

FLORIDA ATLANTIC UNIVERSITY – INTELLECTUAL FOUNDATION PROGRAM 2022 – 2023

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

CHEMISTRY MAJOR (2022 – 2023)

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:

- ___ ENC 1939 + Special Topic: College Writing
- ___ 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 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.

Group A

- ___ MAC 1105 College Algebra (**BA major only**)
- ___ MAC 2311 Calc. w/Analytic Geometry 1 (4 cr.) (**Required for BS**)
or any mathematics course for which one of the above courses is the direct prerequisite

Group B

- ___ MAC 1147 Precalculus Algebra & Trigonometry (5 credits)
- ___ MAC 2210 Intro Calculus w/Applications (4 credits) (**Permit Only**)
- ___ MAC 2233 Methods of Calculus (**BA major only**)
- ___ MAC 2312 Calc. w/Analytic Geometry 2 (4 cr.) (**Required for BS**)

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

Group B

- | | |
|--|--|
| <ul style="list-style-type: none">___ BSC 1010 & L & D (BS major) Biological Principles (4 cr. Incl. Lab & Dis)___ CHM 2045 & L (BA/BS major) General Chemistry 1 (4 cr. Incl. Lab) ‡___ PHY 2048 & L (BA/BS major) General Physics 1 (5 credits incl. Lab) *___ PHY 2053 (BA major only) College Physics 1 (4 credits) | <ul style="list-style-type: none">___ BSC 1011 & L & D Biodiversity (4 cr. incl Lab & Dis) |
|--|--|

(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.

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

- ___ AMH 2020 & D United States History Since 1877 ◊
- ___ ANT 2000 & D Introduction to Anthropology (**WAC**)
- ___ ECO 2013 Macroeconomic Principles §
- ___ POS 2041 Government of the United States ◊
- ___ PSY 1012 Introduction to Psychology
(Highly Recommended)
- ___ SYG 1000 Sociological Perspectives
(Highly Recommended)

Group B

- ___ AMH 2010 & D United States History to 1877
- ___ CCJ 2002 Law, Crime & the Criminal Justice System ‡
- ___ DIG 2202 Digital Culture
- ___ ECO 2023 Microeconomic Principles §
- ___ ECP 2002 Contemporary Economic Issues
- ___ EEX 2091 Disability and Society
- ___ EVR 1110 Climate Change: The Human Dimensions
- ___ EVR 2017 Environment and Society
- ___ LIN 2001 Introduction to Language (**online course**)
- ___ PAD 2081 Risk Resilience and Rising Seas ‡
- ___ PAD 2258 Changing Environment of Soc., Bus., & Gov't
- ___ SYG 2010 Social Problems
- ___ URP 2051 Designing the City

FOUNDATIONS IN GLOBAL CITIZENSHIP

(6 credit hours required)

Student must choose two (2) courses from among the following:

- ___ ANT 2410.....Culture and Society
- ___ EDF 2854Educated Citizen in Global Context
- ___ GEA 2000.....World Geography
- ___ INR 2002.....Introduction to World Politics
- ___ JST 2452Global Jewish Communities Ω
- ___ LAS 2000.....Intro to Caribbean & Latin American Studies
- ___ LIN 2607Global Perspectives on Language
- ___ MUH 2121Music in Global Society Ω
- ___ POT 2000.....Global Political Theory
- ___ SYP 2450.....Global Society
- ___ SOW 1005Global Perspectives of Social Services
- ___ SOW 1130Race and Cultural Inclusion in Social Work
- ___ WOH 2012 & D.....History of Civilization 1 (WAC) ++
- ___ WOH 2022.....History of Civilization 2
- ___ WST 2351Gender and Climate Change

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

- ___ ARH 2000Art Appreciation
- ___ MUL 2010.....Music Appreciation
- ___ PHI 2010 & D.....Introduction to Philosophy (WAC) ++
- ___ THE 2000Theatre Appreciation

Group B

- ___ ARC 2208.....Culture & Architecture
- ___ DAN 2100Appreciation of Dance
- ___ FIL 2000 & D.....Film Appreciation
- ___ HUM 2471Racism and Anti-Racism
- ___ 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) ++
- ___ LIT 2100.....Introduction to World Literature
- ___ LIT 2931.....Special Topics in Literature (WAC) ++ Ω
- ___ SPC 2608Public Speaking ±

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).
- ± - Starting Spring 2022
- Ω - Starting Spring 2023
- ◊ - See information box below regarding Civic Literacy Requirement
- 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, LIT 2070 or LIT 2931. 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.**

<https://myfau.fau.edu>

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

Civic Literacy Requirement

<https://www.fau.edu/ugstudies/civic-literacy-requirement/>

Beginning in Fall 2018, students entering a Florida public institution as a degree-seeking student for the first time needs to demonstrate civic literacy through either taking a certain course (AMH 2020 or POS 2041) or passing an assessment exam. Beginning in Summer 2021, Florida Legislature amended the statute and now requires students to complete **both** a civic literacy course (AMH 2020 or POS 2041) and an assessment exam.

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, & Comparative Literature Department regarding this requirement.*

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

| B.A. | |
|------------------------|---|
| 34 - 38 credits | Intellectual Foundations Program & Foreign Language (w/out Science) |
| 09 credits | Science Core |
| 34 credits | Major Core |
| 28 credits | Upper Division Electives |
| <u>11 - 15 credits</u> | <u>Free Electives</u> |
| 120 CREDITS | TOTAL |

| B.S. (ACS) | |
|---------------------|---|
| 36 - 40 credits | Intellectual Foundations Program & Foreign Language (w/out Science) |
| 9 credits | Science Core |
| 55 - 56 credits | Major Core |
| 10 credits | Upper Division Electives |
| <u>5-10 credits</u> | <u>Free Electives</u> |
| 120 CREDITS | TOTAL |

| B.S. (Biochemistry) | |
|----------------------------|---|
| 46 credits | Intellectual Foundations Program & Foreign Language |
| 54 - 59 credits | Major Core |
| 9 - 14 credits | Upper Division Electives |
| <u>6 credits</u> | <u>Free Electives</u> |
| 120 CREDITS | TOTAL |

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 College of Science has the following requirements:

- (1) Any course work in the major field transferred from another institution must be approved by the major dept.;
- (2) The maximum amount of credit which may be earned through co-op is 10 credits; some departments allow some of these credits to substitute for major courses, check with the department for specifics.

MAJOR COURSES, COLLEGE REQUIREMENTS and ELECTIVES

BACHELOR OF ARTS DEGREE (B.A.) IN CHEMISTRY

The Bachelor of Arts is a liberal arts degree intended for students planning professional careers in chemistry-related professions; ex. health professions (medicine, dentistry, & pharmacy), environmental consulting, technical sales and secondary school teaching. In addition to the University and Charles E. Schmidt College of Science requirements, students seeking a Bachelor of Arts (B.A.) degree in Chemistry must complete the following program:

| | | |
|--|----------------|---|
| | CHM 2045 & Lab | *General Chemistry 1 w/ Lab (4 credits) |
| | CHM 2046 & Lab | *General Chemistry 2 w/ Lab (4 credits) |
| | CHM 2210 | *Organic Chemistry 1 (3 credits) |
| | CHM 2211 | *Organic Chemistry 2 (3 credits) |
| | CHM 2211 Lab | *Organic Chemistry Lab (2 credits) |
| | MAC 1105 | College Algebra (3 credits) |
| | MAC 2233 | Methods of Calculus (3 credits) |
| | PHY 2053 | College Physics 1 (4 credits) |
| | PHY 2048 Lab | General Physics 1 Lab (1 credit) |
| | PHY 2054 | College Physics 2 (4 credits) |
| | PHY 2049 Lab | General Physics 2 Lab (1 credit) |
| | CHM 3120 | Quantitative Analysis (2 credits) |
| | CHM 3120 Lab | Quantitative Analysis Lab (2 credits) |
| | BCH 3033 | Biochemistry 1 (3 credits) |
| | BCH 3103 Lab | Biochemistry Laboratory (3 credits) |
| | CHM 3400 | Introduction to Physical Chem (3 credits) |
| | CHM 3609 | Inorganic Chemistry (3 credits) |
| | CHM 3609 Lab | Inorganic Chemistry Lab (1 credit) |

***FAU lower division Chemistry sequence requires a C or better to take the next course in the sequence**

BACHELOR OF SCIENCE (B.S.) WITH MAJOR IN CHEMISTRY: ACS Approved PROGRAM

The ACS-approved B.S. program offers similar rigorous training in all aspects of chemistry as the basic track but includes some additional requirements corresponding with the certification guidelines of the Committee on Professional Training of the American Chemical Society (ACS). An ACS-certified degree can offer advantages in job placement and graduate school admission.

| | | |
|---------------------------------------|----------------|---|
| | CHM 2045 & Lab | *General Chemistry 1 w/ Lab (4 credits) |
| | CHM 2046 & Lab | *General Chemistry 2 w/ Lab (4 credits) |
| | CHM 2210 | *Organic Chemistry 1 (3 credits) |
| | CHM 2211 | *Organic Chemistry 2 (3 credits) |
| | CHM 2211 Lab | *Organic Chemistry Lab (2 credits) |
| | MAC 2311 | Calculus w/ Analytic Geometry 1 (4 credits) |
| | MAC 2312 | Calculus w/ Analytic Geometry 2 (4 credits) |
| | PHY 2048 | General Physics 1 (4 credits) |
| | PHY 2048 Lab | General Physics 1 Lab (1 credit) |
| | PHY 2049 | General Physics 2 (4 credits) |
| | PHY 2049 Lab | General Physics 2 Lab (1 credit) |
| | CHM 3120 | Quantitative Analysis (2 credits) |
| | CHM 3120 Lab | Quantitative Analysis Lab (2 credits) |
| | CHM 3060 | Chemical Literature (1 credit) |
| | BCH 3033 | Biochemistry 1 (3 credits) |
| | CHM 3410 | Physical Chemistry 1 (3 credits) |
| | CHM 3410 Lab | Physical Chemistry 1 Lab (2 credits) |
| | CHM 3411 | Physical Chemistry 2 (3 credits) |
| | CHM 3411 Lab | Physical Chemistry 2 Lab (2 credits) |
| | CHM 3609 | Inorganic Chemistry (3 credits) |
| | CHM 3609 Lab | Inorganic Chemistry Lab (1 credit) |
| | CHM 4139 | Bioanalytical Instrumentation (2 credits) |
| | CHM 4139 Lab | Bioanalytical Instrumentation Lab (2 credits) |
| Choose One of the following: | | |
| | MAC 2313 | Calculus w/ Analytic Geometry 3 (4 credits) |
| | MAP 2302 | Differential Equations 1 (3 credits) |
| Choose Three of the following: | | |
| | BCH 3034 | Biochemistry 2 (3 credits) |
| | CHM 3080 | Environmental Chemistry (3 credits) |
| | CHM 4220 | Organic Chemistry 3 (3 credits) |
| | CHM 4274C | Introduction to Drug Development (3 credits) |
| | CHM 4350 | Structural Biochemistry (3 credits) |
| | CHM 4714 | Materials Chemistry (3 credits) |
| | CHM 4905 | Directed Independent Study (3 credits) |

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BACHELOR OF SCIENCE DEGREE WITH MAJOR IN CHEMISTRY: BIOCHEMISTRY PROGRAM (B.S.)

The Biochemistry program is designed for students pursuing careers in biochemistry and related disciplines such as molecular biology, biophysics, and pharmacology. Additionally, premedical students who wish to pursue a research-oriented curriculum might be interested in it. In addition to the University and Charles E. Schmidt College of Science requirements, the B.S. in Chemistry (Biochemistry) degree program requires the following courses:

| | |
|---|--|
| BSC 1010 & Lab | Biological Principles w/ Lab (4 credits) |
| CHM 2045 & Lab | *General Chemistry 1 w/ Lab (4 credits) |
| CHM 2046 & Lab | *General Chemistry 2 w/ Lab (4 credits) |
| CHM 2210 | *Organic Chemistry 1 (3 credits) |
| CHM 2211 | *Organic Chemistry 2 (3 credits) |
| CHM 2211 Lab | *Organic Chemistry Lab (2 credits) |
| MAC 2311 | Calculus w/ Analytic Geometry 1 (4 credits) |
| PSY 3234 | Experimental Design and Statistical Inference (3 credits) |
| PHY 2048 or PHY 2053 | General Physics 1 (4 credits) or College Physics 1 (4 credits) |
| PHY 2048 Lab | General Physics 1 Lab (1 credit) |
| PHY 2049 or PHY 2054 | General Physic 2 (4 credits) or College Physics 2 (4 credits) |
| PHY 2049 Lab | General Physics 2 Lab (1 credit) |
| CHM 3120 | Quantitative Analysis (2 credits) |
| CHM 3120 Lab | Quantitative Analysis Lab (2 credits) |
| CHM 3060 | Chemical Literature (1 credit) |
| BCH 3033 | Biochemistry 1 (3 credits) |
| BCH 3034 | Biochemistry 2 (3 credits) |
| BCH 3103 Lab | Biochemistry Lab (3 credits) |
| BCH 4035 | Advanced Biochemistry (3 credits) |
| CHM 3410 | Physical Chemistry 1 (3 credits) |
| CHM 3410 Lab | Physical Chemistry 1 Lab (2 credits) |
| Minimum of one of the following: | |
| CHM 3080 | Environmental Chemistry (3 credits) |
| CHM 3609/L | Inorganic Chemistry & Lab (4 credits) |
| CHM 4130 | Bioanalytical Instrumentation (2 credits) |
| CHM 4130L | Bioanalytical Instrumentation Lab (2 credits) |
| CHM 4220 | Organic Chemistry (3 credits) |
| CHM 4273 | Introduction to Drug Design (3 credits) |
| CHM 4274C | Introduction to Drug Development (3 credits) |
| CHM 4350 | Structural Biochemistry (3 credits) |
| CHM 4714 | Materials Chemistry (3 credits) |
| Minimum of one of the following: | |
| MCB 3020 & MCB 3020L | General Microbiology & Lab (4 credits) |
| PCB3063 | Genetics (4 credits) |
| PCB 3023 | Cell Biology (3 credits) |
| PSB 3002 | Biological Bases of Behavior (3 credits) |
| Minimum of one of the following: | |
| BSC 4932 | Seminar (1 credit) |
| CHM 4905 | Directed Independent Study (1-3 credits) |
| IDS 3941 | Science Internship (1-3 credits) |

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PREMEDICAL/PREPROFESSIONAL COURSES FOR CHEMISTRY MAJORS

| | | |
|-----------------------------|----------------------|--|
| | BSC 1011 & BSC 1011L | Biodiversity & Lab (4 credits) REQUIRED |
| Suggested Electives: | | |
| | CBH 4024 | Comparative Animal Behavior (3 credits) |
| | IDS 3940 | Medical Shadowing Internship (1 credit) |
| | PCB 3703 | Human Morphology and Function 1 (3 credits) |
| | PCB 3703L | Human Morphology and Function 1 (1 credit) |
| | ZOO 4690 | Vertebrate Structure Development and Evolution (3 credits) |
| | ZOO 4690L | Vertebrate Structure Development and Evolution Lab (2 credits) |
| | PCB 3704 | Human Morphology and Function 2 (3 credits) |
| | PCB 3704L | Human Morphology and Function 2 Lab (1 credit) |
| | PCB 4723 | Comparative Animal Physiology (3 credits) |
| | PCB 4723L | Comparative Animal Physiology Lab (1 credit) |