FLORIDA ATLANTIC UNIVERSITY

NEW/CHANGE PROGRAM REQUEST
Graduate Programs

UGPC Approval _____
UFS Approval _____
Banner _____
Catalog _____

Department Mathematical Sciences

College Science

Program Name
BS to MS Combined Program in Mathematics

☐ **New Program***

☑ **Change Program***

Effective Date
(TERM & YEAR)
Fall 2024

Please explain the requested change(s) and offer rationale below or on an attachment.

Remove the GRE admission requirement, as this is a trend at FAU and many other universities which will help increase the number of applicants and reduce the cost for applicants. The proposed change is needed to reflect the program change of the MS in Mathematics, which has been proposed to remove GRE admission requirement.

*All new programs and changes to existing programs must be accompanied by a catalog entry showing the new or proposed changes.

Faculty Contact/Email/Phone
Hongwei Long, hlong@fau.edu, 561-297-0810

Consult and list departments that may be affected by the change(s) and attach documentation
NA

Approved by	***Date***
Department Chair	10/17/2023
College Curriculum Chair	10/23/2023
College Dean	10/23/2023
UGPC Chair	Nov 13, 2023
UGC Chair	Nov 13, 2023
Graduate College Dean	Nov 13, 2023
UFS President	
Provost	

Robert W. Stackman Jr. (Nov 13, 2023 14:13 EST)

Email this form and attachments to UGPC@fau.edu 10 days before the UGPC meeting.

COMBINED PROGRAMS

MATHEMATICS
BACHELOR OF SCIENCE (B.S.) TO MASTER OF SCIENCE (M.S.) COMBINED PROGRAM

(Minimum of 150 credits required)

This accelerated, five-year program leads to both Bachelor of Science (B.S.) and a Master of Science (M.S.) degrees. The combined degree program is 150 credits: 120 credits for the undergraduate degree and 30 for the master's degree, with a maximum of 12 credits of graduate coursework used to satisfy both degrees. Once admitted into the program, students shall follow the suggested course sequence. To allow for maximum flexibility in career aspirations, students may select from five concentrations.

- Pure Mathematics
- Applied Analysis
- Biostatistics
- Cryptology and Information Security
- Financial Mathematics

Once admitted into the program, students shall follow the suggested course sequence within a single concentration. The baccalaureate degree will be conferred before the master's degree.

Students must maintain a GPA of 3.0 in upper-division and graduate courses. Students interested in the combined B.S./M.S. should consult with the graduate advisor before taking upper-division mathematics coursework to ensure that their coursework will apply toward the combined degree. Students must ~~take the GRE and~~ apply for admission to candidacy by the end of their junior year.

Prerequisite Coursework for Transfer Students

Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the Intellectual Foundations Program) and requirements for the college and major. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also

complete the prerequisite courses for their major as outlined in the *Transition Guides* .

All courses not approved by the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

B.S. Curriculum
Students must complete the requirements of the B.S. degree in Mathematics. Twelve graduate credits will count toward both B.S. and M.S. degree requirements. Students must select 12 credits from the graduate courses within a single concentration.

Pure Mathematics Concentration	
Choose four courses from the following list.	
Introductory Analysis 1	MAA 5228
Introductory Analysis 2	MAA 5229
Linear Algebra	MAS 5145
Introductory Abstract Algebra 1	MAS 5311
Introductory Abstract Algebra 2	MAS 5312

Applied Analysis Concentration	
Choose four courses from Lists A and B, with at least one from List A.	
List A	
Introductory Analysis 1	MAA 5228
Linear Algebra	MAS 5145
Computational Mathematics	MAD 6403
Numerical Analysis	MAD 6407
Ordinary Differential Equations	MAP 6336
Partial Differential Equations	MAP 6345
List B	
Introduction to Data Science	CAP 5768
Multivariable Analysis	MAA 5105
Introductory Analysis 2	MAA 5229
Real Analysis	MAA 6306
Complex Analysis 1	MAA 6406
Introduction to Dynamical Systems and Chaos 1	MAP 6211
General Topology 1	MTG 6313
Regression Analysis	STA 6236

Mathematical Statistics	STA 6326
Mathematical Probability	STA 6444
Applied Time Series Analysis	STA 6857

Biostatistics Concentration
Choose four courses from Lists A and B, with at least one from List A.

List A	
Linear Algebra	MAS 5145
Biostatistics	STA 5195
Mathematical Statistics	STA 6326
Mathematical Probability	STA 6444
List B	
Introduction to Data Science	CAP 5768
Multivariable Analysis	MAA 5105
Numerical Analysis	MAD 6407
Linear Algebra	MAS 5145
Statistical Computing	STA 6106
Survival Analysis	STA 6177
Biostatistics - Longitudinal Data Analysis	STA 6197
Applied Statistical Methods	STA 6207
Regression Analysis	STA 6236
Topics in Probability and Statistics (Stochastic Calculus)	STA 6446
Applied Time Series Analysis	STA 6857

Cryptology and Information Security Concentration
Choose four courses from Lists A and B, with at least one from List A.

List A	
Introduction to Cryptology and Information Security	MAD 5474
Cryptanalysis	MAD 6478
Coding Theory	MAD 6607
Linear Algebra	MAS 5145
List B	
Introductory Analysis 1	MAA 5228
Introductory Analysis 2	MAA 5229
Enumerative Combinatorics	MAD 6206
Graph Theory	MAD 6307
Computational Mathematics	MAD 6403
Cryptography	MAD 6477
Introductory Abstract Algebra 1	MAS 5311

Introductory Abstract Algebra 2	MAS 5312
Algebraic Number Theory	MAS 6215
Algebraic Curves	MAS 6315
Commutative Algebra	MAS 6333
Topics in Algebra	MAS 6396
Special Topics	MAS 6933
Mathematical Statistics	STA 6326
Mathematical Probability	STA 6444

Financial Mathematics Concentration
Choose four courses from Lists A and B, with at least one from List A.

List A	
Introductory Analysis 1	MAA 5228
Linear Algebra	MAS 5145
Mathematical Statistics	STA 6236
Mathematical Probability	STA 6444
List B	
Multivariable Analysis	MAA 5105
Introductory Analysis 2	MAA 5229
Statistical Computing	STA 6106
Applied Statistical Methods	STA 6207
Regression Analysis	STA 6236
Topics in Probability and Statistics	STA 6446
Applied Time Series Analysis	STA 6857
Directed Independent Study	STA 6907

The 12 graduate credits may be counted as upper-division math electives or as a substitute for a required course as follows:

MAA 5228 may be substituted for MAS 3156
MAA 6406 may be substituted for MAA 4402
MAS 5145 may be substituted for MAS 4107
MAS 5311 may be substituted for MAS 4301

M.S. Curriculum
Students complete all requirements for the M.S. degree with major in Mathematics.