MATHMATICS MAJOR (2019-2020)

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 (Permit Only)
___ ENC 1939+ ...... Special Topic: College Writing

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
Biology 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

Group B
-----For Non-Science Majors-----
Anthropology Department
___ ANT 2511 & L
Intro to Biological Anthropology (4 cr. Incl. Lab)

Chemistry Department
___ CHM 2032 & L
Chem. for Health Sciences (4 credits including Lab)
___ CHM 2083
Chemistry in Modern Life (P/F)

Engineering Department
___ ETG 2831
Nature: Inter. of Sci., Eng., & the Humanities

Geosciences Department
___ GES 1100
Intro. to Physical Geol (4 cr. incl. Lab)
___ GES 2000
Physical Geol. (4 cr. incl. Lab)
___ GES 2100
History of Earth and Life
___ GES 2101 & D
Weather and Climate

Physics Department
___ PSC 2121
Physical Science

-----For Science Majors-----
Biology Department
___ BSC 1011 & L & D
Biodiversity (4 cr. incl Lab & Dis)

Economics Department
___ MAC 1105 ....... College Algebra
___ MAC 2311 ...... Calc. w/Analytic Geometry 1 (4 cr) (Required)

Psychology Department
___ PSY 1012 ............ Introduction to Psychology

Sociology Department
___ SYG 1000 ............ Sociological Perspectives

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

Anthropology Department
___ ANT 2000 & D ........ Introduction to Anthropology

Geosciences Department
___ AMH 2010 & D ........ United States History to 1877
___ AMH 2020 & D ........ United States History Since 1877

Economics Department
___ ECO 2023 ............ Microeconomic Principles §
___ ECO 2033 ............ Macroeconomic Principles §

Public Administration Department
___ PAD 2258 .......... Changing Environment of Soc., Bus., & Gov’t

Sociology Department
___ SYG 1000 ............ Sociological Perspectives

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

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

Group B

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)

Group B
___ MAC 1140 ...... Precalculus Algebra
___ MAC 1114 ...... Trigonometry
___ MAC 1147 ...... Precalculus Algebra & Trigonometry (5 credits)
___ MAC 2210 ...... Intro Calculus w/Applications (4 credits) (Permit Only)
___ MAC 2233 ...... Methods of Calculus
___ MAC 2312 ...... Calc. w/Analytic Geometry 2 (4 cr.) (Required)

Charles E. Schmidt College of Science
Bachelor of Arts (BA) or Bachelor of Science (BS)
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 preferred 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:
https://myfau.fau.edu/
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
**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>
<th>Intellectual Foundations Program w/Foreign Lang (math not included)</th>
</tr>
</thead>
<tbody>
<tr>
<td>34 - 38 cr.</td>
<td>35 - 40 cr.</td>
<td>Major Core</td>
</tr>
<tr>
<td>33 cr.</td>
<td>41 - 44 cr.</td>
<td>Math Electives</td>
</tr>
<tr>
<td>15 cr.</td>
<td>15 cr.</td>
<td>Upper Division Restricted Free Electives</td>
</tr>
<tr>
<td>18 cr.</td>
<td>12 cr.</td>
<td>Free Electives</td>
</tr>
<tr>
<td>22 - 26 cr.</td>
<td>9 - 17 cr.</td>
<td>TOTAL</td>
</tr>
<tr>
<td>120 Credits</td>
<td>120 Credits</td>
<td>TOTAL</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

#### BACHELOR OF ARTS (BA) DEGREE

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAC 2311</td>
<td>Calculus w/ Analytic Geometry 1</td>
<td>4</td>
</tr>
<tr>
<td>MAC 2312</td>
<td>Calculus w/ Analytic Geometry 2</td>
<td>4</td>
</tr>
<tr>
<td>MAC 2313</td>
<td>Calculus w/ Analytic Geometry 3</td>
<td>4</td>
</tr>
<tr>
<td>MAD 2104</td>
<td>Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MAD 2502</td>
<td>Intro to Computational Math</td>
<td>3</td>
</tr>
<tr>
<td>MAS 2103</td>
<td>Matrix Theory or Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 4937</td>
<td>Mathematical Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MAA 4200</td>
<td>Modern Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MAS 4301</td>
<td>Modern Algebra</td>
<td>3</td>
</tr>
<tr>
<td>STA 4442</td>
<td>Probability and Statistics 1</td>
<td>3</td>
</tr>
</tbody>
</table>

Upper Division Math Electives (15cr.)

Upper-division mathematics electives: These electives must be chosen from courses offered by the Department of Mathematical Sciences and numbered 3000 or higher. The following courses may not be used as upper-division mathematics electives:

- STA 3163, STA 3173, STA 3949, MAT 3949, MAP 4945, or STA 4821

#### BACHELOR OF SCIENCE (BS) DEGREE

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 2045 &amp; Lab or PHY 2048 &amp; Lab</td>
<td>General Chemistry 1 &amp; Lab</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>General Physics 1 &amp; Lab</td>
<td>5</td>
</tr>
<tr>
<td>MAC 2311</td>
<td>Calculus w/ Analytic Geometry 1</td>
<td>4</td>
</tr>
<tr>
<td>MAC 2312</td>
<td>Calculus w/ Analytic Geometry 2</td>
<td>4</td>
</tr>
<tr>
<td>MAC 2313</td>
<td>Calculus w/ Analytic Geometry 3</td>
<td>3</td>
</tr>
<tr>
<td>MAD 2104</td>
<td>Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MAD 2502</td>
<td>Intro to Computational Math</td>
<td>3</td>
</tr>
<tr>
<td>MAP 2302</td>
<td>Differential Equations 1</td>
<td>3</td>
</tr>
<tr>
<td>MAS 2103</td>
<td>Matrix Theory or Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 4937</td>
<td>Mathematical Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MAS 4107</td>
<td>Linear Algebra 2</td>
<td>3</td>
</tr>
<tr>
<td>MAA 4200</td>
<td>Modern Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MAS 4301</td>
<td>Modern Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAA 4402</td>
<td>Introductory Complex Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STA 4442</td>
<td>Probability and Statistics 1</td>
<td>3</td>
</tr>
</tbody>
</table>

Upper Division Math Electives (15 cr.)

Upper-division mathematics electives: These electives must be chosen from courses offered by the Department of Mathematical Sciences and numbered 3000 or higher. The following courses may not be used as upper-division mathematics electives:

- STA 3163, STA 3173, STA 3949, MAT 3949, MAP 4945, or STA 4821

### 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