New Program Proposal

Date Submitted: 09/14/21 1:01 pm

Viewing: : Applied Statistics

Parent Plan: MAJ: Statistics MS

Last edit: 11/11/21 10:37 am

Changes proposed by: rodock

Name of the school or college academic planner who you consulted with on this proposal.

Name
Elaine M Klein - L&S

In Workflow

1. **STATISTICS Dept. Approver**
2. **L&S College Admin Reviewer**
3. **L&S College Approver**
4. **APIR Admin**
5. GFEC Approver
6. UAPC Approver
7. Registrar

Approval Path

1. 11/05/20 1:28 pm Sara Rodock (rodock): Approved for STATISTICS Dept. Approver
2. 12/21/20 10:40 am Elaine Klein (emklein): Rollback to Initiator
3. 09/14/21 1:03 pm Sara Rodock (rodock): Approved for STATISTICS Dept. Approver
4. 11/11/21 10:24 am Elaine Klein (emklein): Approved for L&S College Admin Reviewer
5. 11/11/21 10:38 am Elaine Klein (emklein): Approved for L&S College Approver

Proposal Abstract/Summary:

The Department of Statistics proposes to create a new named option within the MS Statistics, focused on applied statistics. The department recognizes that many students wish to have significant training within statistics, but apply their knowledge paired with a domain field in which they will utilize their statistical knowledge. This option within the MS Statistics provides the opportunity to do this. We anticipate that many students will wish to pursue this program as a double, dual, or joint degree.

Note regarding curriculum: STAT 678 is currently in the course approval process and is at the UCC approver stage (as of July 8, 2021; https://next-guide.wisc.edu/courseadmin/?key=14243).

Note that this proposal was started in Fall 2020 when Jun Zhu was department chair, and current chair is now Yazhen Wang.

Basic Information

Program State:	Active
Type of Program:	Named Option
Parent Program:	MAJ: Statistics MS
Parent Audience:	Graduate or professional
Parent Home Department:	Statistics (STATISTICS)
Parent School/College:	College of Letters and Science

The program will be governed by the home department/academic unit as specified. Will an additional coordinating or oversight committee be established for the program?

No

Parent is in the Graduate School:	Yes
Parent Award	Master of Science
SIS Code:	
SIS Description:	
Transcript Title:	Applied Statistics

Named Options:	DS949MS: Data Science BIO: Biostatistics 949MSSTAT: Statistics Sub Plan 1173: No Title Found
Does the parent program offer this as an additional major as well?	No
Is this a non-admitting named option for a master's degree?	No

Roles by Responsibility: List one person for each role in the drop down list. Use the green + to create additional boxes.

Role Type	Name (Last, First)	Email	Phone	Title
Faculty Director	Yandell, Brian	byandell@wisc.edu	608/263-3304	
Primary Dean's Office Contact	Klein, Elaine	emklein@wisc.edu	608/265-8484	Associate Dean for Academic Planning
Primary Contact	Rodock, Sara	rodock@wisc.edu	608/262-3851	
Department Chair	Wang, Yazhen	wang239@wisc.edu	608/262-3720	

List the departments that have a vested interest in this proposal.

Departments
Col of Agricultural & Life Sci (CALS)
Biostatistics and Medical Info (B M I)
Animal and Dairy Sciences (AN&DY SCI)
Biostatistics and Medical Info (B M I)
Botany (BOTANY)
Entomology (ENTOM)
Forest and Wildlife Ecology (F&W ECOL)
Industrial and Systems Engr (IND SY EGR)

Departments
Plant Pathology (PL PATH)
Political Science (POLI SCI)

Are all program reviews in the home academic unit up to date?	Yes
Are all assessment plans in the home academic unit up to date?	Yes
Are all assessment reports in the home academic unit up to date?	Yes
Mode of Delivery: Face-to-Face (majority face-to-face courses)	
Will this program be part of a consortial or collaborative arrangement with another college or university?	No
Will instruction take place at a location geographically separate from UW-Madison?	No
Parent has outside accreditation:	No
Graduates of parent program seek licensure or certification after graduation.	No
First term of student enrollment:	Fall 2022 (1232)
Year of three year check-in to GFEC (3 years after first student enrollment):	2026
Year of first program review (5 years after first student enrollment):	2028

If this proposal is approved, describe the implementation plan and timeline.

Once the program is approved, the Statistics department will provide information on our website to recruit new students to the named option. Additionally, we will work internally at UW-Madison to advertise this new named option so that students who are already on campus may know about this program.

Rationale and Justifications

How does the named option relate to the major and to other named options in the major, if relevant?

The Statistics department would like to add the Applied Statistics option to our existing suite of programs under the MS Statistics. This option would provide an opportunity for students to take a curriculum that is statistically robust, but also pairs it with coursework in a second domain field of interest. This option will relate to the other options in that it builds upon our existing graduate-level foundation courses, but students will have the flexibility to select appropriate domain electives with their advisor.

Why is the program being proposed? What is its purpose?

This program will provide a unique and specialized educational opportunity to students who will be well trained in statistics, but also have skills to apply that knowledge within a specific domain field.

Do current students need or want the program? Provide evidence.

Over the past 10 years Statistics has had 142 students graduate from the pooled MS programs. Forty eight of the students have complete either or both a PhD and/or MS outside of Statistics. Of the 12 students enrolled in the Statistics MS Statistics and Biostatistics named options in Spring 2021, 5 students have an additional graduate program outside of Statistics.

What is the market, workforce, and industry need for this program? Provide evidence.

The field of statistics continues to be one of the fastest growing fields. In the Occupational Outlook Handbook from the U.S. Bureau of Labor Statistics, Mathematicians and Statisticians have an expected job outlook growth for 2019-2029 of 33% which is classified as much faster than average and statisticians in particular has a project growth of 35%. This report states that "growth is expected to result from more widespread use of statistical analysis to inform business, healthcare, and policy decisions. The amount of digitally stored data will increase over the next decade as more people and companies conduct business online and use social media, smartphones, and other mobile devices. As a result, businesses will increasingly need statisticians to analyze the large amount of information and data collected. Statistical analyses will help companies improve their business processes, design and develop new products, and advertise products to potential customers." We see that it is important to provide an opportunity for students to be both well trained in statistics, but also have the domain knowledge for the wide variety of areas in which statistics is employed.

https://www.bls.gov/ooh/math/mathematicians-and-statisticians.htm#tab-6

What gap in the program array is it intended to fill?

The Statistics department acknowledges that we already have an array of existing programs, but this program will provide a unique experience.
-MS Statistics: Statistics is a program that is solely focused on coursework within Statistics, has an emphasis on teaching consulting skills, and is often an option for students to complete while in the Statistics PhD or for students who wish to continue on for a PhD
-MS Statistics: Biostatistics is similar to the previous program, but builds upon UW's vast expertise and historical strength in biostatistics and provides students an opportunity to focus within that area.
-MS Statistics: Data Science is a 131, revenue-generating programs that builds upon statistical principles to give students the tools to working with the field of data science. As with 131 programs, the MS Statistics: Data Science option cannot be paired with other graduate programs and the option for electives within a second domain field are tightly regulated.

The goal of the MS Statistics: Applied Statistics is to give students the opportunity to pair a solid foundation in Statistics with a domain field of their choosing to become a well trained statistical researcher who will work in a collaborative environment. We anticipate that many students may wish to pair this program with an MS or PhD in a second domain area as well. We have provided letters of support from a number of departments that anticipate their students will take advantage of this new program.

Diversity and Inclusion

Describe how the proposed program curriculum and learning outcomes will advance inclusive excellence. Discuss specific components and requirements within the curriculum that will offer students opportunities and learning activities to engage in diversity with respect to perspectives, theories, practices, and populations different from themselves. If internships or clinical, practicum, or experiential learning experiences will be required, discuss how students will have access to diverse practice settings.

In alignment with the College of Letters and Sciences commitment to diversity, the proposed named option will continue along with the other named options to address diversity and equity within the program curriculum. The curriculum will strive to ensure that students can demonstrate professional communications, teamwork, and are aware of culture competencies. This will be demonstrated through the assessment of our learning goals of “communicates data concepts and analysis results clearly” and “recognizes and applies principles of ethical and professional conduct.”

Parent Value

Discuss how the proposed program will actively pursue an equity in student recruitment, access, retention, and degree completion. Describe specific strategies to identify and recruit a diversified student population for programs that do direct admissions. Include evidence-based and effective practices. Provide examples of academic and student support services that will be implemented to support student learning success and completion.

In Summer 2021 we hired a new Student Services Coordinator where 25% of their position is in recruitment efforts for all of the Statistics offered graduate programs. The previous person in this position worked to identify best practices of other similar departments at UW-Madison so that we begin to create a comprehensive and intentional recruitment strategy. Due to COVID, many of these plans have been delayed. Below is a summary of the proposal and then two specific highlights of new activities that we have begun this year.

-Pre-application: engage in a variety of recruitment opportunities such as Statistics conferences, minority recruiting conferences (e.g., SACNAS), explore smaller conferences to have a broader reach where faculty attend to build connections with prospective applicants; create more modern recruitment materials including updating our website to be more student focused and have materials/swag for conferences
-Application: offer fee-waivers to applicants from diverse backgrounds; have a more pro-active communication strategy during the process to provide transparency; revamp the visit program/schedule to better demonstrate our climate and build community
-Pre-matriculation: assign “faculty contacts” to each admitted applicant who will be tasked with having regular communication with candidates; explore opportunities to connect applicants with alumni
-Post-admission: track how applicants came to us to begin to identify successful pathways; explore additional pipelines and pathways

We understand that creating and launching a systematic recruitment process is a large undertaking and some of it not possible during COVID. We did pick two activities that are possible this year to begin this process and ones in particular that will help with recruitment of a diverse student population. The first is that the department attended the 2020 SACNAS conference and then providing connections from interested students to faculty. The second is the plan to assign faculty contacts to each admitted applicant. The goal, when possible, will be to match faculty and students in a way to build mentorship along research interests and demographic backgrounds.

As we continue to implement the new recruitment strategy, we will also develop better mechanisms to review student progress and assure that there aren’t inequities between students of different demographics. We already do have practices that align with this like blind grading of MS and qualifying exams and will analyze our milestones to include additional practices such as this.

Parent Value

Consider how the proposed program will ensure equity in recruiting and hiring of faculty, instructional staff, and staff who will oversee the program curriculum, professional/career development experiences, and research/scholarship where relevant.

The Department of Statistics will continue with their efforts to diversify the faculty body. On the faculty recruitment front, Statistics has focused on increasing the number of faculty who come from underrepresented populations, including increasing the number of female faculty in the department. The department has reached out to alumni and colleagues in departments across the country to recruit a diverse population of candidates to apply for our faculty positions. In addition to these recruitment efforts, the department will promote training to raise faculty awareness of diversity and inclusion issues prevalent at UW-Madison.

Parent Value

Note any plans or strategic initiatives at the university that are closely linked with the development of the proposed program. Note how efforts will align with the appropriate and applicable accreditation standards that address diversity where relevant. To the extent that the response to questions related to diversity, equity, and inclusion are connected to plans at the department, school/college or university, make those connections explicit where relevant.

During the past few years, the Department of Statistics has done some analysis of our departmental climate to be in alignment with campus expectations and goals. Our Climate Committee continues to assess the environment and provide improvements. One specific goal of the committee has been to provide more departmental events to help build community across all faculty, staff, and students.

The Department of Statistics is now in the School of Computing, Data, and Information Sciences (CDIS). CDIS has five focus areas and area three is “Inclusion – Addressing under representation and inclusivity problems in the STEM fields and bringing together diverse populations, points of view and approaches.” Via the CDIS diversity committee we have begun to see a shared effort across departments to increase diversity, equity, and inclusion efforts by supporting each department’s work and commitment, all of which include the Statistics Department.

Parent Value

Faculty and Staff Resources

List the core program faculty and staff with title and departmental affiliation(s) who are primarily involved and will participate in the delivery and oversight.

Name (Last, First)	Department	Title
Yandell, Brian	Statistics (STATISTICS)	Professor
Zhu, Jun	Statistics (STATISTICS)	Professor
Ane, Cecile	Statistics (STATISTICS)	Professor

What resources are available to support faculty, staff, labs, equipment, etc.?

Faculty and staff will draw on existing resources of advising, instruction and computing support within the Department of Statistics. In addition, students and their advisors now have access to campus-level research cyberinfrastructure resources for data storage (on prem and cloud) and high throughput computing that enable more effective cross-disciplinary data-rich research activity.

Program advisor(s) with title and departmental affiliation(s).

Name (Last, First)	Department	Title
Yandell, Brian	Statistics (STATISTICS)	Professor
Zhu, Jun	Statistics (STATISTICS)	Professor
Ane, Cecile	Statistics (STATISTICS)	Professor

Describe how student services and advising will be supported.

John Schuppel is a Student Status Examiner Senior in the Department of Statistics who already provides student services to the existing 101 MS Statistics programs and will also provide support for the MS Statistics: Applied Statistics option.

Students will have an advisor from Statistics based on their area of interest and will need to have a committee that includes both faculty from Statistics as well as the second domain field.

Confirm that the program advisor(s) or coordinator(s) have been consulted and reviewed this proposal. Yes

Resources, Budget, and Finance

Is this a revenue program? No

What is the tuition structure for this program?

Standard resident/MN/nonresident graduate tuition

Does the program or change require substantial new resources other than those just described? Describe the needs. Confirm that the dean is committed to providing the resources.

L&S will not provide new resources to support this program. All resources required (faculty and staff as well as computing and other resources) are currently available through the Department of Statistics.

Are new Library resources needed to support this program?

No

Describe plans for funding students including but not limited to funding sources and how funding decisions are made.

All full-time MS Statistics: Applied Statistics students will be offered 2 years of guaranteed support via teaching assistantships within Statistics at the time of admission with the option for additional semesters of support, if needed and as space allows. Given the recent large growth of statistics teaching, we need more graduate students in the department to meet the demand and these additional students will be excellent teaching assistants in the gateway courses in particular, since many of these courses are targeted towards students outside of the Statistics and Data Science majors.

Curriculum and Requirements

Parent Plan Admissions/How To Get In Requirements

Students apply to the Master of Science in Statistics through one of the named options:
Biostatistics
Data Science
Statistics

Guide Admissions/How to Get In tab

Approved Shared Content from /shared/graduate-school-admissions/
Last Approved: Apr 15, 2021 12:15pm

Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website.
Graduate admissions is a two-step process between academic programs and the Graduate School. ***Applicants must meet the minimum requirements of the Graduate School as well as the program(s).*** Once you have researched the graduate program(s) you are interested in, apply online.

Fall Deadline	March 15
Spring Deadline	November 1
Summer Deadline	The program does not admit in the summer.
GRE (Graduate Record Examinations)	Not Required

English Proficiency Test	Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (https://grad.wisc.edu/apply/requirements/#english-proficiency).
Other Test(s) (e.g., GMAT, MCAT)	n/a
Letters of Recommendation Required	3

Applicants to the MS Statistics: Applied Statistics program may fall in to two categories:
Joint, double, or dual degree with another program on campus. For students who fall in to this category they may apply either while they are applying to their domain program or once they are on campus. It is strongly advised that students indicate their domain program in their statement of interest. For applicants already on campus, please contact admissions@stat.wisc.edu for information on how to apply.
Stand-alone program students. For students who fall in to this category, it is strongly advised to include information in your statement regarding your specific domain area, ideas for collaboration within the domain field, and address why this option versus the traditional MS Statistics: Statistics.
Applicants to the MS Statistics: Applied Statistics program should have completed the following courses equivalent to the UW-Madison courses listed below:

Undergraduate Calculus		
MATH 221	Calculus and Analytic Geometry 1	5
MATH 222	Calculus and Analytic Geometry 2	4
MATH 234	Calculus--Functions of Several Variables	4
Statistics		
Complete one sequence below		
Option 1		
STAT/F&W ECOL/ HORT 571 & STAT/ F&W ECOL/ HORT 572	Statistical Methods for Bioscience I and Statistical Methods for Bioscience II	
Option 2		
STAT 301	Introduction to Statistical Methods	
or STAT 324	Introductory Applied Statistics for Engineers	
or STAT 371	Introductory Applied Statistics for the Life Sciences	
STAT 303	R for Statistics I	
STAT 333	Applied Regression Analysis	
Option 3		

POLI SCI 812	Introduction to Statistical Methods in Political Science
& POLI SCI 813	and Multivariable Statistical Inference for Political Research

Option 4: or another similar introductory statistics sequence

Describe plans for recruiting students to this program.

The department recruitment coordinator will update information on our website to highlight this new program, participate in relevant recruitment events, and provide clear information regarding the difference between all of the MS Statistics options. Additionally, we have already begun to reach out to departments where double, joint, and dual degree students might exist to advertise the program to those students.

Projected Annual Enrollment:

Year	Projected Enrollment
Year 1	5
Year 2	8
Year 3	10
Year 4	12
Year 5	12

Those who are not familiar with using the html editor fields may upload a document with information about the curriculum for use by those who will format and edit the content that will appear in the Guide.

Parent
Requirements

Approved Shared Content from /shared/graduate-minimum-degree-requirements-and-satisfactory-progress/
Last Approved: Apr 15, 2021 12:16pm

Minimum Graduate School Requirements

Review the Graduate School minimum academic progress and degree requirements, in addition to the program requirements listed below.

Major Requirements

CURRICULAR REQUIREMENTS

Minimum Credit Requirement	30 credits
Minimum Residence Credit Requirement	16 credits
Minimum Graduate Coursework Requirement	Half of degree coursework (15 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (https://registrar.wisc.edu/course-guide/).
Overall Graduate GPA Requirement	3.00 GPA required.
Other Grade Requirements	See Named Options for grade requirements.
Assessments and Examinations	See Named Options for policy information.
Language Requirements	No language requirements.

Required COURSES

Select a Named Option for courses required.

Named Options

A named option is a formally documented sub-major within an academic major program. Named options appear on the transcript with degree conferral. Students pursuing the Master of Science in Statistics must select one of the following named options:

View as list

View as grid

Statistics: Biostatistics, M.S.

Statistics: Data Science, M.S.

Statistics: Statistics, M.S.

Guide Requirements tab

Approved Shared Content from /shared/graduate-minimum-degree-requirements-and-satisfactory-progress/
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Minimum Graduate School Requirements

Review the Graduate School minimum academic progress and degree requirements, in addition to the program requirements listed below.

Named Option Requirements

Mode of Instruction

Face to Face	Evening/Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	NO

Mode of Instruction Definitions

Approved Shared Content from /shared/graduate-school-mode-instruction-definitions/

Last Approved: Apr 15, 2021 12:16pm

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students are able to complete a program with minimal disruptions to careers and other commitments.
Evening/Weekend: Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.
Face-to-Face: Courses typically meet during weekdays on the UW-Madison Campus.
Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.
Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

Curricular Requirements

Minimum Credit Requirement	30 credits
Minimum Residence Credit Requirement	16 credits
Minimum Graduate Coursework Requirement	Half of degree coursework (15 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Search and Enroll app (https://registrar.wisc.edu/course-search-enroll/). Additionally, the Department of Statistics considers graduate coursework to be numbered 600 or above.
Overall Graduate GPA Requirement	minimum 3.00 GPA required.
Other Grade Requirements	Minimum 3.00 GPA required in all course work taken as a graduate student in courses numbered 300 or above, not including research credits, unless conditions for probationary status require higher grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.
Assessments and Examinations	Candidates must complete a project with an emphasis on the integration of statistics and science. A final oral examination is also required upon completion of the coursework and project.
Language Requirements	No language requirements.

Required Courses

Introductory Mathematical Statistics	
Complete using one of the following sequences	6

STAT/ MATH 309 & STAT/ MATH 310	Introduction to Probability and Mathematical Statistics I and Introduction to Probability and Mathematical Statistics II	
STAT 311 & STAT 312	Introduction to Theory and Methods of Mathematical Statistics I and Introduction to Theory and Methods of Mathematical Statistics II	
Or equivalent one-year sequence		
Statistics Graduate Electives		**9**
Statistics 600-level or above [1]		6
Statistics 500-level or above [2]		3
Domain Area Electives		**9**
Applied Experience		**6**
STAT 678	Introduction to Statistical Consulting	3
Research or Project		3

1 Excluding STAT/B M I 641 Statistical Methods for Clinical Trials, STAT 698 Directed Study, STAT 699 Directed Study, STAT 990 Research, and any courses/sections reserved for MS Statistics: Data Science or Statistics-VISP students.

2 Excluding STAT/F&W ECOL/HORT 571 Statistical Methods for Bioscience I, STAT/F&W ECOL/HORT 572 Statistical Methods for Bioscience II, STAT 698 Directed Study, STAT 990 Research and and any courses/sections reserved for MS Statistics: Data Science or Statistics-VISP students. Credits from suitable quantitative courses taught in other departments (e.g., mathematics) may be substituted.

Selecting Program Coursework

All students in the MS Statistics: Applied Statistics option will work directly with their Statistics advisor prior to initial enrollment and will need to work with their Statistics advisor, domain committee member/co-advisor, and 3rd committee member to select appropriate coursework during their first year of enrollment. This will be done by completing the MSAS course plan form (which is found in the program handbook). Students are strongly encouraged to have all coursework pre-approved and multiple options of courses, in the case of the domain electives, to ensure that they are able to complete appropriate courses approved by their committee.

Domain coursework that covers statistical methodology is limited to a maximum of 3 credits. Independent study or internship credits cannot be included in domain coursework. Students will need to have a central theme to their domain coursework that can be selected from multiple, related departments. Here are some examples of themes and courses:

Ecology: F&W ECOL/ZOOLOGY 660 Climate Change Ecology, F&W ECOL/BOTANY/ENVIR ST/ZOOLOGY 651 Conservation Biology, ZOOLOGY/BOTANY 725 Ecosystem Concepts

Entomology: ENTOM 450 Basic and Applied Insect Ecology, ENTOM/GENETICS/ZOOLOGY 624 Molecular Ecology, ENTOM 701 Advanced Taxonomy

Information: L I S 615 Systems Analysis and Project Management for Information Professionals L I S 711 Data Management for Information Professionals, L I S 751 Database Design for Information Professionals
Plant Breeding and Plant Genetics: HORT/AGRONOMY 501 Principles of Plant Breeding, HORT/AGRONOMY 811 Biometrical Procedures in Plant Breeding, HORT/GENETICS 550 Molecular Approaches for Potential Crop Improvement
Plant Pathology: PL PATH 300 Introduction to Plant Pathology, PL PATH/BOTANY/ENTOM 505 Plant-Microbe Interactions: Molecular and Ecological Aspects, PL PATH 602 Ecology, Epidemiology and Control of Plant Diseases
Political Science: POLI SCI 817 Empirical Methods of Political Inquiry, POLI SCI 818 Maximum Likelihood Estimation, POLI SCI 919 Seminar-Advanced Methodology
Population Health: POP HLTH 795 Principles of Population Health Sciences, POP HLTH 796 Introduction to Health Services Research, POP HLTH/SOC 797 Introduction to Epidemiology, POP HLTH 798 Epidemiologic Methods
The course plan will be reviewed by the student services coordinator prior to the requesting of the MS warrant to ensure that the correct and approve courses have been completed.

Research or Project

Each student must complete a project that represents an original contribution to applied statistics as the goal of this named option is to train statisticians who will work in a collaborative research environment. Examples of such contributions may include the creation and evaluation of a useful experimental design, the development and/or comparison of statistical methods, or a novel analysis of some interesting data related to their domain area. All students in the MS Statistics: Applied Statistics option will work directly with their Statistics advisor and domain committee member/co-advisor to identify an appropriate project.
The project results are to be presented in a manuscript with emphasis on the integration of statistics and science that is approved by the student's 3-member committee. 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'' or "Directed Study" and can be done either in Statistics or in another department and can relate directly to a thesis or dissertation for joint, double, or dual degree students (these credits cannot be used for meeting other requirements.)

Total credits required:

30

Parent Plan Graduate Policies

Students should refer to one of the named options for policy information:
Biostatistics
Data Science
Statistics

Guide Graduate Policies tab

Approved Shared Content from /shared/graduate-school-policies/
Last Approved: Apr 15, 2021 12:16pm

Graduate School Policies

The Graduate School's Academic Policies and Procedures provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

Named Option-Specific Policies

Prior Coursework

Graduate Work from Other Institutions

With program approval, students are allowed to count no more than 9 credits of graduate coursework from other institutions towards the graduate degree credit and graduate coursework (50%) requirements. Coursework earned five or more years prior to admission to the master's degree is not allowed to satisfy requirements.

UW-Madison Undergraduate

No credits from a UW–Madison undergraduate degree are allowed to count toward the degree.

UW-Madison University Special

No credits earned while a UW–Madison University Special student are allowed to count toward the degree.

Probation

Candidates who fail to meet satisfactory progress criteria in two consecutive reviews will be dropped from the program.

Advisor / Committee

Students are required to meet with their advisor near the beginning of each semester to discuss course selection and progress.

Credits Per Term Allowed

15 credits

Time Constraints

If the student is enrolled in a concurrent Ph.D. degree, the student should make application for both the master's and Ph.D. degrees during the semester in which they defend. In other words, the Masters Statistics: Applied Statistics degree should be completed by the semester in which the concurrent Ph.D. degree is completed. It is expected that all enrolled students will complete the program within three years.

Grievances and Appeals

Approved Shared Content from /shared/graduate-school-grievance-policy/
Last Approved: Apr 15, 2021 12:17pm

These resources may be helpful in addressing your concerns:

These resources may be helpful in addressing your concerns:

Bias or Hate Reporting
Graduate Assistantship Policies and Procedures
Hostile and Intimidating Behavior Policies and Procedures
Office of the Provost for Faculty and Staff Affairs
Dean of Students Office (for all students to seek grievance assistance and support)
Employee Assistance (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
Employee Disability Resource Office (for qualified employees or applicants with disabilities to have equal employment opportunities)
Graduate School (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
Office of Compliance (for class harassment and discrimination, including sexual harassment and sexual violence)
Office of Student Conduct and Community Standards (for conflicts involving students)
Ombuds Office for Faculty and Staff (for employed graduate students and post-docs, as well as faculty and staff)
Title IX (for concerns about discrimination)

Other

The Applied Statistics option is distinct from the other M.S. statistics options in its interdisciplinary emphasis with domain specific electives and research/project and corresponding reduced depth in statistics. Students interested in training with statistical consulting as the primary focus should apply for the MS Statistics: Statistics.

Discuss expected progress to degree and time to degree. For undergraduate programs discuss considerations for supporting students to complete the degree in four academic years.

Standalone students completing the MS Statistics: Applied Statistics would be expected to complete the program in 2 years. The program requires 30 credits to graduate and students will be expected to complete ~18 credits of coursework in their first year. The remaining 12 credits will come in the second year and leave more time for the consulting experience and research/project. Student who wish to enroll on a part-time basis will work with their advisor to identify a time to degree that meets their needs.

Double, joint, and dual degree students will likely need additional time to complete multiple programs worth of requirements. In this case, students will work with both programs to identify a time-to-degree plan that best suits their individual needs. PhD students will need to identify a plan that allows them to maintain compliance with dissertator policies.

All students will be able to apply for additional TA support if they go beyond their 2 years of provided support as long as they demonstrate satisfactory academic progress and as available TA positions allow.

Program Learning Outcomes and Assessment

Parent Program

Learning Outcomes

Demonstrates understanding of statistical theories, methodologies, and applications as tools in scientific inquiries.

Selects and utilizes the most appropriate statistical methodologies and practices.

Synthesizes information pertaining to questions in empirical studies.

Communicates data concepts and analysis results clearly.

Recognizes and applies principles of ethical and professional conduct.

Summarize the assessment plan.

The department of Statistics utilizes the MS exam/capstone/final project (depending on the named option) to assess the learning outcomes. Every year our assessment coordinator will collect rubrics, based on an oral presentation by the MS Statistics: Applied Statistics student from their final project. Committee members in the presentation will fill out the provided rubric. Once the assessment coordinator collects the rubrics a final assessment summary, along with any recommendations from the faculty, will be provided to the Provost's Office.

Commitments

All required courses are approved through the school/college level.

Yes

Courses are offered on a regular basis to allow timely completion.

Yes

Courses have enrollment capacity.

Yes

Students may complete only 1 named option within a plan code.

Yes

The program faculty/staff will ensure the program website, Advance Your Career materials if applicable, and other presentations are consistent with the Guide information for this program.

Yes

Credential will not be awarded retroactively to students who completed all of the requirements before the credential was approved.

Yes

Supporting Information

List name and department of those who are in support of this proposal.

Name (Last, First)	Date of contact/support letter received	School,College, or Department	Comment by contact person	On behalf of
Weigel, Kent	10.12.2020	Animal and Dairy Sciences (AN&DY SCI)	supportive, see attached letter	
Newton, Michael	07.07.2021	Biostatistics and Medical Info (B M I)	supportive, see attached letter	
Cameron, Kenneth	07.07.2021	Botany (BOTANY)	supportive, see attached letter	
Groves, Russell	07.04.2021	Entomology (ENTOM)	supportive, see attached letter	
Kruger, Eric	07.07.2021	Forest and Wildlife Ecology (F&W ECOL)	supportive, see attached letter	
Linderoth, Jeffrey	07.06.2021	Industrial and Systems Engr (IND SY EGR)	supportive, see attached letter	
Gevens, Amanda	07.02.2021	Plant Pathology (PL PATH)	supportive, see attached letter	
Canon, David	07.07.2021	Political Science (POLI SCI)	supportive, see attached letter	
De Leon Gatti, Natalia	07.03.2021	Agronomy (AGRONOMY)	on behalf of the Plant Breeding & Plant Genetics program, supportive, see attached letter	

Name (Last, First)	Date of contact/support letter received	School,College, or Department	Comment by contact person	On behalf of
Barber, Sarah	10.22.2021	Col of Agricultural & Life Sci (CALS)	on behalf of CALS: The CALS APC offers it support for all three programs.	CALS
Conklin, Peggy	10.22.2021	College of Engineering (ENGINEERG)	on behalf of EGR: Peggy Conklin (mjconkli) (10/21/21 8:33 am): Reviewed at the 10.20 College of Engineering APC meeting; no concerns or additional comments from Engineering.	EGR
Outhouse, Dana	11.10.2021	School of Business (BUSINESS)	supportive: "The Wisconsin School of Business Dean's Office reviewed the proposal and offers its support of the proposal."	WSB
Robbins, Paul	11.4.2021	Inst for Environmental Studies (ENVIR ST)	supportive:"The credential is enormously valuable, the capacity of the unit is unquestionable, and the value that it brings to campus is clear."	Nelson
Golden, Robert	11.2.2021	School of Med & Pub Hlth ACAF (SMPH ACAF)	enthusiastic support:"Program design aligns with strategic priorities of SMPH..."	SMPH
Swanson, Steven	10.27.2021	School of Pharmacy (PHARMACY)	no concerns	Pharmacy

If those supporting the proposal provided a letter or email of support upload here. A letter is NOT required. Upload any other explanatory information about support from other UW-Madison units.

AnDySci.pdf
BMI.pdf
Botany.pdf
Entomology.pdf
FWE.pdf
ISYE.pdf
PBPG.pdf
PlPath.pdf

PoliSci.pdf
MDS-BMI.pdf

Additional Information:

Pharmacy - no concerns MS-Stat Applied Stats.pdf
Nelson Support - MS Stat Applied Stats.pdf
SMPH Support MS-Applied Statistics.pdf

Approvals

Department Approval - This proposal has been approved by the faculty at the department/academic unit level. The program faculty confirm that the unit has the capacity and resources (financial, physical, instructional, and administrative) to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program in the Guide and elsewhere, conducting student learning assessment and program review, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:

The Department of Statistics reviewed the proposal for the MS Statistics: Applied Statistics option at the department meeting on October 13 and a motion to approve was passed unanimously at the meeting. Per request from Elaine Klein the Statistics faculty have reviewed the revisions from the Fall 2020 version and have given their approval again unanimously (17 for, 0 against, 0 abstentions) at the September 14, 2021 meeting.

Entered by: Sara Rodock
Date entered: 11/5/2020, 9/14/2021

School/College Approval - This proposal has been approved at the school/college level and it is submitted with the Dean's support. The Dean and program faculty confirm that the unit has the capacity and resources (financial, physical, instructional, and administrative) to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program in the Guide and elsewhere, conducting student learning assessment and program review, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:

This proposal was considered and recommended for approval by the L&S Curriculum Committee on 9/14/2021; the L&S Academic Planning Council approved it one week later (9/21/2021), noting that the proposal design appears to be sustainable and likely to meet the needs of a broad array of researchers across the university, who will benefit from guidance in applying statistical methods to their work. Following approval, the proposal was widely

circulated for comment, and responses from other UW-Madison units support that perspective, as documented above.

Entered by and date: Elaine M. Klein, on behalf of the College
Date entered: 11/11/2021

GFEC Approval - This proposal has been approved by the Graduate Faculty Executive Committee and the Dean of the Graduate School.

Enter any notes about the approval here:

Entered by:
Date entered:

UAPC Approval - This proposal has been approved by the University Academic Planning Council and the Provost.

Enter any notes about approval here:

Entered by:
Date entered:

For Administrative Use

Admin Notes:

Guide URL:

SIS effective date:

Guide publish date/type:

Tuition start term:

SIS Short Description:

Other plan codes associated with this program:

Educational Innovation Program:

Distance Education Program:

Non Traditional Program:

Special Plan Type:

Scan this proposal:

Upload documents that should be scanned:

Reviewer Comments

Elaine Klein (emklein) (12/21/20 10:40 am): Rollback: Returned to department with edits and many question (ALL CAPS) in many sections. Important to remove references to Biometry program (basing a case for creating a new program on a program that is being discontinued is not a strong argument). Strongly recommend consultation with Grad School (Kipp Cox) about Diversity/Equity/Inclusion questions. Also note that several courses in 500 and 600 range include enrollment in Biometry as a requisite - that will need to be adjusted, eventually.

Peggy Conklin (mjconkli) (10/21/21 8:33 am): Reviewed at the 10.20 College of Engineering APC meeting; no concerns or additional comments from Engineering.

Sarah Barber (scbarber) (10/22/21 11:35 am): The proposal was reviewed at CALS APC on 10/19/21. The committee offers it support of the proposal.

Dana Outhouse (douthouse) (11/10/21 8:37 am): The Wisconsin School of Business Dean's Office reviewed the proposal and offers its support of the proposal.

Key: 1173