MATHEMATICS MAJOR (2020-2021)

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 1939 + ....Special Topic: College Writing
___ ENC 2452 + ....Honors Composition for Science

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
  (5 credits incl. Lab) **

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 Dean Department
___ ETG 2831
  Physical Geol. (4 cr. incl. Lab)
___ GLY 2010C
  Environment and Society
Geosciences Department
___ GLY 2010C
  Physical Geol. (4 cr. incl. Lab)
___ GLY 2100
  History of Earth and Life
___ MET 2010 & 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)

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 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)

Computer Science & Engineering Department
___ COP 1034C...... Computer Programming & Data Literacy for Everyone
(For Non-College Engineering & Computer Science majors)

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
___ ANT 2000 & D ...... Introduction to Anthropology (WAC)
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 Since 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 2010............... Social Problems
Urban & Regional Planning Department
___ URP 2051............... Designing the City

All courses are three (3) credits unless otherwise indicated. Course selections should be made in consultation with an academic advisor.

University Advising Services March 11, 2020
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
Curriculum, Culture & Education Department
____ EDF 2854 ............ Educated Citizen in Global Context
Geosciences Department
____ GEA 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
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

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.
*
- MAC 2311 is a prerequisite for this course.
**
- MAC 2233 is a prerequisite 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: ANT 2000, 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>
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</thead>
<tbody>
<tr>
<td>34 - 38 cr.</td>
<td>35 - 40 cr.</td>
</tr>
<tr>
<td>33 cr.</td>
<td>41 - 44 cr.</td>
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<tr>
<td>15 cr.</td>
<td>15 cr.</td>
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<tr>
<td>18 cr.</td>
<td>12 cr.</td>
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<tr>
<td>22 - 26 cr.</td>
<td>9 - 17 cr.</td>
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<tr>
<td>120 Credits</td>
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</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>
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</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>
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<tr>
<td>MAS 4301</td>
<td>Modern Algebra</td>
<td>3</td>
</tr>
<tr>
<td>STA 4442</td>
<td>Probability and Statistics</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>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>
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<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</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>
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<tr>
<td>MAS 4301</td>
<td>Modern Algebra</td>
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</tr>
<tr>
<td>MAA 4402</td>
<td>Introductory Complex Analysis</td>
<td>3</td>
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<td>STA 4442</td>
<td>Probability and Statistics</td>
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### 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