

FLORIDA ATLANTIC UNIVERSITY

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

CHEMISTRY MAJOR (2011 – 2012)

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

FOUNDATIONS OF WRITTEN COMMUNICATION (Gordon Rule Writing (GRW), 6 credits required) (A grade of "C" or higher is required in each course)

- ___ ENC 1101 College Writing I (**REQUIRED**)
- ___ ENC 1102+ College Writing II

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
- ___ ENC 2452+◇ Advanced Composition for Science
- ___ NSP 1195+ Being Cared For: Reflections from Other Side of Bed

After completing this section, two additional (GRW) classes are required from two different departments. Choices are available in: Foundations in Global Citizenship and/or Foundations of Creative Expression.

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

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

Geosciences Department

- ___ EVR 2017 Environment and Society

Urban & Regional Planning Department

- ___ URP 2051 Designing the City

FOUNDATIONS OF SCIENCE & THE NATURAL WORLD (9 credits required, 2 courses from 2 different departments) (Labs and discussions are required)

----- **B.A. Degree requires the following:** -----

Chemistry Department

- ___ CHM 2045 & L† General Chemistry I (4 credits Incl. Lab)

Physics Department

- ___ PHY 2048 & L** General Physics I (5 credits incl. Lab)

OR

- ___ PHY 2053*** College Physics I (4 credits)

- ___ PHY 2048 L** General Physics I Lab (1 credit)

----- **B.S. Degree requires the following:** -----

Chemistry Department

- ___ CHM 2045 & L† General Chemistry I (4 credits Incl. Lab)

Physics Department

- ___ PHY 2048 & L** General Physics I (5 credits incl. Lab)

FOUNDATIONS OF MATHEMATICS & QUANTITATIVE REASONING (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 or MGF from the list below**

- ___ MAC 1105 College Algebra (**BA only**)
- ___ MAC 2233 Methods of Calculus (**BA only**)
- ___ MAC 2311 Calculus with Analytic Geometry I (4 cr)
- ___ MAC 2312 Calculus with Analytic Geometry II (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)

FOUNDATIONS IN GLOBAL CITIZENSHIP (Select 2 courses from 2 different departments) (6 credits required. At least 1 course from Global Perspectives)

----- **WESTERN IDENTITIES:** -----

Sociology Department

- ___ SYD 2790 Race, Class, Gender, and Sexuality

Philosophy Department

- ___ PHI 2010++ Introduction to Philosophy (**GRW**)

History Department

- ___ AMH 2010 (P/F) United States History to 1877
- ___ AMH 2020 (P/F) United States History Since 1877

Languages, Linguistics, & Comparative Literature Department

- ___ LAS 2000 Intro to Caribbean & Latin American Studies

----- **GLOBAL PERSPECTIVES (1 course required):** -----

Anthropology Department

- ___ ANT 2410 Culture and Society

Geography Department

- ___ GEA 2000 & D World Geography

History Department

- ___ WOH 2012 & D++ History of Civilization I (**GRW**)
- ___ WOH 2022 History of Civilization II

Sociology Department

- ___ SYP 2450 Global Society

Political Science Department

- ___ INR 2002 Introduction to World Politics

Languages, Linguistics, & Comparative Literature Department

- ___ LIN 2607 Global Perspectives on Language

Curriculum, Culture, & Educational Inquiry Department

- ___ EDF 2854 Educated Citizen in Global Context

Social Work Department

- ___ SOW 1005 Global Perspectives on Social Services

FOUNDATIONS OF CREATIVE EXPRESSION (6 credits req., select 2 courses from 2 different departments)

Architecture Department

- ___ ARC 2208 Culture & Architecture

Visual Art & Art History Department

- ___ ARH 2000 (P/F) Art Appreciation

School of Communication & Multimedia Studies

- ___ FIL 2000 & D Film Appreciation

English Department

- ___ LIT 2010++ Interpretation of Fiction (**GRW**)
- ___ LIT 2030++ Interpretation of Poetry (**GRW**)
- ___ LIT 2040++ Interpretation of Drama (**GRW**)

Languages, Linguistics, & Comparative Literature Department

- ___ LIT 2100 & D Global Great Books

Music Department

- ___ MUL 2010 History & Appreciation of Music

Theatre & Dance Department

- ___ DAN 2100 Appreciation of Dance
- ___ THE 2000 Appreciation of Theatre

STUDENTS ASSUME RESPONSIBILITY FOR MEETING ALL GRADUATION REQUIREMENTS
Course selections should be made in consultation with an advisor

Legend

- +** - ENC 1101 is a prerequisite.
- ++** - Two Foundations of Written Communications classes are required before taking this class.
- #** - Sophomore standing (30 credits earned) is required.
- **** - MAC 2281 or MAC 2311 is a prerequisite for this class. If a lab is needed take General Physics 1 Lab (PHY 2048 Lab).
- ***** - MAC 1105 and MAC 1114 are prerequisites for this class. If a lab is needed take General Physics 1 Lab (PHY 2048 Lab).
- ‡** - A corequisite of College Algebra (MAC 1105) or a prerequisite of Introductory Chemistry (CHM 1025).
- ◇** - A "B" in CHM 2045 and a grade of "C" or better in ENC 1101 in addition to a co-requisite of CHM 2051C is needed.
- GRW** - (WAC) Writing across the curriculum class.
- D** - A discussion is linked to the lecture. Students must register for the discussion in addition to the lecture.
- L** - A lab is linked to the lecture. Students must register for the lab in addition to the lecture.
- P/F** - Course may be taken pass (P) or fail (F) or for a letter grade. Indicate your preferred grading option during registration.

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 (FOL/FRE/GER/GRE/GRK/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.*

CLAS: College Level Academic Skills (CLAS) requirements need to be met prior to graduation. See the university catalog for additional information.

∠ **NOTE:** *Honors Seminars SHALL BE ACCEPTED AS MEETING THE GORDON RULE WRITING REQUIREMENT. See the Freshman Academic 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.*

B.A.

38 credits	Intellectual Foundations Program & Foreign Language (w/out Science)
33 credits	Chemistry (17 of which are upper division)
10 credits	College of Science (Physics)
28 credits	Upper Division Electives
<u>11 credits</u>	<u>Other Electives</u>
120 CREDITS	TOTAL

B.S.

Chemistry	ACS	Biochemistry	
40	40	40	Intellectual Foundations Program & Foreign Language (w/out Science)
16	13	07	Upper Division Electives
09	09	08	Free Electives
<u>55</u>	<u>58</u>	<u>65</u>	<u>Major Credits</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) No major course may be taken pass/fail; (3) 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:

MATHEMATICS (6 credits minimum, 2 courses) (Gordon Rule, **must get a “C” or better**)

MUST TAKE A PLACEMENT TEST BEFORE REGISTERING FOR MATH COURSES

MAC 1105	College Algebra (3 credits) – REQUIRED for BA
MAC 2233	Methods of Calculus (3 credits) – REQUIRED for BA

CHEMISTRY (33 credits minimum, 9 or more courses plus labs)

CHM 2046 & L	General Chemistry II and lab (3 + 1 = 4 credits)
CHM 3120 & L	Quantitative Analysis - CHM 2045 & 2046 w/labs are prerequisites (2 + 2 = 4 credits)
CHM 2210 & D	Organic Chemistry I with discussion - CHM 2045 & 2046 w/labs are prerequisites (3 credits)
CHM 2211	Organic Chemistry II - CHM 2210 is a prerequisite (3 credits)
CHM 2211 Lab	Organic Chemistry II Lab - CHM 2210 is a prerequisite (2 credits)
BCH 3033	Biochemistry I - CHM 2210 & 2211 w/lab is a prerequisites (3 credits)
BCH 3103 L	Biochemistry Laboratory BCH 3034 is a corequisite (3 credits)
CHM 3400	Introduction to Physical Chemistry - 8 credits of Gen Chem. are prerequisites (3 credits)
CHM 3609 & L	Inorganic Chemistry & Lab - 8 credits of Gen Chem. are prerequisites (3 + 1 = 4 credits)

PHYSICS (10 credits, 2 lectures and 2 labs)

PHY 2054	College Physics II (4 credits)
AND PHY 2049L	General Physics LABS II (1 credit)

ELECTIVES (39 credits) - needed to meet the 120 credit minimum required for the degree

—	Upper Division Electives (28 credits)
—	Other Electives - (11 credits) Elective courses decided upon by student, advisor and department.

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

The Bachelor of Science degree is designed for students planning professional careers as chemists in industry, government, or academic research. Students interested in advanced graduate studies in chemistry, biochemistry, or related fields should also follow one of the B.S. degree programs. In addition to the University and Charles E. Schmidt College of Science requirements, the Comprehensive B.S. degree program requires the following courses:

MATHEMATICS (8 credits 2 courses) (Gordon Rule, **must get a “C” or better**)

MUST TAKE A PLACEMENT TEST BEFORE REGISTERING FOR MATH COURSES

MAC 1114	Trigonometry (3 credits) - Recommended if not ready for MAC 2311
MAC 2311	Calculus with Analytical Geometry I (4 credits) – REQUIRED for BS
MAC 2312	Calculus with Analytical Geometry II (4 credits) – REQUIRED for BS

PHYSICS (10 credits)

PHY 2049 & L	General Physics II & Lab (4 + 1 = 5 credits)
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CHEMISTRY (32 credits – 45 credits upper division in major with ACS certified & 13 credits upper division electives)

CHM 2046 & L	General Chemistry II and lab (3 + 1 = 4 credits)
CHM 3120 & L	Quantitative Analysis - CHM 2045 & 2046 w/labs are prerequisites (4 credits)
CHM 2210 & D	Organic Chemistry I with discussion - CHM 2045 & 2046 w/labs are prerequisites (3 credits)
CHM 2211	Organic Chemistry II - CHM 2210 is a prerequisite (3 credits)
CHM 2211 Lab	Organic Chemistry II Lab - CHM 2210 is a prerequisite (2 credits)
CHM 3060	Chemical Literature (1 credit)
BCH 3033	Biochemistry I (3 credits)
CHM 3609 & L	Inorganic Chemistry and lab (3 + 1 = 4 credits)
CHM 3410 & L	Physical Chemistry I and lab (3 + 2 = 5 credits)
CHM 3411 & L	Physical Chemistry II and lab (3 + 2 = 5 credits)
CHM 4139 & L	Bioanalytical Instrumentation and lab (2 + 2 = 4 credits)
CHM 4905	Directed Independent Study (3 credits)

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. The ACS approved program requires all courses in the Comprehensive program, plus one of the following courses:

BCH 3034	Biochemistry II (3 credits)
CHM 4422	Advanced Physical Chemistry (3 credits)
CHM 4220	Advanced Organic Chemistry (3 credits)
CHM 4610	Advanced Inorganic Chemistry (3 credits)

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:

MATHEMATICS (8 credits - 2 courses) Gordon Rule - **must get a "C" or better**

MUST TAKE A PLACEMENT TEST BEFORE REGISTERING FOR MATH COURSES

MAC 1114	Trigonometry (3 credits) - Recommended if not ready for MAC 2311
MAC 2311	Calculus with Analytical Geometry I (4 credits) – REQUIRED for BS
MAC 2312	Calculus with Analytical geometry II (4 credits) – REQUIRED for BS

BIOCHEMISTRY AND BIOLOGY COURSES (20 credits)

BSC 1010 & L	Biological Principles & Lab (4 credits)
BCH 3033	Biochemistry I (3 credits)
BCH 3034	Biochemistry II (3 credits)
BCH 3103L	Biochemistry Lab (3 credits)
BCH 4035	Advanced Biochemistry (3 credits)
CHM 4139 & L	Bioanalytical Instrumentation & lab (2 + 2 = 4 credits)

PHYSICS (10 credits)

PHY 2048 & L	General Physics I & Lab (5 credits) - Prerequisite of a "C" in MAC 2311 or MAC 2253
PHY 2049 & L	General Physics II & Lab (5 credits)

CHEMISTRY (34 credits)

CHM 2045 & L	General Chemistry I & Lab (4 credits)
CHM 2046 & L	General Chemistry II & Lab (4 credits)
CHM 3120 & L	Quantitative Analysis I & Lab (4 credits)
CHM 2210 & D	Organic Chemistry I with discussion (3 credits)
CHM 2211	Organic Chemistry II - CHM 2210 is a prerequisite (3 credits)
CHM 2211 Lab	Organic Chemistry II Lab - CHM 2210 is a prerequisite (2 credits)
CHM 3060	Chemical Literature (1 credit)
CHM 3410 & L	Physical Chemistry I & Lab (5 credits)
CHM 3411 & L	Physical Chemistry II & Lab (5 credits)
CHM 4905	Directed Independent Study (3 credits or approved substitute)

Biology/Biochemistry Elective Choose one (1) of the following courses (3 credits).

MCB 3020	General Microbiology (3 credits)
PCB 4023	Cell Biology (3 credits)
BCH 5415	Biochemistry of the Gene (3 credits)

PREMEDICAL/PREPROFESSIONAL COURSES FOR CHEMISTRY MAJORS

BSC 1011 & L	Biodiversity & Lab (4 credits)
BSC 1010 & L	Biological Principles (4 credits)
BCH 3034	Biochemistry II (3 credits)
MCB 3020 & L	General Microbiology & Lab (3 credits)

And ONE of the following:

ZOO 4690	Comparative Vertebrate Morphogenesis (3 credits)
PCB 3063	Genetics (4 credits)