# Bachelor of Arts (BA) or Bachelor of Science (BS)
## MATHEMATICS MAJOR (2017-2018)

### 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+ ...... 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.

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology Department</td>
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</table>
  - 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)*

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

### FOUNDATIONS OF SCIENCE & 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.

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  - MAC 1105 ...... College Algebra
  - MAC 2311 ...... Calc. w/Analytic Geometry 1 (4 cr) *(Required)*
| Chemistry Department |
  - 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.

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  - AMH 2020 & D ...... United States History Since 1877 *(P/F)*
| Anthropology Department |
  - ANT 2000 & D ...... Introduction to Anthropology
| Economics Department |
  - ECO 2013 .......... Macroeconomic Principles §
| Political Science Department |
  - POS 2041 .......... Government of the United States
| Psychology Department |
  - PSY 1012 .......... Introduction to Psychology *(highly recommended)*
| Sociology Department |
  - SYG 1000 .......... Sociological Perspectives *(highly recommended)*

*Note: students seeking BS degree must select either CHM 2045 & Lab or PHY 2048 & Lab*
**STUDENTS ASSUME RESPONSIBILITY FOR MEETING ALL GRADUATION REQUIREMENTS**

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

### FOUNDATIONS IN GLOBAL CITIZENSHIP

(6 credit hours required)

- Student must choose two (2) courses from among the following:
  - Anthropology Department
    - **ANT 2410** ............. Culture and Society
  - Geosciences Department
    - **GEO 2000** ............. World Geography
  - Political Science Department
    - **INR 2002** ............. Introduction to World Politics
  - Languages, Linguistics, & Comparative Literature Department
    - **LAS 2000** ............. Intro to Caribbean & Latin American Studies
    - **LIN 2607** ............. Global Perspectives on Language *(online course)*
  - Sociology Department
    - **SYP 2450** ............. Global Society
  - Social Work Department
    - **SOW 1005** ............. Global Perspectives of Social Services
  - History Department
    - **WOH 2012 & D** ......... History of Civilization 1 *(WAC)* ++
    - **WOH 2022** ............. History of Civilization 2

### FOUNDATIONS OF HUMANITIES

(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**
- Visual Art & Art History Department
  - **ARH 2000** ............. Art Appreciation *(P/F)*
- Music Department
  - **EDF 2854** ............. Music Appreciation
- Philosophy Department
  - **PHI 2010 & D** ......... Introduction to Philosophy *(WAC)* ++
- Theatre & Dance Department
  - **THE 2000** ............. Theatre Appreciation

**Group B**
- Architecture Department
  - **ARC 2208** ............. Culture & Architecture
- Theatre & Dance Department
  - **DAN 2100** ............. Appreciation of Dance
- School of Communication & Multimedia Studies
  - **MUL 2010** ............. Film Appreciation
- Languages, Linguistics, & Comparative Literature Department
  - **LIT 2100** ............. Introduction to World Literature
- English Department
  - **LIT 2010** ............. Interpretation of Fiction *(WAC)* ++
  - **LIT 2030** ............. Interpretation of Poetry *(WAC)* ++
  - **LIT 2040** ............. Interpretation of Drama *(WAC)* ++
  - **LIT 2070** ............. Interpretation of Creative Nonfiction *(WAC)* ++

### 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)* 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. Please 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.
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>
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<tbody>
<tr>
<td>50 credits</td>
<td>53 credits</td>
<td>Intellectual Foundations Program and Foreign Language</td>
</tr>
<tr>
<td>21 credits</td>
<td>27 credits</td>
<td>Major Core (MAP 2302 &amp; MAS 4107 incl. for BS Degree)</td>
</tr>
<tr>
<td>15 credits</td>
<td>18 credits</td>
<td>Major Electives (Upper Division)</td>
</tr>
<tr>
<td>18 credits</td>
<td>12 credits</td>
<td>Upper Division Restricted Free Electives</td>
</tr>
<tr>
<td>16 credits</td>
<td>12 credits</td>
<td>Free Electives</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

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

BACHELOR OF ARTS (BA) DEGREE

Major Core (21 credits, 7 courses)

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<th>Description</th>
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<td>Discrete Mathematics</td>
<td>MAC 1105 or higher is a prerequisite</td>
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<tr>
<td>MAD 2502</td>
<td>Introduction to Computational Math</td>
<td>MAC 2311 co-requisite</td>
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<tr>
<td>MAS 2103</td>
<td>Matrix Theory or Linear Algebra</td>
<td>MAC 2311 is a prerequisite</td>
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<td>MAS 4301</td>
<td>Modern Algebra</td>
<td>MAD 2104 is a prerequisite</td>
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<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>
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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)

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<tr>
<td>MAA 4402</td>
<td>Introductory Complex Analysis</td>
<td>prerequisite MAC 2313</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 204S &amp; lab or PHY 2048 &amp; lab</td>
<td>(must select one course)</td>
</tr>
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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