Cover Sheet: Request 15278

Add optional courses Statistics B.S.

Info

Process	Major Curriculum|Modify|Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Demetris Athienitis athienit@ufl.edu
Created	9/21/2020 3:42:22 PM
Updated	11/19/2020 10:00:18 AM
Description of request	With the creation of three new from the Department of Statistics, we are requesting that these courses be added as "options" to the current pool of courses for Programming Electives and Statistics Elective. None of these courses will be required but merely added as options. *Note: MAD 2502 was removed from consideration as one of the proposed additions to the pool

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CLAS - Statistics 16480000	Michael Daniels		9/21/2020
No document changes					
College	Approved	CLAS - College of Liberal Arts and Sciences	Joseph Spillane		10/27/2020
No document changes					
Associate Provost for Undergraduate Affairs	Approved	PV - Associate Provost for Undergraduate Affairs	Casey Griffith		11/18/2020
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			11/18/2020
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
Academic Assessment Committee Notified					
No document changes					
College Notified					
No document changes					

Major|Modify_Curriculum for request 15278

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Submitter: Demetris Athienitis athienit@ufl.edu
Created: 11/19/2020 9:33:21 AM
Form version: 2

Responses

Major Name Statistics
Major Code STA
Degree Program Name Statistics B.S.
Undergraduate Innovation Academy Program No
Effective Term Earliest Available
Effective Year Earliest Available
Current Curriculum for Major Current curriculum can be found on current catalog entry:
https://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/STA_BA_BS/STA_BS/
Proposed Curriculum Changes New courses have been developed and are to be added in the pool of courses
(1) Add STA 3100 as option for Programming Elective - also true for STA B.A.
(2) Add STA 4241 and STA 4273 as options for Statistics Electives - also true for STA B.A.
UF Online Curriculum Change No
Pedagogical Rationale/Justification Three (3) new courses have been developed, from Department of Statistics, STA 3100, STA 4241, STA 4273;
providing additional optional courses for students.
Impact on Enrollment, Retention, Graduation None. The additional three (3) new courses are purely optional, added to the pool of possible
courses.
Assessment Data Review Student exit survey responses for graduating seniors #1 recommendation, for the past 6 years,
has been for larger offering of more programming and computational courses.
Academic Learning Compact and Academic Assessment Plan (1) STA 3100 introduces SLO 1, and 2.
(2) STA 4241 and 4273 reinforces SLO 1, 2, and 3.
Catalog Copy Yes

Bachelor of Science

Statistics, the science of learning from data, has become increasingly important as scientists, businesses, and governments rely more and more on data-driven decision-making. Statisticians work in many areas, including business, economics, medicine, epidemiology, agriculture, environmental sciences, sports, and all aspects of government. With the increasing digitization and networking of society, data have become ever more ubiquitous, further expanding the demand for statisticians and their expertise in the collection and analysis of data.

To graduate with this major, students must complete all university, college, and major requirements.

Statistics majors learn how to design studies that effectively address the purpose of a research project and how to properly analyze the data collected in such studies. Core courses cover statistical methods applicable in a wide variety of settings (e.g., regression and design of experiments) as well as the conceptual and mathematical foundations of statistics. Other courses explore specific data types often encountered in practical settings. Statistics majors have the option to minor in actuarial science, a profession involving the statistical and financial practices of insurance.

Students who wish to major in statistics must consult a department advisor early in their programs.

Coursework for the Major

The College of Liberal Arts and Sciences offers the Bachelor of Science and the Bachelor of Arts in statistics.

Bachelor of Arts

Intended for students who wish to pursue a career in the field of statistics or to teach statistics at the secondary-school level, but who do not currently contemplate graduate study in statistics.

Bachelor of Science

Intended for students who wish to pursue graduate study in statistics or a closely related area, and for other strong students with a deeper interest in the mathematical foundations of statistics.

Required Coursework for Both Degrees

The B.A. in statistics requires a minimum of 42 credits in statistics and related coursework. The B.S. in statistics requires a minimum of 49 credits in statistics and related coursework. It is important that the prerequisites of each class are met before the class is attempted.

Students must receive minimum grades of C within two attempts (including withdrawals) in every required core course and in every course counted toward the 12 credit elective requirement, with the exception of MAC 2312 and MAC 2313 where students must receive a minimum grade of B-. Students cannot retake core or statistics elective courses after earning a minimum grade of C, with the exception of MAC 2312 and MAC 2313 , in which students must receive a minimum grade of B-. A minimum GPA of 2.0 must be achieved on all attempts of core and major elective courses and 2.67 on MAC 2312 and MAC 2313 . The grades from all attempts to satisfy core requirements will be used to compute the minimum GPA. A minimum of 18 credits of major coursework must be taken at UF, including a minimum of 12 credits of core coursework.

Course List

Code	Title	Credits
Core		
Select one:		12
MAC 2311	Analytic Geometry and Calculus 1	
‍& MAC 2312	‍and Analytic Geometry and Calculus 2	
‍& MAC 2313	‍and Analytic Geometry and Calculus 3	
MAC 3472	Honors Calculus 1	
‍& MAC 3473	‍and Honors Calculus 2	
‍& MAC 3474	‍and Honors Calculus 3	
STA 4210	Regression Analysis [1]	3
STA 4211	Design of Experiments [1,2,4]	3
STA 4321	Introduction to Probability [1]	3
STA 4322	Introduction to Statistics Theory [1,3]	3
STA 4504	Categorical Data Analysis	3

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Statistics Electives		
Select two:		6
STA 4222	Sample Survey Design	
STA 4241	Statistical Learning in R	
STA 4273	Statistical Computing in R	
STA 4502	Nonparametric Statistical Methods	
STA 4702	Multivariate Statistical Methods	
STA 4712	Introduction to Survival Analysis	
STA 4821	Stochastic Processes	
STA 4853	Introduction to Time Series and Forecasting	
STA 4930	Special Topics	
Total Credits		33

1 The course sequences, STA 4210 - STA 4211 and STA 4321 - STA 4322 should be completed by the end of the junior year.

2 Prerequisite: STA 4210 .

3 Prerequisite: STA 4321 .

4 Students pursuing the major must enroll in the restricted to STA majors only section of STA 4211 .

Bachelor of Science

The B.S. is intended for students who wish to pursue graduate study in statistics or a closely related area, and for other strong students with a deeper interest in the mathematical foundations of statistics.

Additional Required Coursework for B.S.

Course List

Code	Title	Credits
Core		
MAS 4105	Linear Algebra 1 [1]	4
MHF 3202	Sets and Logic	3
Programming Elective		
Select one of the following:		3
COP 2800	Computer Programming Using JAVA	
COP 3275	Computer Programming Using C	
COP 3502	Programming Fundamentals 1	
STA 3100	Programming with Data	
Math and Science Electives		
Select two of the following:		6
MAA 4211	Advanced Calculus 1	
MAA 4212	Advanced Calculus 2	
MAA 4402	Functions of a Complex Variable	
MAD 4401	Introduction to Numerical Analysis	
MHF 4102	Elements of Set Theory	
Total Credits		16

1 Prerequisite: MHF 3202 .

Critical Tracking records each student's progress in courses that are required for progress toward each major. Please note the critical-tracking requirements below on a per-semester basis.

For degree requirements outside of the major, refer to CLAS Degree Requirements: Structure of a CLAS Degree .

Equivalent critical-tracking courses as determined by the State of Florida Common Course Prerequisites may be used for transfer students.

Semester 1

- 2.0 UF GPA required

Semester 2

- Complete MAC 1147 or higher-level calculus
- 2.0 UF GPA required

Semester 3

- Complete MAC 2311
- 2.0 UF GPA required

Semester 4

- Complete MAC 2312 with a 2.5 critical-tracking GPA
- 2.0 UF GPA required

Semester 5

- Complete MAC 2313 and a programming elective or any STA course with a 2.5 critical-tracking GPA
- 2.0 UF GPA required

Semester 6

- Complete Programming elective and MHF 3202 and STA 4210 and STA 4321
- 2.0 UF GPA required

Semester 7

- Complete MAS 4105 and STA 4211 and STA 4322
- 2.0 UF GPA required

Semester 8

- Complete STA 4504 and all remaining Statistics and Math and Sciences electives
- 2.0 UF GPA required

Students are expected to complete the writing requirement while in the process of taking the courses below. Students are also expected to complete the general education international (GE-N) and diversity (GE-D) requirements concurrently with another general education requirement (typically, GE-C, H, or S).

MAC 2312 , MAC 2313 , MAS 4105 , and the math elective count towards 3000 level or above electives outside of the major.

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold. These courses must be completed by the terms as listed above in the Critical Tracking criteria.

This semester plan represents an example progression through the major. Actual courses and course order may be different depending on the student's academic record and scheduling availability of courses. Prerequisites still apply.

Plan of Study Grid

Semester One		**Credits**
MAC 2311	Analytic Geometry and Calculus 1 (**Critical Tracking** ; State Core Gen Ed Mathematics)	4
State Core Gen Ed Biological or Physical Sciences		3
State Core Gen Ed Composition	; Writing Requirement	3
Gen Ed Social and Behavioral Sciences		3
Science laboratory (Gen Ed Biological or Physical Sciences)		1
	Credits	14
Semester Two		
MAC 2312	Analytic Geometry and Calculus 2 (**Critical Tracking** ; Gen Ed Mathematics)	4
Quest 1 (Gen Ed Humanities)		3
State Core Gen Ed Humanities		3
State Core Gen Ed Social and Behavioral Sciences		3
Gen Ed Biological or Physical Sciences (area **not** taken in semester one)		3
	Credits	16
Semester Three		
MAC 2313	Analytic Geometry and Calculus 3 (**Critical Tracking** ; Gen Ed Mathematics)	4
MHF 3202	Sets and Logic (**Critical Tracking**)	3
Select one:		3
STA 2023	Introduction to Statistics 1 (**Critical Tracking**)	
STA 3032	Engineering Statistics (**Critical Tracking** ; Gen Ed Mathematics)	
Foreign language		3-5

	Credits	13-15
	Semester Four	
MAS 4105	Linear Algebra 1 (**Critical Tracking**)	4
Elective (needed if placed out of language with SAT II)		3
Foreign language		3-5
Gen Ed Humanities		3
Programming elective (**Critical Tracking**)		3
	Credits	16-18
	Semester Five	
STA 4210	Regression Analysis (**Critical Tracking** ; Gen Ed Mathematics)	3
STA 4321	Introduction to Probability (**Critical Tracking** ; Gen Ed Mathematics)	3
Foreign language if 4-3-3 option		3
Gen Ed Physical Sciences		3
Gen Ed Social and Behavioral Sciences		3
	Credits	15
	Semester Six	
STA 4211	Design of Experiments (**Critical Tracking**)	3
STA 4322	Introduction to Statistics Theory (**Critical Tracking** ; Gen Ed Mathematics)	3
STA 4504	Categorical Data Analysis (**Critical Tracking**)	3
Gen Ed Biological Sciences		3
Gen Ed Composition; Writing Requirement		3
	Credits	15
	Semester Seven	
STA elective (**Critical Tracking**)		3
Elective (3000 level or above, not in major)		3
Electives		10
	Credits	16
	Semester Eight	
Math science electives (**Critical Tracking**)		6
STA elective (**Critical Tracking**)		3
Electives		6
	Credits	15
	Total Credits	120

The statistics major enables students to achieve proficiency in the fundamentals of statistical reasoning. Through study of both theoretical and applied statistics and through data analysis projects, students will gain knowledge in problem solving, statistical applications and data-based inferences. Emphasis is on developing the ability to approach real world problems and through the use of statistical methods to be able to analyze and to draw valid scientific inferences.

Before Graduating Students Must

- Complete an exam on the fundamentals of statistics, which will be 5% of your grade in STA 4211 .
- Complete a data analysis project, which will be 10% of your grade in STA 4211 .
- Complete requirements for the baccalaureate degree, as determined by faculty.

Students in the Major Will Learn to

Student Learning Outcomes (SLOs)

Content

1. Identify, define and describe concepts and issues in statistics, including those involved in designing a statistical study, in statistical estimation and in tests of hypotheses.

Critical Thinking

2. Identify sources of variability in a given problem setting and formulate an appropriate statistical analysis.

Communication

3. Clearly and effectively present ideas in speech and in writing concerning statistical issues and analyses of data.

Curriculum Map

I = Introduced; R = Reinforced; A = Assessed

Courses	SLO 1	SLO 2	SLO 3
STA 3100	I	I	
STA 4210	I	I	I
STA 4211	A	A	A
STA 4222	R	R	R
STA 4241	R	R	R
STA 4273	R	R	R
STA 4321	I		
STA 4322	I		
STA 4502	R	R	R
STA 4504	R	R	R
STA 4702	R	R	R
STA 4712	R	R	R
STA 4853	R	R	R

Assessment Types

- Exams
- Projects
- Written and oral presentations