MATHMATICS MAJOR (2018-2019)

Charles E. Schmidt College of Science
Bachelor of Arts (BA) or Bachelor of Science (BS)

FOUNDATIONS OF WRITTEN COMMUNICATION
(6 credit hours required – Writing Across the Curriculum - WAC)
Grade of “C” or higher is required in each course

__ ENC 1101 ...... College Writing I (Required)
__ ENC 1102 ...... College Writing II *

THE FOLLOWING COURSES BELOW MAY BE SUBSTITUTED FOR ENC 1102:

English Department
__ ENC 1930+ ...... University Honors Seminar in Writing (Permmit Only)
__ ENC 1939+ ...... Special Topic: College Writing
__ ENC 1930+ ...... Honors Composition for Science

Anthropology Department
__ ANT 1471+ ..... Cultural Difference in a Globalized Society

History Department
__ HIS 2050+ ...... Writing History

Note: Students must take four Writing-Across-the-Curriculum (WAC) courses, two of which must be taken from Foundations of Written Communication.

FOUNDATIONS OF SCIENCE & THE NATURAL WORLD
(6 credit hours required - One of the courses must have a lab)
Student must take 2 of the following courses; 1 must be from group A.
The second course may be from group A or group B.

Group A
-----For Non-Science Majors-----

Biology Department
__ BSC 1005 & L
__ Life Science (3 cr. incl. Lab)
__ BSC 2085 & L
__ Anatomy & Physiology 1 (4 cr. incl. Lab) *

Chemistry Department
__ CHM 1020C
__ Contemporary Chemical Issues

Geosciences Department
__ ESC 2000
__ The Blue Planet (online)
__ EVR 1001
__ Env. Science and Sustainability

Physics Department
__ AST 2002
__ Intro. to Astronomy (P/F)

-----For Science Majors-----

Biology Department
__ BSC 1010 & L & D
__ Biological Principles
__ (4 cr. incl. Lab & Dis)

Chemistry Department (see note)
__ CHM 2045 & L
__ General Chemistry 1
__ (4 cr. incl. Lab) *

Physics Department (see note)
__ PHY 2048 & L
__ General Physics 1
__ (5 credits incl. Lab) **
__ PHY 2053
__ College Physics 1 (4 credits)

Note: students seeking BS degree must select either
__ CHM 2045 & Lab or PHY 2048 & Lab

FOUNDATIONS OF MATHEMATICS & QUANTITATIVE REASONING
(6 credit hours required – Grade of “C” or higher is required)
Student must take 2 of the following courses; 1 must be from group A.
The second course may be from group A or group B.

Pretest is required before taking your first Math course

Group A
__ MAC 1105 ...... College Algebra
__ MAC 2311 ...... Calc w/Analytic Geometry 1 (4 cr) (Required)
or any mathematics course for which one of the above courses is the direct prerequisite

Group B
__ MAC 1140...... Precalculus Algebra
__ MAC 1114...... Trigonometry
__ MAC 1147...... Precalculus Algebra & Trigonometry (5 credits)
__ MAC 2233...... Methods of Calculus
__ MAC 2312...... Calc w/Analytic Geometry 2 (4 cr) (Required)

FOUNDATIONS OF SOCIETY & HUMAN BEHAVIOR
(6 credit hours required)
Student must take 2 of the following courses; 1 must be from group A.
The second course may be from group A or group B.

Group A

History Department
__ AMH 2020 & D ...... United States History Since 1877 (P/F)

Anthropology Department
__ AMH 2010 & D ........ United States History to 1877

Economics Department
__ ECO 2013 ............ Macroeconomic Principles §

Political Science Department
__ POS 2041 ............ Government of the United States

Psychology Department
__ PSY 1012 ............ Introduction to Psychology

Sociology Department
__ SYG 1000 ............ Sociological Perspectives

Group B

History Department
__ AMH 2010 & D ...... United States History to 1877 (P/F)

Economics Department
__ ECO 2023 ............ Microeconomic Principles §
__ ECP 2002 ............ Contemporary Economic Issues

Exceptional Student Education Department
__ EEX 2091 ............ Disability and Society

Geosciences Department
__ EVR 2017 ............ Environment and Society

Languages, Linguistics, & Comparative Literature Department
__ LIN 2001 ............ Introduction to Language (online course)

Public Administration Department
__ PAD 2258 ............ Changing Environment of Soc., Bus., & Gov't

Sociology Department
__ SYG 2790 ............ Race, Class, Gender, and Sexuality
__ SYG 2101 ............ Social Problems

Urban & Regional Planning Department
__ URP 2051 ............ Designing the City
STUDENTS ASSUME RESPONSIBILITY FOR MEETING ALL GRADUATION REQUIREMENTS

Course selections should be made in consultation with an academic advisor.

Legend

+ - ENC 1101 is a prerequisite.
++ - Two Foundations of Written Communications classes are required before taking this course.
§ - Sophomore standing (30 credits earned) is a requirement to take this course.
* - Nursing majors are required to take this course in their first semester.
** - MAC 2311 is a prerequisite for this course. If a lab is needed, then take General Physics 1 Lab (PHY 2048 Lab).
*** - MAC 1105 and MAC 1114 are prerequisites for this course. If a lab is needed, then take General Physics 1 Lab (PHY 2048 Lab).
‡ - Co-requisite of College Algebra (MAC 1105) or a prerequisite of Introductory Chemistry (CHM 1025).
WAC - (WAC) Writing across the curriculum course.

§ Writing Across the Curriculum (WAC)/Gordon Rule
Students must attain grades of “C” or higher. 12 credits of writing (WAC) and 6 credits of mathematics are required.

Please note:
Students must take four (4) WAC courses. Two (2) courses are to be taken from Foundations of Written Communication. We strongly recommend the two additional WAC courses come from these courses: PHI 2010, WOH 2012, LIT 2010, LIT 2030, LIT 2040 and LIT 2070. See advisor for additional details.

(D) = Discussion, (L) = Lab
Courses indicating a (D) or (L) are linked with a lecture, a lab, and/or a discussion. If you select one of these courses, you must register for the lecture, lab, and/or discussion. You must attend the lecture, lab, and/or discussion.

Elective Credits
The number of elective credits allowed varies by major. Please consult with an academic advisor to determine the number of elective credits required for your major. Certain majors do not allow any electives.

P/F
Certain designated undergraduate courses may be taken for a letter grade of pass (P) or fail (F). Students must indicate the grade option when registering; otherwise, a letter grade will be given. The maximum credit available to any student on the P/F option is one course per term with a maximum of 12 credits during a student’s entire course of study. This option is not available for courses in the student’s major, for students on probation, or for Engineering majors.

Go to MyFAU to:
Check e-mail
See FAU Announcements
FAU Self-Service:
Course schedules
Registration (drop/add classes) and withdrawals
Student records and financial aid
Tuition payments
The University Course Catalog

http://myfau.fau.edu
FOREIGN LANGUAGE (4 - 8 credits, 1 or more courses in the same language) - REQUIRED FOR MAJOR

Students with more than one year of a foreign language in high school should enroll in the second half of the beginners’ foreign language class (ARA/CHI/FRE/GER/HBR/ITA/JPN/LAT/SPN 1121) or a higher level course. Proficiency for a first-level course can be earned by successfully completing a second-level course. For questions related to this requirement, consult an academic advisor. CLEP exam credits meet this requirement: see the catalog.

NOTE: Native Speakers of a foreign language must consult the Languages, Linguistics, and Comparative Literature Department regarding this requirement.

NOTE: Honors Seminars SHALL BE ACCEPTED AS MEETING THE WAC/GRW REQUIREMENT. See the University Advising Services Office for details.

<table>
<thead>
<tr>
<th>BA</th>
<th>BS</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 credits</td>
<td>53 credits</td>
</tr>
<tr>
<td>21 credits</td>
<td>27 credits</td>
</tr>
<tr>
<td>15 credits</td>
<td>18 credits</td>
</tr>
<tr>
<td>18 credits</td>
<td>12 credits</td>
</tr>
<tr>
<td>16 credits</td>
<td>12 credits</td>
</tr>
<tr>
<td>120 CREDITS</td>
<td>120 CREDITS</td>
</tr>
</tbody>
</table>

NOTE: See the catalog for specific requirements, course descriptions and additional information. The requirements for some Intellectual Foundations Program (IFP) courses & other courses may be satisfied by passing the appropriate AP or CLEP exam. Check with your advisor and college. The Department of Mathematical Sciences accepts passing scores for Calculus AB and Calculus BC.

The Department of Mathematical Sciences has the following requirements:

1. At least 15 credits of 3000 level or above (upper division) Mathematics core and elective requirements must be completed at FAU;
2. Any course work in the major field transferred from another institution must be approved by the math department;
3. No major course may be taken pass/fail;
4. The maximum amount of credit which may be earned through co-op is 10 credits; Mathematics Department does not allow these credits to count as major courses;
5. The Mathematics Department requires a minimum 2.2 GPA overall for (BA) or 2.5 GPA overall for (BS) in all Mathematics courses taken at FAU.
MAJOR COURSES, COLLEGE REQUIREMENTS and ELECTIVES

MATHEMATICS (33-42 credits beyond the Calculus sequence including the major core)

BACHELOR OF ARTS (BA) DEGREE

Major Core (21 credits, 7 courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAD 2104</td>
<td>Discrete Mathematics</td>
<td>MAC 1105 or higher is a prerequisite</td>
</tr>
<tr>
<td>MAD 2502</td>
<td>Introduction to Computational Math</td>
<td>MAC 2311 co-requisite</td>
</tr>
<tr>
<td>MAS 2103</td>
<td>Matrix Theory or Linear Algebra</td>
<td>MAC 2311 is a prerequisite</td>
</tr>
<tr>
<td>MAS 4301</td>
<td>Modern Algebra</td>
<td>MAD 2104 is a prerequisite</td>
</tr>
<tr>
<td>MAA 4200</td>
<td>Modern Analysis</td>
<td>MAC 2313 &amp; MAD 2104 are prerequisites</td>
</tr>
<tr>
<td>MAT 4937</td>
<td>Mathematical Problem Solving</td>
<td>MAD 2104, MAS 2103, MAC 2312 &amp; MAC 2502 are prereqs</td>
</tr>
<tr>
<td>STA 4442</td>
<td>Probability and Statistics</td>
<td>MAC 2313 is a prerequisite</td>
</tr>
</tbody>
</table>

Major Electives (15 credits minimum)

CHOOSE 6 COURSES, CONSULT WITH ADVISOR FOR APPROVAL IN SELECTION:

Any 3000 level or higher Mathematics course, listed in the catalog, not previously taken, EXCEPT: STA 3163, 3949, 4032, 4821 & MAT 3949. Only one pair of (MAP 2302, MAP 3305) or (MAP 4303, MAP 4306) may be counted as part of the elective requirements for the major.

BACHELOR OF SCIENCE (BS) DEGREE

Major Core (21 credits, 7 courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAD 2104</td>
<td>Discrete Mathematics</td>
<td>MAC 1105 or higher is a prerequisite</td>
</tr>
<tr>
<td>MAD 2502</td>
<td>Introduction to Computational Math</td>
<td>MAC 2311 co-requisite</td>
</tr>
<tr>
<td>MAS 2103</td>
<td>Matrix Theory or Linear Algebra</td>
<td>MAC 2311 is a prerequisite</td>
</tr>
<tr>
<td>MAS 4301</td>
<td>Modern Algebra</td>
<td>MAD 2104 is a prerequisite</td>
</tr>
<tr>
<td>MAA 4200</td>
<td>Modern Analysis</td>
<td>MAC 2313 &amp; MAD 2104 are prerequisites</td>
</tr>
<tr>
<td>MAT 4937</td>
<td>Mathematical Problem Solving</td>
<td>MAD 2104, MAS 2103, MAC 2312 &amp; MAC 2502 are prereqs</td>
</tr>
<tr>
<td>STA 4442</td>
<td>Probability and Statistics</td>
<td>MAC 2313 is a prerequisite</td>
</tr>
<tr>
<td>MAA 4402</td>
<td>Introductory Complex Analysis</td>
<td>MAC 2313 is a prerequisite</td>
</tr>
<tr>
<td>MAP 2302</td>
<td>Differential Equations I (3 credits)</td>
<td>prerequisite MAC 2254 or MAC 2312</td>
</tr>
<tr>
<td>MAS 4107</td>
<td>Linear Algebra II</td>
<td>MAS 2103 or Linear Algebra I is a prerequisite,</td>
</tr>
<tr>
<td>Science</td>
<td>CHM 2045 &amp; lab or PHY 2048 &amp; lab (must select one course)</td>
<td></td>
</tr>
</tbody>
</table>

Major Electives (15 credits minimum)

CHOOSE 8 COURSES FROM THE FOLLOWING IN CONSULTATION WITH YOUR ADVISOR:

Any 3000 level or higher Mathematics course, listed in the catalog, not previously taken, EXCEPT: STA 3163, 3949, 4032, 4821, MAP 3305, and MAT 3949. Only one pair of (MAP 2302, MAP 3305) or (MAP 4303, MAP 4306) may be counted as part of the elective requirements for the major.

FREE ELECTIVES (22 – 24 credits for the BS, 34 for the BA)

Free electives are courses in any college, any department, including Mathematics (22 – 34 credits minimum), needed to meet the 120 credits required for graduation. Recommend COP 2220 – Programming in C.

SPECIALIZATIONS WITHIN MATHEMATICS

CHECK WITH THE MATHEMATICS DEPARTMENT FOR SPECIALIZATION AREAS AND COURSES, INCLUDING:

- ACTUARIAL SCIENCE
- COMBINATORICS
- APPLIED MATHEMATICS
- PURE MATHEMATICS
- STATISTICS (MINOR)
- CRYPTOGRAPHY
- DYNAMICAL SYSTEMS