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.

DATA SCIENCE & ANALYTICS (2022-2023)

Charles E. Schmidt College of Science
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 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-----

____ AST 2002
Intro. to Astronomy
____ BSC 1005 & L
Life Science (3 cr. w/Lab)
____ CHM 1020C
Contemp. Chemical Issues
____ ESC 2000
The Blue Planet **(online)**
____ EVR 1001
Env. Sci. and Sustainability

--------For Science Majors--------

____ BSC 1010 & L & D
Biological Principles
(4 cr. w/Lab & Dis)
____ BSC 2085 & L
Anatomy & Physiology 1
(4 cr. w/Lab)
____ CHM 2045 & L **(see note)**
General Chemistry 1
(4 cr. w/Lab) **‡**
____ PHY 2048 & L **(see note)**
General Physics 1
(5 credits w/Lab) *
____ PHY 2053 & L
College Physics 1
(5 credits w/Lab) **

Group B

------For Non-Science Majors-----

____ ANT 2511 & L
Intro to Biological
Anthropology (4 cr. w/ Lab)
____ ETG 2831
Nature: Inter. of Sci., Eng., &
the Humanities
____ GLY 2010C
Physical Geol. (4 cr. w/Lab)
____ GLY2100
History of Earth and Life
____ IDS 2382
Human Mission to Mars
____ MET 2010
Weather, Climate & Climate
Change
____ 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.

Group A

____ STA 2023 ..... Introduction to Statistics **(REQUIRED)**
____ MAC 1105 ..... College Algebra
____ MAC 2311 ..... Calc. w/Analytic Geometry 1 (4 credits) **(REQUIRED)**
or any mathematics course for which one of the above courses is the direct prerequisite

Group B

____ COP 1031C .... Computer Programming & Data Literacy for Everyone
(For Non-College Engineering & Computer Science majors)

____ MAC 1147 ..... Precalculus Algebra & Trigonometry (4 credits)
____ MAC 2210 ..... Intro Calculus w/Applications (4 credits) **(Permit Only)**
____ MAC 2233 ..... Methods of Calculus
____ MAC 2241 ..... Life Science Calculus 1 (4 credits)
____ MAC 2312 ..... Calc. w/Analytic Geometry 2 (4 credits)

____ PHI 2102..... Logic

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
____ SYG 1000 .....Sociological Perspectives

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

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

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 2000 ..... Art Appreciation
____ MUL 2010 ..... Music Appreciation
____ PHI 2010 & D ..... Introduction to Philosophy **(WAC) ++**
____ THE 2000 ..... Theatre Appreciation

Group B

____ ARC 2208 ..... Culture & Architecture
____ DAN 2100 ..... Appreciation of Dance
____ FIL 2000 & D ..... Film Appreciation
____ HUM 2471 ..... Racism 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 2608 ..... Public Speaking ±

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.

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

(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.***

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, 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.*

FREE ELECTIVES (36 credits, 12 or more courses)

Free electives are courses in any college, any department not previously taken. These credits are needed to meet the 120 credits required for graduation.

36 credits	Intellectual Foundations Program
36 credits	Free Electives
48 credits	Major Requirements
120 CREDITS	**TOTAL**

Note: See the catalog for specific requirements, course descriptions and additional information. The requirements for some corecurriculum & other courses may be satisfied by passing the appropriate AP or CLEP exam. Check with your advisor and college.

Bachelor of Science with Major in Data Science and Analytics			
	Common Core Courses (21cr)		
	Course Title	*Credits*	*Course #*
	Introductory Statistics	*3*	STA 2023
	Tools for Data Science	3	CAP 2751
	Experimental Design and Data Analysis	3	CAP 2753
	Mathematics for Data Science	3	MAP 2192
	Artificial Intelligence for Social Good	3	CCJ 3071
	Data Science Capstone	3	ISC 4941
	Data Management and Analysis with Excel	3	QMB 3302
		21 cr	
Data Science in the Natural Sciences Concentration			
	Concentration Core Requirements (9cr)		
	Introduction to Computational Mathematics	3	MAD 2502
	RI: Introduction to Data Science	3	CAP 3786
	Computational Statistics	3	STA 3100
		9 cr	
	Concentration Core Electives. Choose four courses (12cr):		
	Cryptography and Information Security	3	CIS 4362
	Graph Theory	3	MAD 4301
	Applied Mathematical Modeling	3	MAP 4103
	RI: Industrial Problems in Applied Math	3	MAP 4913
	Topology for Data Science	3	MTG 4325

	SAS for Data and Statistical Analyses	3	STA 3024
	Introduction to Biostatistics	3	STA 3173
	Statistical Designs	3	STA 4222
	Applied Statistics 1	3	STA 4234
	Applied Statistics 1 Lab	1	STA 4202L
	Probability and Statistics 1	3	STA 4442
	Probability and Statistics 2	3	STA 4443
	Applied Statistics 2	3	STA 4702
	Applied Time Series and Forecasting	3	STA 4853
	12 cr		
	Choose two courses from any section below (6cr):		
	Arts and Letters Electives		
	Research Methods in Bioarchaeology	3	ANT 4192
	Information Technology in Public Administration	3	PAD 3712
	Introduction to the Nonprofit Sector	3	PAD 4144
	Quantitative Inquiry for Public Managers	3	PAD 4702
	Research Methods for Public Management	3	PAD 4704
	RI: Research Methods in Political Science	3	POS 3703
	Public Opinion and American Politics	3	POS 4204
	Sociological Analysis: Quantitative Methods	3	SYA 4400
	Business Electives		
	Business Communication for Data Analysts	3	GEB 3231
	Rev Man & Pred Analysis in Hospt & Tourism Ind	3	HFT 4481
	Introduction to Business Analytics and Big Data	3	ISM 3116
	Contemporary Issues of Digital Data Management	3	ISM 4041
	Data Mining and Predictive Analytics	3	ISM 4117
	Database Management Systems	3	ISM 4212
	Management of Information Assurance and Security	3	ISM 4323
	Advanced Business Analytics	3	ISM 4403
	Social Media and Web Analytics	3	ISM 4420
	Bus Analytics for Mar & Cust Relation Man	3	MAR 4615
	Engineering Electives		
	Introduction to Deep Learning	3	CAP 4613
	Introduction to Artificial Intelligence	3	CAP 4630
	Introduction to Data Mining and Machine Learning	3	CAP 4770
	Introduction to Data Science and Analytics	3	CAP 4773
	Introduction to Computer Systems Performance Evaluation	3	CEN 4400
	Introduction to Database Structures	3	COP 3540
	Introduction to Internet Computing	3	COP 3813
	Python Programming	3	COP 4045
	Applied Database Systems	3	COP 4703
	Science Electives		
	Solar System Astronomy	3	AST 3110
	Laboratory Methods in Biotechnology	3	BSC 4403L
	Concepts in Bioinformatics	3	BSC 4434C
	RI: Introduction to Data Science	3	CAP 3786
	Cryptography and Information Security	3	CIS 4362
	Spatial Data Analysis	3	GEO 4167C
	Photogrammetry and Aerial Photograph Interpretation	3	GIS 4021C

	Applications of Geographic Information Systems	3	GIS 4048C
	Geospatial Databases	3	GIS 4118
	Graph Theory	3	MAD 4301
	Applied Mathematical Modeling	3	MAP 4103
	RI: Industrial Problems in Applied Math	3	MAP 4913
	Epidemiology of Infectious Diseases	3	MCB 4276
	Topology for Data Science	3	MTG 4325
	Practical Cell Neuroscience	3	PCB 4843C
	Computational Physics	3	PHZ 3151C
	Mathematical Methods for Physics	3	PHZ 4113
	SAS for Data and Statistical Analyses	3	STA 3024
	Computational Statistics	3	STA 3100
	Introduction to Biostatistics	3	STA 3173
	Statistical Designs	3	STA 4222
	Applied Statistics 1	3	STA 4234
	Probability and Statistics 1	3	STA 4442
	Probability and Statistics 2	3	STA 4443
	Applied Statistics 2	3	STA 4702
	Applied Time Series and Forecasting	3	STA 4853
	Social Work and Criminal Justice Electives		
	Teen Technology Misuse	3	CCJ 4554
	Methods of Research in Criminal Justice	3	CCJ 4700
	Criminal Justice Technology	3	CJE 3692C
	Crime Analysis	3	CJE 4663
	Computer Crime	3	CJE 4668
	Research Methods in Social Work	3	SOW 4403
(Total 48 credits)			

The Major in Data Science and Analytics:

(1) 45 credits minimum of upper division course work,

(2) students must get a “C” or higher in all major courses to receive major credit