *three* specialized biostatistics courses: Statistical Methods for Epidemiology (642), Statistical Methods for Survival Analysis (741), and Statistical Methods in Molecular Biology (877).

A *twelfth* course (3 credits) is required, from an approved list of biological sciences courses[1].

Students may be required to take a course in the responsible conduct of research[2].

A grade of B or better must be received in any course used to fulfill the course requirements.

2. Collaborative research experience: This novel element of the Biostatistics Degree Option provides students with direct experience in interdisciplinary collaborative

[1] Approved courses include Genetics 466 (General Genetics), Zoology 570 (Cell Biology), Biocore 303 (Cellular/Molecular Biology), Population Health Sciences 795 (Principles of Population Health Sciences), Medical Sciences 622-721 (Neoplastic Diseases). Approval of other biological sciences courses is at the discretion of the Biostatistics Option Committee.

[2] Students supported by an NIH training grant are so required.

research activity under the guidance of a faculty trainer. The student must report the results of this activity within an advertised seminar. Students may fulfill this requirement by rotating through directed study/research credits with faculty trainers. Rotations may entail clinical studies, population-based observational studies, laboratory experiments or other scenarios involving the development of biostatistics.

3. Qualifying Exam: Each student must pass a written PhD qualifying exam based on theory covered in the core statistics curriculum. The format of this exam was revamped recently to cover not only advanced inference theory but also aspects of linear model analysis[3].

4. Mentoring Committee Meeting: Within one year of passing the qualifying exam, the student must convene a meeting of at least three BDO faculty advisors. The student is expected to prepare a short oral report of his/her research activities and of anticipated directions for future research.

5. Preliminary Exam: After selection of a thesis advisor, the PhD student prepares a short paper and presents thesis plans to a faculty committee.

6. Seminars: Students are expected to attend seminars from the Statistics Department (Wednesdays), the BMI Department (Fridays), and selectively others relevant to their research.

7. Final exam: Each student will engage in original scholarly research and prepare a thesis presenting novel developments in biostatistics. A final oral PhD examination will be conducted by a thesis committee.

8. Breadth: For BDO students, the *breadth requirement*[4] is satisfied by: (1) the biological sciences course and (2) the collaborative research experience.

9. Other: Rules governing courses and timing, operation, and requirements of the qualifying, preliminary, and final exams are as in the parent program[5], as are criteria for satisfactory progress[6]. Issues specific to the BDO are governed by the Biostatistics Option Committee (BOC) and BDO trainers within the two sponsoring departments.

MS Requirements: For BDO students, the requirements are as in the parent program[7], except that the six elective credits (2 courses) must include 641 and one of 642, 741, 877.

[Approved May 1, 2014]

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[3] See www.stat.wisc.edu/phd-masters/PhD_Exam_Syllabus
[4] Formerly the minor requirement
[5] See www.stat.wisc.edu/phd_masters/PhD_Degree_Regulations
[6] See www.stat.wisc.edu/phd_masters/Criteria_Satisfactory_Progress
[7] See www.stat.wisc.edu/MS_Degree_Regulations

Declaring the Biostatistics Option

New students interested in declaring a named option in Biostatistics should simply elect the named option during the application process.

Current graduate students interested in declaring a named option in Biostatistics need to use the Graduate School's "Add/Change/Discontinue Program Form," available from the graduate coordinator or from https://grad.wisc.edu/acadpolicy/wp-content/uploads/sites/15/2014/07/change-program-form-2014.pdf . Fill in the blanks, select Statistics MS Biostats or Statistics PhD Biostats in the drop down list and print the form. An example form populated with information common to most students is provided on the next page. Note that the example form is for PhD students. MS students would simply substitute MS for PhD. **When completed, the form should be submitted to the Statistics graduate coordinator,** who will make a note of this change and then forward the form to the Biostatistics Student Services Coordinator, Whitney Sweeney, for further processing.

Whitney's contact info, if there are questions, is listed below:

Whitney Sweeney
4735 Medical Sciences Center
1300 University Ave
Madison, WI 53706
Ph: 608-262-9184
Email: sweeney@biostat.wisc.edu

Add/Change/Discontinue Program Form

DIRECTIONS: The Change/Add/Discontinue a program is a paper process only. Do not fill out an online admission application if you are a currently enrolled graduate student. It will not be processed, and letters of recommendation will be lost.

1) Check with your intended program concerning their admission requirements. *All required materials must be submitted directly by the applicant to the program.* The Graduate School will not make copies of transcripts. You can request a current UW-Madison transcript through: http://ordertranscript.wisc.edu.
2) Complete and print this form. Send it, along with all required supporting documents, including letters of recommendation, if necessary, to your intended program. They will review your request to change or add a program and forward their admission decision to the Graduate School.

Student Name	Susie Smith	Campus ID Number	907xxxxxxx
Email	susiesmith@stat.wisc.edu	Major Program	Statistics

Current program(s): Statistics PHD

☐ Change program to:

☒ Add program: Statistics PHD Biostats

☐ Discontinue program*:

*Complete only if you currently have a joint or double program and wish to discontinue one. The Graduate School will notify both departments.

This change is effective beginning:

◉ Fall ○ Spring ○ Summer Year 2014

Date of Master's examination already taken or planned to take in current program (month and year):

Have you taken the preliminary PhD exam in your current program? ○ Yes ◉ No If yes, when?

Reasons for change of program/addition of program: (Attach separate sheet if needed.)

I am currently a student in the Statistics PhD program and have an interest in Biostatistics. I would like my Biostatistics training to be reflected on my graduate certificate and am, therefore, electing to officially declare this specialized interest by selecting the named option in Biostatistics.

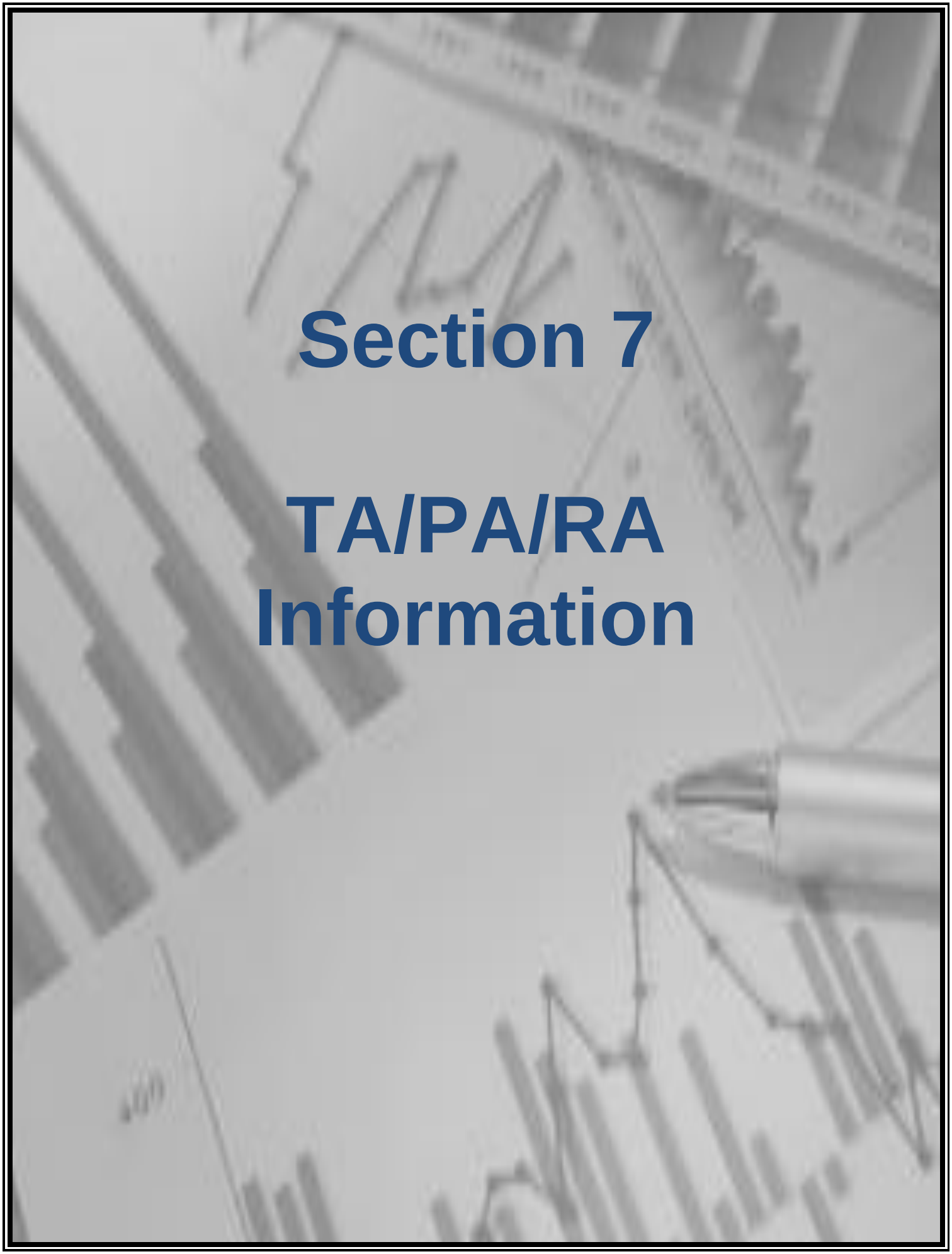
Student's Signature _____ Date _____

PROGRAM USE ONLY - Please indicate departmental recommendation below and return original to Graduate School. **Program is responsible for notifying student of refusal or program withdrawal.**

☐ Admit
☐ Admit on Probation
☐ Admit with Deficiencies
☐ Admit on Prob. w/ Def.
☐ Refuse Admission

If recommended on probation and/or with deficiencies, state conditions for first semester:

Chair/Director of Admissions Signature _____ Date _____



Section 7

TA/PA/RA Information

Financial Support

Departmental support for qualified graduate students is usually granted in the form of Teaching Assistantships (TA), Research Assistantships (RA), Project Assistantships (PA), Student Lecturers (LSA), and Fellowships and Traineeships (Biostatistics). Details of each of these types of support are given in the following sections.

Sources of financial support in the Statistics Department are often not able to cover all students. The department may not be able to support students who come to Madison without a guarantee of funding, and those with guarantees may be funded at a minimal level. While there are some sources of funding at the University outside the Statistics Department, the department does not actively seek to identify these. Thus, students without a guarantee of support, or students who want support in excess of their guarantee should be aware that they must look for such funding on their own.

Eligibility Requirements for Departmental Support

In making appointments for Teaching Assistant (TA) openings, the Department of Statistics seeks to make the best possible match between the background, abilities and academic program of the graduate student and the particular position being filled. Such a match may require that certain factors are weighed more heavily for one opening or type of opening for another. In general, consideration will be given to the following factors (not listed in order of importance):

- Graduate and Undergraduate GPAs
- GRE scores and other relevant test scores
- Academic progress in the department
- Field of interest or specialty
- Letters of recommendation
- Relevant experience
- Faculty and staff comments and evaluations
- Student evaluations
- Long-term support guarantees
- Academic needs and mission of the department
- University policies
- Other factors, such as particular research expertise, relevant to position being filled

Fringe Benefits for Graduate Assistants (TAs, PAs, & RAs)

Graduate assistants with appointments of at least 33.4% qualify for remission of tuition, except for segregated fees, which are charged to all students. The current salary rates for 2016-17 at the 100% appointment level, on an academic year (9-month) basis unless otherwise indicated, are as follows:

Teaching Assistant - Standard	= $31,297
Teaching Assistant - Senior (dissertator)	= $36,133
Project Assistant (9 month)	= $31,297
Project Assistant (12 month)	= $38,252
Research Assistant (9 month)	= $36,133
Research Assistant (12 month)	= $44,162

Lecturer (Student Assistant) = $37,245

Fellowship (12 month) = $22,000 - $23,668

Eligibility for health care coverage (with dental) is an extremely valuable benefit associated with financial assistantship. It provides single or family coverage that is more comprehensive than individuals can usually purchase insurance on their own. With this appointment, you would pay only a small portion ($44.50-$112.50 monthly), depending on your selection of plan. Academic-year appointees (TAs & PAs) are eligible to continue their coverage through the summer, provided they are planning to return in the fall.

Teaching Assistant (TA) Appointments

Most of the TA appointments are made at 33.4% or 50% of the full time standard rate, depending on teaching experience and guaranteed support or no support. All teaching assistants are paid at the standard rate and at the senior rate once you have become a dissertator. Appointments are usually made at the 50% level with a guarantee of two (for Masters) or five years (for PhD). TA positions are guaranteed during the regular academic year but not during the summer, when fewer classes are offered. A committee makes the actual TA assignments each semester.

Teaching assistants for the academic year are paid on the first of each month from October 1 to June 1 (nine pay periods) with deductions taken out for taxes and health coverage premiums.

The duties of a teaching assistant include preparing for and meeting with up to four discussion sections each week, grading homework and exams, holding one or more office hours per week, attending meetings called by the instructor, and usually attending lecture. Also, TAs teaching 301, 324 or 371 will be required to spend some time in Statistics Tutorial Lab each week. Full-time employment is based on a 40-hour work week; a one-third time TA is expected to put in thirteen (13) hours of work per week while a half-time TA works twenty (20) hours per week.

The weekly discussion section is not meant to be a supplementary lecture. Rather, it should be used to answer questions of students and to go over examples of problems. Sometimes it is a good idea to have the students work on a problem during class and then go over it. This way they can ask questions that come up when they actually try a problem. Because the lectures for many introductory courses are large, often the student's only opportunity to ask questions is during discussion and the only personal contact is the TA.

Manual for Teaching Assistants: This booklet is put out by the College of Letters and Science and contains some useful information including teaching tips and information about campus resources.

Research Assistant (RA) Appointments

Most RA appointments are at the 50% level and are usually granted for twelve months rather than nine-month academic year. RA appointments are granted primarily to students who have passed the PhD qualifier and are rarely granted to incoming students. RA positions allow students to assist in research in the Statistics Department in a project that will meet the requirements for the master's or doctoral thesis. The work performed is primarily to further the education and training of the student. RAs are required to carry a full load each semester (eight to twelve graduate-level credits including research or thesis credits for nondissertators, three credits for dissertators) and at least two graduate-level credits during the eight-week summer session (three graduate-level credits for dissertators).

Project Assistant (PA) Appointments

Most PA appointments are at the 50% level. There are two kinds of PA appointments: academic year and calendar year. However, most of the PA appointments in Biostatistics are made for the calendar year. In addition to PA appointments made through the Department of Biostatistics, several PA appointments are available through the College of Agricultural and Life Sciences (CALS). Unlike RA appointments, PA appointments are often available to incoming students without advanced degrees. PAs must be registered for at least two graduate-level credits during the fall and spring semester. There is no registration requirement for the summer session.

Lecturer (student assistants) LSA

Student Lecturers cover core courses for the department. Appointments are assigned at either a 33% or 40% level depending on course size. A training/mentoring program is provided to each new LSA. Candidates are selected by the Instructional team.

Outside Support

Several students are supported by outside sources such as fellowships from private industry and various governmental agencies (foreign and domestic). Such students are not eligible for the subsidized health coverage or tuition waiver.

Fellowships

Students receiving fellowships are also eligible for the benefits available to all graduate assistants. While Fellowship awards are for the first year of study only, students receiving them are usually able to secure funding for subsequent years.

Traineeships

The Biostatistics group currently administers a number of traineeships funded by the National Institute of Health (NIH). Only US citizens are eligible, and recipients must agree to take a job related to biostatistics when they receive their PhD. The stipend is equivalent to a 50% research assistantship, less tuition. Tuition and fees are paid by NIH.

Department of Statistics
1220 Medical Science Center
1300 University Avenue
Madison, WI 53706-1532
(608) 262-2598

MEMO

To: Statistics Department Faculty, Instructors, and Teaching Assistants
From: Gina Benninger & Jun Zhu

Subject: Workload Guidelines for TAs

This is an updated version of the Department TA workload guidelines. Please note that these are guidelines; within the limits discussed below, the instructor and TA can negotiate a different workload, with the final authority resting with the instructor. No negotiations will be made for actual discussion teaching or tutorial lab hours with the instructor.

All TA's should be monitoring the time they spend on their job. If the number of hours is beginning to exceed the allotted hours, the supervising instructor should be notified immediately.

Please note that the duties of the TA end the fourth business day after the final exam of the class. The TA is responsible for helping to grade the final exam and should finish these duties before leaving for the semester.

Gateway Statistics: Stat 301, Stat 224/324, Stat 371

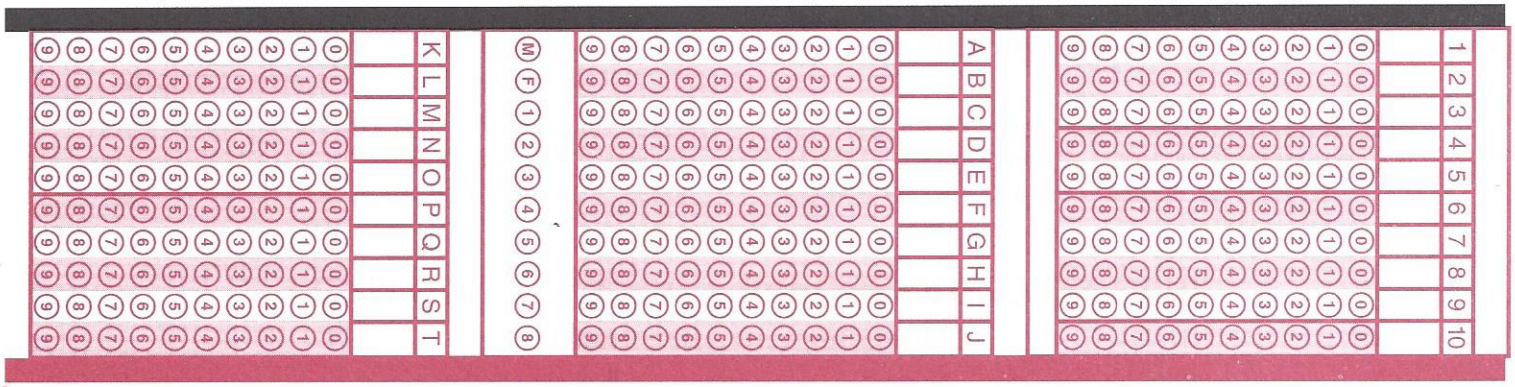
Overall Hours	50% Discussion TA	50% Support TA	33% Discussion TA	33% Support TA	17% Discussion TA	17% Support TA
Attend lecture	37.5	0	37.5	0	37.5	0
Discussion planning/review	22.5	0	22.5	0	22.5	0
Office hours	30	15	15	15	15	15
Discussion	45	45	30	30	15	15
Tutorial lab	60	30	30	0	0	0
Weekly meeting	15	15	15	15	15	15
Grading	17	200	17	140	0	70
Student contact	60	0	30	0	15	0
Training	20	20	20	20	0	0
Other duties	53	35	53	20	0	5
Total	360	360	240	240	120	120

Undergrad Statistics: Other 300 level, 400 level, 511, and 541

Overall Hours	50%	33%	17%	17%
Attend lecture	37.5	37.5	0	0
Discussion planning/review	75	45	45	0
Office hours	60	30	15	45
Discussion	45	30	15	0
Grading	120	80	40	60
Student contact	15	10	5	15
Other duties	7.5	7.5	0	0
Total	360	240	120	120

Graduate Statistics: 600 level and up, 571, 572

Overall Hours	50%	50%	33%
Attend lecture	37.5	37.5	37.5
Discussion planning/review	90	135	90
Office hours	45	30	30
Discussion	38	19	19
Grading	120	90	60
Student contact	20	30	20
Other duties	9.5	18.5	13.5
Total	360	360	240



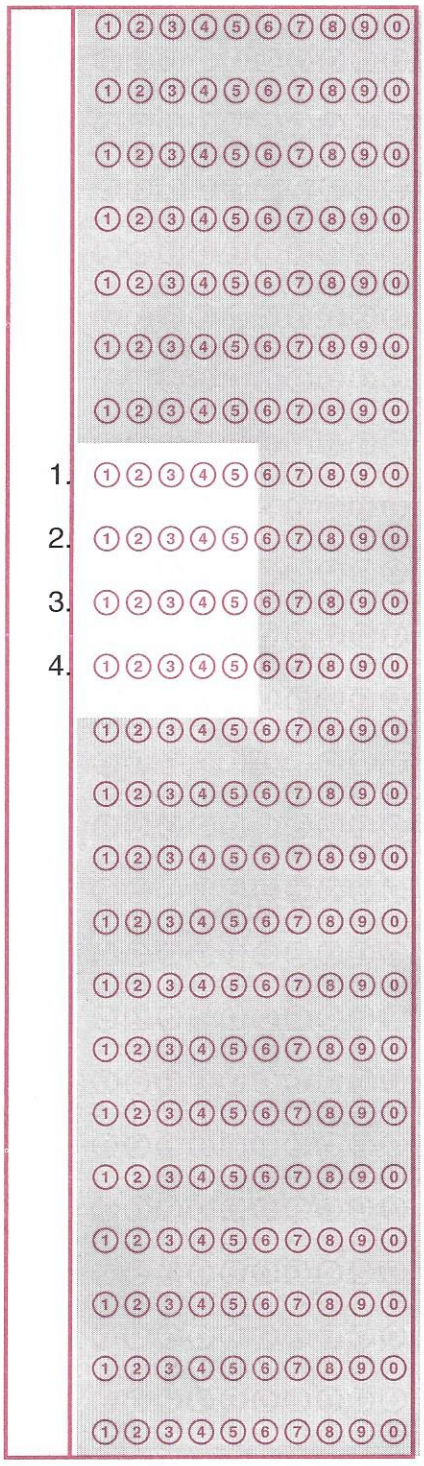
STATISTICS TA QUESTIONNAIRE

TA Name _____ Course # _____

You recently took a course in the Statistics Department. The Department is committed to improving the quality of instruction and providing useful feedback to instructors. We would greatly appreciate your thoughtful responses to the following questions. Thank you in advance.

1=very poor, 2=poor, 3=adequate, 4=good, 5=excellent

1. In general, the TA for the course was
2. The TA's oral communication skills were
3. The TA's approachability was
4. The discussion section's contribution to your understanding of the course was



-Over, please-

5. What are the TA's most notable strengths in teaching?

6. What aspects of the TA's teaching are most in need of improvement?

1	2	3	4	5	6	7	8	9	0
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1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0

UNIVERSITY OF WISCONSIN

FORM Q10S-GENERAL PURPOSE QUESTIONNAIRE

INSTRUCTIONS

USE A NUMBER 2 OR SOFTER LEAD PENCIL. MAKE ALL MARKS IN THE RESPONSE CIRCLES. THEY SHOULD BE DARK AND GLOSSY, AS SHOWN BELOW.

DO NOT MAKE ANY STRAY MARKS. ERASE COMPLETELY IF YOU CHANGE YOUR MIND. MARK ANY REQUESTED IDENTIFICATION ON THE REVERSE SIDE.

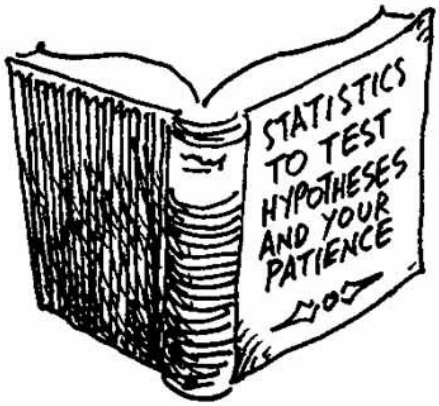
INCORRECT MARKS

CORRECT MARKS

1 3 4

ACCU-SCAN™ A1562 03/11 (ReflexRead) **APPERSON PRINT RESOURCES**

Statistics Tutorial Center



Is statistics trying your patience?
The statistics department offers **FREE** tutoring for intro classes:

Stat 301 Stat 371
Stat 224 Stat 324

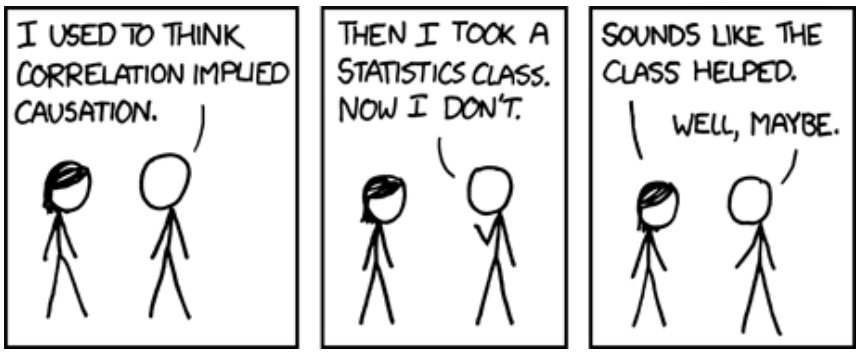
Stop by for tips on homework, further explanation of class material, guidance with computer assignments, or other intro stat class questions.

Tutoring is located in room **1274 of the Medical Sciences Center**. (closed the weeks of Spring Break and Thanksgiving)

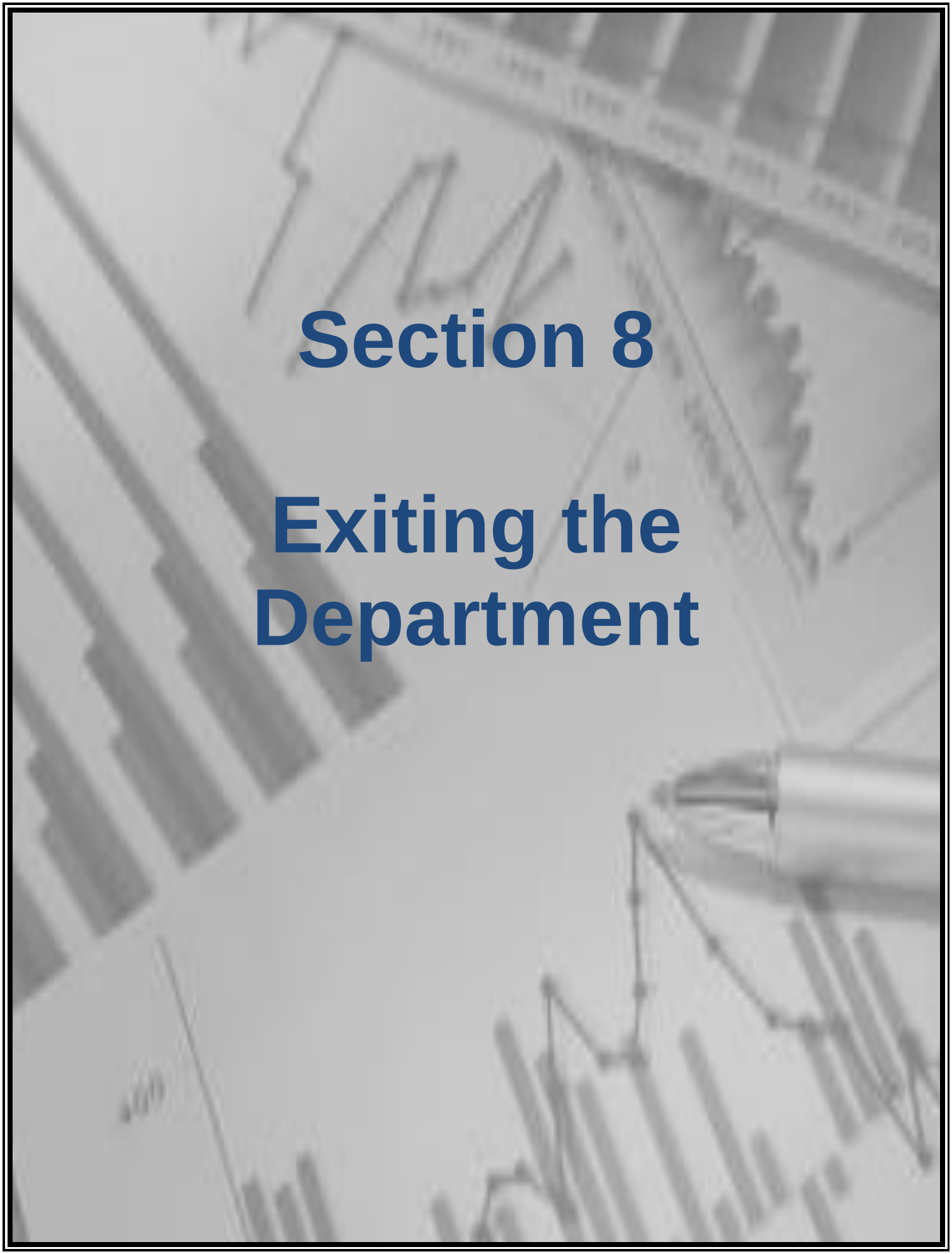
Hours

MONDAY:	**9 am - 4 pm**
TUESDAY:	**9 am - 4 pm**
WEDNESDAY:	**9 am - 4 pm**
THURSDAY:	**9 am - 4 pm**
FRIDAY:	**9 am - 4 pm**

Any questions can be directed towards
Student Services Coordinator



xkcd.com



Section 8

Exiting the Department

Procedures for Exiting the Department

Withdrawal from UW-Madison prior to completion of your degree:

If grad students wish to withdraw (i.e. drop all courses from the first to the last day of the semester), they initiate the withdrawal request in MyUW Student Center, where they receive several messages about the financial and academic implications of withdrawing, as well as a link to this comprehensive FAQ. When they submit the withdrawal request, it is reviewed by their academic dean's office, in this case the Graduate School, as well as International Student Services for students on J-1 and F-1 visas. If approved by the dean's office (and ISS), the withdrawal is processed by the Registrar and all classes are dropped. Students receive email confirmations when they submit a withdrawal and when it is approved. Additionally, when the Grad School approves the withdrawal, we will notify the appropriate graduate coordinator(s). If you have any questions or concerns, please contact Michelle Holland at michelle.holland@wisc.edu, 265-0519.

Department Procedures:

Once a decision has been reached to leave the Department of Statistics (either prior to or after finishing your degree), please complete the following steps:

1. Ask Andrea to email you the Statistics Department Exit form, and complete and return it to her as soon as possible.

2. If you have completed either your Master's or PhD degree, Andrea will also email you a Graduate Survey to fill out (both MS and PhD graduates) and Doctorates Granted Survey Form (PhD graduates only).

3. Turn in all department keys to Nancy.

4. Turn in your building access card to Denise.

Samples of the exit forms and surveys are on the following pages.

We wish you luck in your future – please keep us informed about your ventures!

STATISTICS DEPARTMENT EXIT FORM

We hope you enjoyed the time you spent with us. Before you leave, please complete this form.

NAME: _____

ADDRESS TO FORWARD MAIL:

_____

_____

_____

Phone: _____

Email: _____

Company/University employed:

_____

_____

_____

Job Title: _____

SAMPLE

MAIL: Remember to notify journals, etc. of your new address.

KEYS: **All keys must be turned in to the Statistics Department before you leave.**

COMPUTER ACCT: Your computer accounts and files will remain on the system for **30 (thirty)** days, after which they will be deleted. Be sure to arrange any transfers before you leave. We suggest making either a DVD or CD-R of your files. You must provide the media, which is available for purchase at the DO-IT Help Desk.
Contact Colleen Brabender at *brabend@stat.wisc.edu* for details.

For PhD graduates, if you are to retain a log-in directly with your advisor to continue exchange of research ideas, it is your responsibility to: 1) discuss this with your advisor; 2) have your advisor directly contact Colleen Brabender to retain your computer log-in.

(for office use only)

Keys have been turned in for: _____ office _____ computer rooms _____ outside door

_____ cubicle/drawer key

Date: _____

Survey of Graduate Degree Recipients in Statistics

Please answer the following questions and return this form to Andrea Palm. If you need more space, please submit additional pages. Thanks, in advance, for your participation in this important activity.

1. Graduation date (circle one):

   May

   August

   December

2. Degree (circle one):

   PhD

   MS

3. Briefly describe your plans for your first three years after graduation.

4. What are your career goals for seven years from now?

5. Discuss the graduate program. What are its strengths and weaknesses? How can we improve the program? Have we served your educational needs?

SAMPLE

Doctorates Granted

Annual Survey
of the Mathematical Sciences
AMS • ASA • IMS • MAA • SIAM

July 1, 2013 – June 30, 2014

For office use only ____14

Return to: American Mathematical Society • P.O. Box 6248 • Providence, RI 02940-6248
Email: ams-survey@ams.org • Fax: 401-331-3842 (Attn: Laura Byrum) •Tel: 800-321-4267

Please complete one Doctorates Granted form (photocopy as necessary) for **every** doctoral degree recipient and enter each one on the Sex, Race/Ethnicity & Citizenship form. **Return all forms together in the enclosed envelope by July 2, 2014.** The deadline may be extended, provided you return the enclosed postcard indicating the date you will respond or send an email to ams-survey@ams.org. **Note:** *We must receive the Gender, Race/Ethnicity & Citizenship form with every recipient who has a completed Doctorates Granted forms listed on it or we will be unable to include your department.*

Print clearly or type; the name and thesis title are used for the published list and the addresses are used for a follow-up survey to recipients.

Recipient

1) First name: _____

Last name: _____

2) Gender: ☐ Female ☐ Male

3) Citizenship: ☐ U.S. ☐ Non-U.S. from

_____
Country of Citizenship

with ☐ Permanent resident status in U.S.
☐ Temporary visa

Education

4) Institution: _____

Department: _____

Location: _____

5) Date conferred: | _____
Month Year

Include only those between July 1, 2013 –June 30, 2014

6) Type of degree: _____
PhD, EdD, etc.

Thesis

7) Thesis advisor(s):

_____ _____
Name Email

_____ _____
Name Email

8) Title of thesis: Capitalize proper nouns only.

_____

_____

_____

9) Describe field of thesis: _____

10) Indicate the one AMS subject classification code (see enclosed list) that *best* describes the field of thesis: 62

Addresses

11) Mailing Address for Summer 2014:

_____

_____

_____

_____

Email: _____

12) Mailing Address for Fall 2014: If same as above, check here ☐

_____

_____

_____

_____

Email: _____

Employment – Fall 2014

13) Check one:
- ☐ Employed full-time
- ☐ Employed part-time
- ☐ Not employed but still seeking
- ☐ Not employed and not seeking
- ☐ Employment status unknown

14) Has recipient left the U.S.?
- ☐ Yes
- ☐ No

15) If employed:

_____
Position title:

_____
Department/Division:

_____
Institution/Organization:

_____
Address line 1:

_____
Address line 2:

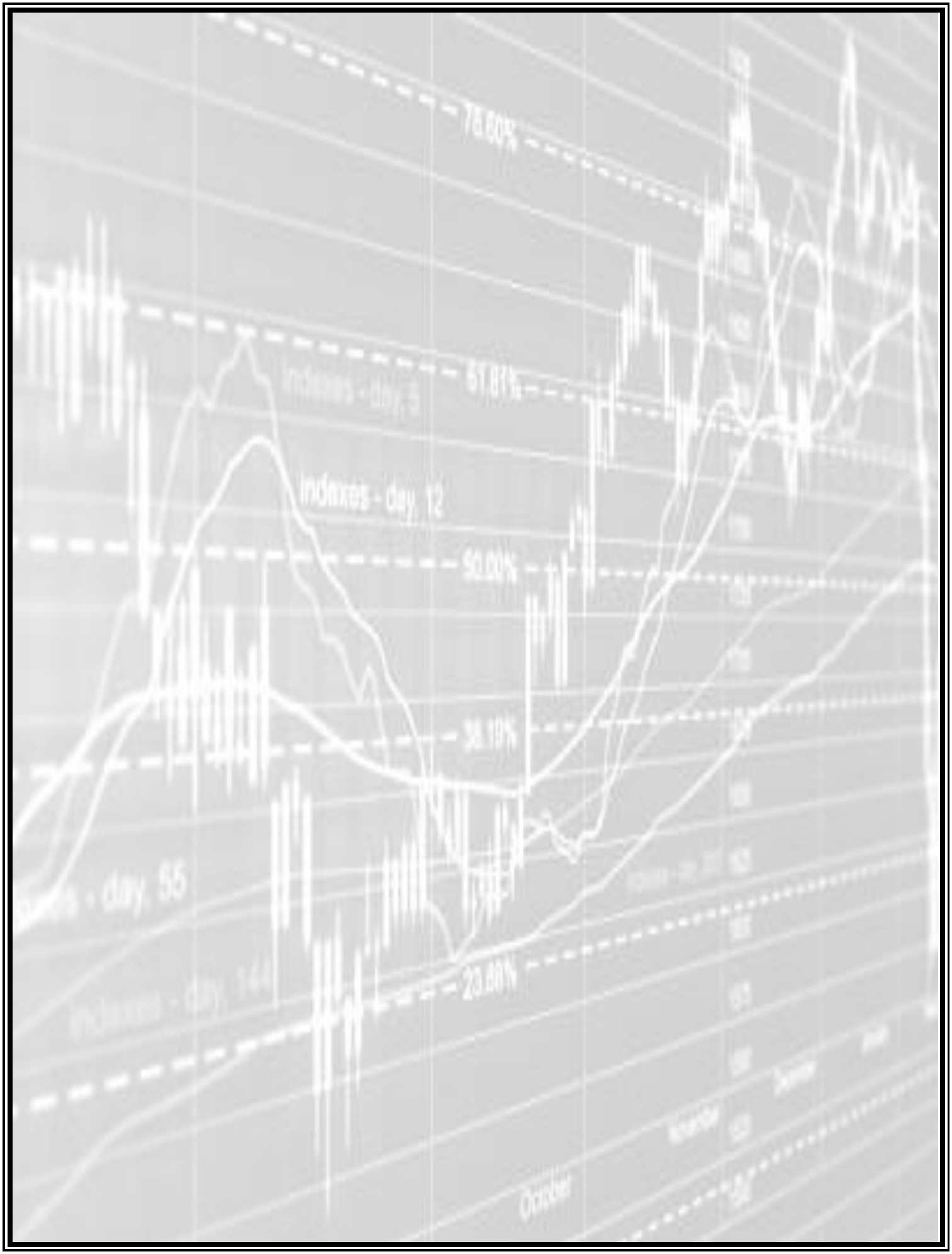
_____
City State Zip (& Country, if non-US)

16) Is this a postdoctoral appointment? ☐ Yes ☐ No

A postdoctoral appointment is a temporary position primarily intended to provide an opportunity to extend graduate training or to further research experience.

Name and title of person completing this form: Andrea Palm, Graduate Coordinator Date: _____

Tel: 608-262-2598 Fax: 608-262-0032 Email: palm@stat.wisc.edu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61.81%
indexes - day 12
50.00%
38.19%
23.60%
October