# Mathematics Major (2014 – 2015)

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

## Foundations of Written Communication
(6 credits required)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENC 1101</td>
<td>College Writing I (REQUIRED)</td>
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<tr>
<td>ENC 1102*</td>
<td>College Writing II</td>
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**THE FOLLOWING COURSES CAN BE SUBSTITUTED FOR ENC 1102:**

- ANT 1471+ Cultural Difference in a Globalized Society
- ENC 1930+ University Honors Seminar in Writing (Permit Only)
- ENC 1939+ Special Topic: College Writing II
- HIS 2934+ Writing History
- NSP 1195+ Being Cared For: Reflections from Other Side of Bed

Students must take four (4) GRW Courses.

**Two (2) must be taken from Foundations of Written Communications.**

*Two additional courses are REQUIRED.*

## Foundations of Society & Human Behavior
(6 credits required, select 2 courses from 2 different departments)

### Anthropology Department
- ANT 2000 & D Introduction to Anthropology

### Economics Department
- ECO 2013# Macroeconomic Principles
- 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

### Political Science Department
- POS 2041 Government of the United States

### Psychology Department
- PSY 1012 General Psychology

### Public Administration Department
- PAD 2258 Changing Env. of Soc., Bus., & Government

### Sociology Department
- SYG 1000 Sociological Perspectives
- SYG 2010 Social Problems

### Urban & Regional Planning Department
- URP 2051 Designing the City

## Foundations of Science & The Natural World
(6/9 credits req, select 2 courses from 2 different departments)

**For B.S. Degree:**

### Geology Department
- ESC 2070 Blue Planet (On-Course)
- GLY 2010C Physical Geology (4 credits incl. Lab)
- GLY 2100 History of Earth and Life
- MET 2010 & D Weather and Climate

### Physics Department
- AST 2002 (P/F) Introduction to Astronomy
- PSC 2121 Physical Science

**or**

### Chemistry Department
- CHM 2045 General Chemistry I (4 credits incl. Lab)

## Foundations of Creative Expression
(6 credits req, select 2 courses from 2 different departments)

### Architecture Department
- ARH 2208 Culture & Architecture

### Biological Sciences Department
- MUI 2000 Life Science (3 credits incl. Lab)

### Chemistry Department
- CHM 1020C Contemporary Chemical Issues
- CHM 2083 (P/F) Chemistry in Modern Life (On-Course)

### Engineering Department
- ETG 2831 Nature: Int. of Sc., Eng. and the Humanities

### English & Language Department
- LIT 2040++ Interpretation of Drama (GRW)
- LIT 2070++ Interpretation of Creative Nonfiction (GRW)

### Fine Arts Department
- DAN 2100 Appreciation of Dance
- THE 2000 Appreciation of Theatre

### School of Communication & Multimedia Studies
- FIL 2000 & D Film Appreciation

### Visual Art & Art History Department
- ARH 2000 Art Appreciation

### Mathematics Major (2014 – 2015)

**(Grade of “C” or higher required. 12 credits required)**

**PRETEST IS REQUIRED BEFORE TAKING YOUR FIRST MATH CLASS**

**NOTE:** Students must take at least one course with the prefix MAC from the list below

- MAC 2311 Calculus with Analytic Geometry I (4 cr)
- MAC 2312 Calculus with Analytic Geometry II (4 cr)
- MAC 2313 Calculus with Analytic Geometry III (4 cr)

Calculus requires a solid background in Algebra and Trigonometry. If you are not ready to take Calculus the following courses will provide the necessary background:

- MAC 1015 College Algebra
- MAC 1141 Trigonometry
- MAC 1140 Precalculus Algebra
- MAC 1147 Precalculus Algebra & Trigonometry (5 cr)

## Foundations in Global Citizenship
(Select 2 courses from 2 different departments) (6 cr req.)

**At least 1 course must be Global Perspectives – (GP)**

### Anthropology Department
- ANT 2410 Culture and Society (GP)

### Curriculum, Culture, & Educational Inquiry Department
- EDF 2854 Educated Citizen in Global Context (GP)

### History Department
- AMH 2010 United States History to 1877
- AMH 2020 United States History Since 1877
- WOH 2012 History of Civilization I (GRW) (GP)
- WOH 2022 History of Civilization II (GP)

### Languages, Linguistics, & Comparative Literature Department
- LAS 2000 Intro to Caribbean & Latin American Studies
- LIN 2607 Global Perspectives on Language (GP)

### Philosophy Department
- PHI 2010 & D++ Introduction to Philosophy (GRW)

### Political Science Department
- INR 2002 Introduction to World Politics (GP)

### Sociology Department
- SYD 2790 Race, Class, Gender, and Sexuality
- SYP 2450 Global Society (GP)

### Social Work Department
- SOW 1005 Global Perspectives of Social Services (GP)

## Foundations of Mathematics & Quantitative Reasoning

(4 cr requ., select 2 courses from 2 different departments)

- MAC 2311 Calculus with Analytic Geometry I (4 cr)
- MAC 2312 Calculus with Analytic Geometry II (4 cr)
- MAC 2313 Calculus with Analytic Geometry III (4 cr)

Calculus requires a solid background in Algebra and Trigonometry. If you are not ready to take Calculus the following courses will provide the necessary background:

- MAC 1105 College Algebra
- MAC 1114 Trigonometry
- MAC 1140 Precalculus Algebra
- MAC 1147 Precalculus Algebra & Trigonometry (5 cr)
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 GORDON RULE WRITING REQUIREMENT. See the University Advising Services Office for details.

**HONORS NOTE:** Students can apply for the PSYCHOLOGY HONORS PROGRAM after completion of 60 credits, and before completion of 105 credits. Students must have a 3.2 overall & Psychology GPA to be admitted and retained in the Honors track.

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<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>
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<tr>
<td>21 credits</td>
<td>27 credits</td>
<td>Major Core (MAP 2302 &amp; MAS 4107 incl. for BS Degree)</td>
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<tr>
<td>15 credits</td>
<td>18 credits</td>
<td>Major Electives (Upper Division)</td>
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<tr>
<td>34 credits</td>
<td>22 – 24 credits</td>
<td>Free Electives</td>
</tr>
<tr>
<td><strong>120 CREDITS</strong></td>
<td><strong>120 CREDITS</strong></td>
<td><strong>TOTAL</strong></td>
</tr>
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**NOTE:** See the catalog for specific requirements, course descriptions and additional information. The requirements for some Intellectual Foundations Program (I.F.P.) 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)

Major Core (21 credits, 7 courses) - REQUIRED FOR BOTH BA and BS DEGREES
- MAD 2104 Discrete Mathematics - MAC 1105 or higher is a prerequisite
- MAD 2502 Introduction to Computational Math - MAC 2311 co-requisite
- MAS 2103 Matrix Theory or Linear Algebra - MAC 2311 is a prerequisite
- MAS 4301 Modern Algebra - MAD 2104 is a prerequisite
- MAA 4200 Modern Analysis - MAC 2313 & MAD 2104 are prerequisites
- MAT 4937 Mathematical Problem Solving - MAD 2104, MAS 2103, MAC 2312 & MAD 2502 are prereqs
- STA 4442 Probability and Statistics - MAC 2313 is a prerequisite

BACHELOR OF ARTS (BA) DEGREE
Thirty-six (36) credits beyond the Major Core and Major Electives

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
Forty-five (45) credits beyond the Major Core and Major Electives including the following:

- MAA 4402 Introductory Complex Analysis – prerequisite MAC 2313
- MAP 2302 Differential Equations I (3 credits) - prerequisite MAC 2254 or MAC 2312
- MAS 4107 Linear Algebra II - MAS 2103 or Linear Algebra I is a prerequisite

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