

SCIENCES, INTERDISCIPLINARY

Degree: Bachelor of Science
Program: Interdisciplinary Science
Building 58, Room 79
(850) 474-2748
<http://uwf.edu/biology/>
biology@uwf.edu

College: Arts and Sciences
Semester Hours Required for Degree: 120

Program Contact: G. Stewart (Coordinator)

The Interdisciplinary Science program is designed for those students who want a broadly based education in the natural sciences and mathematics rather than an in-depth study of one field. The program covers biology, chemistry, computer science, environmental studies, mathematics, physics, pre-pharmacy, and zoo science and is flexible to meet individual interests.

Since some professional schools prefer their applicants to demonstrate excellence in a specific discipline, the interdisciplinary science major considering dentistry, medicine, optometry or veterinary medicine should consult a preprofessional advisor.

The Pre-Pharmacy Specialization is intended to prepare students for Pharmacy School and provides all required courses for admission to the University of Florida's Doctor of Pharmacy (Pharm.D.) Program. This specialization provides a strong background in Biology and Chemistry.

The Zoo Science Specialization is designed for and limited to students who have completed an Associate's Degree in the field. It provides further study of the field with an emphasis on the biological sciences. The specialization has been designed to prepare students for a wide variety of careers in the animal industry, in such fields as zookeeper, curator, or director or operating one's own animal industry business. It is not designed as a pre-veterinary medicine program and does not include all of the courses normally required for admission to a school of veterinary medicine.

PROGRAM REQUIREMENTS

In addition to general University requirements, students seeking the B.S. in Interdisciplinary Science must meet the requirements listed below.

Students should consult with their academic advisor for courses which may satisfy both the General Studies requirements and common prerequisites.

A grade of "C" or better is required in all common prerequisite courses. A grade of "C-" or higher is required in all major courses.

General Studies (36 sh)

For addition information see the General Studies section of this *Catalog*.

Common Prerequisites

State mandated common prerequisites must be completed prior to graduation, but are not required for admission to

the program. Courses in brackets indicate substitutes from Florida public community/junior colleges and universities.

Complete the common prerequisites for the two areas selected (biology, chemistry, computer science, environmental studies, mathematics, and physics) listed below.

BIOLOGY (28 sh)

+BOT	2010/L	General Botany/Lab 4 [BSC X040, 2012, PCB X010, X011, X021, X131]
+CHM	2045/L	General Chemistry I/Lab 4 [CHM X045/L, X045E, X045I]
+CHM	2046/L	General Chemistry II/Lab 4 [CHM X046, X046/L, X046C, X046E]
+MAC	2311	Analytic Geometry & Calculus I 4 [MAC X311]
+ZOO	1010/L	General Zoology/Lab 4 [BSC X010, X010L]

Choose one (Option 1 is recommended if second discipline is Chemistry, Computer Science, Mathematics, or Physics. Option 2 is recommended if Environmental Studies is second discipline):

<i>Option 1</i>		
+PHY	2048/L	University Physics I/Lab 4 [PHY X048/L]
+PHY	2049/L	University Physics II/Lab 4 [PHY X049/L]

<i>Option 2</i>		
+PHY	2053/L	General Physics I/Lab 4 [PHY X053/L, X053C]
+PHY	2054/L	General Physics II/Lab 4 [PHY X054/L, X054C]

CHEMISTRY (24 SH)

+CHM	2045/L	General Chemistry I/Lab 4 [CHM X045/L, X045C]
+CHM	2046/L	General Chemistry II/Lab 4 [CHM X046/L, X046C, X046E]
+MAC	2311	Analytic Geometry & Calculus I 4 [MAC X311]
+MAC	2312	Analytic Geometry & Calculus II 4 [MAC X312]

Choose one:

<i>Option 1</i>		
+CHM	2210/L	Organic Chemistry I/Lab 4 [CHM X210C]
+CHM	2211/L	Organic Chemistry II/Lab 4 [CHM X211C]

<i>Option 2</i>		
+PHY	2048/L	University Physics I/Lab 4 [PHY X048L]
+PHY	2049/L	University Physics II/Lab 4 [PHY X049L]

<i>Option 3</i>		
+PHY	2053/L	General Physics I/Lab 4 [PHY X053/L, X053C]
+PHY	2054/L	General Physics II/Lab 4 [PHY X054/L, X054C]

COMPUTER SCIENCE (15 SH)

COP	XXXX	Introductory Programming in Ada, C, C++, Pascal, or equivalent language 3
+MAC	2311	Analytic Geometry & Calculus I 4 [MAC X311]

Choose one:

Option 1 is recommended

+PHY 2048/L	University Physics I/Lab.....	4
	[PHY X048/L]	
+PHY 2049/L	University Physics II/Lab.....	4
	[PHY X049/L]	

Option 2

+PHY 2053/L	General Physics I/Lab.....	4
	[PHY X053/L, X053C]	
+PHY 2054/L	General Physics II/Lab.....	4
	[PHY X054/L, X054C]	

ENVIRONMENTAL STUDIES (20 SH)

+CHM 2045/L	General Chemistry I/Lab.....	4
	[CHM X045/L, X045C, X045I]	
+CHM 2046/L	General Chemistry II/Lab.....	4
	[CHM X046/L, X046C, X046E]	

Choose one:

+GEO 1200/L	Physical Geography/Lab.....	4
	[GEO X200/L]	
+GLY 2010/L	Physical Geology/Lab.....	4
	[GLY X010/L]	

Choose one:

Option 1

+PHY 2048/L	University Physics I/Lab.....	4
	[PHY X048/L]	
+PHY 2049/L	University Physics II/Lab.....	4
	[PHY X049/L]	

Option 2 is recommended

+PHY 2053/L	General Physics I/Lab.....	4
	[PHY X053/L, X053C]	
+PHY 2054/L	General Physics II/Lab.....	4
	[PHY X054/L, X054C]	

MATHEMATICS (12 SH)

+MAC 2311	Analytic Geometry & Calculus I.....	4
	[MAC X311]	
+MAC 2312	Analytic Geometry & Calculus II.....	4
	[MAC X312]	
+MAC 2313	Analytic Geometry & Calculus III.....	4
	[MAC X313]	

PHYSICS (24 SH)

+CHM 2045/L	General Chemistry I/Lab.....	4
	[CHM X045/L, X045C, X045I]	
+CHM 2046/L	General Chemistry II/Lab.....	4
	[CHM X046/L, X046C, X046E, X046I]	
+MAC 2311	Analytic Geometry & Calculus I.....	4
	[MAC X311]	
+MAC 2312	Analytic Geometry & Calculus II.....	4
	[MAC X312]	

Choose one:

Option 1 is recommended

+PHY 2048/L	University Physics I/Lab.....	4
	[PHY X048/L]	
+PHY 2049/L	University Physics II/Lab.....	4
	[PHY X049/L]	

Option 2

+PHY 2053/L	General Physics I/Lab.....	4
	[PHY X053/L, X053C]	
+PHY 2054/L	General Physics II/Lab.....	4
	[PHY X054/L, X054C]	

+ Indicates common prerequisites which can be used to satisfy General Studies requirements.

Lower Division Electives (0-10 sh)

Sufficient 1000/2000 level electives to complete at least 60 semester hours in the lower division. Current UWF

students may use elective courses at any level (1000-4999) to meet this elective requirement.

Major (36-42 sh)

Choose the upper division course work applicable to the selected disciplines. The program requires specific upper-division course work in each of the two selected sciences as indicated below. Consult coordinator.

BIOLOGY (19 SH)

Choose three:

BCH 3033/L	Biochemistry I/Lab.....	4
PCB 3063/L	Genetics/Lab.....	4
PCB 3253/L	Developmental Biology/Lab.....	4
PCB 4043/L	Ecology/Lab.....	4
PCB 4723/L	Comparative Animal Physiology I/Lab.....	4

Electives (7 sh):

Selected with faculty advisor; at least two 3000/4000 level courses which must include an advanced botany course with lab.

CHEMISTRY (20-21 SH)

CHM 3120/L	Analytical Chemistry/Lab.....	4
CHM 3230	Organic Chemistry III.....	3
CHM 3400C	Basic Physical Chemistry.....	4
CHM 3740L	Advanced Laboratory Techniques.....	2
CHM 4611	Inorganic Chemistry.....	4

Electives (3-4 sh):

3000/4000 level elective selected with faculty advisor

COMPUTER SCIENCE (18-21 SH)

CDA 3100	Microprocessor Systems.....	3
CIS 3021	Science of Computing.....	3
COP 3022	Intermediate Computer Programming.....	3
COP 3530	Data Structures and Algorithms.....	3
COP 4600	Operating Systems.....	3
COT 3100	Applications of Discrete Structures.....	3

If not completed at the Lower Division:

COP 2253	Programming Using Java.....	3
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ENVIRONMENTAL STUDIES (21 SH)

AST 3033	Modern Astronomy.....	3
BSC 2311	Introduction to Oceanography & Marine Biology.....	3
GEO 3210/L	Geomorphology/Lab.....	4
GEO 3250/L	Weather & Climate/Lab.....	4
GIS 3015/L	Cartographic Skills/Lab.....	4

Choose one:

GEO 3471	Geography of World Affairs.....	3
GEO 3502	Economic Geography.....	3

MATHEMATICS (18 SH)

MAP 2302	Differential Equations.....	3
MAS 3105	Linear Algebra.....	3
3000/4000 level Math/Stat Electives.....		12

PHYSICS (19 SH)

EEL 3111	Circuits I.....	3
EEL 3303L	Electric Circuits Laboratory.....	1
PHY 3106	Modern Physics I.....	3
PHY 3106L	Modern Physics Lab.....	2
PHY 3220	Intermediate Mechanics.....	4
PHY 4323	Electricity & Magnetism I.....	3

Choose one:

MAS 4156	Vector Analysis.....	3
PHZ 4113	Mathematical Physics I.....	3

Major-Related (18-24 sh)

Remaining courses must be in the related disciplines and approved by the academic advisor.

Upper Division Electives (0 sh)

PRE-PHARMACY SPECIALIZATION

The Pre-Pharmacy Specialization is intended to prepare students for Pharmacy School and provides all required courses for admission to the University of Florida's Doctor of Pharmacy (Pharm.D.) program. Currently the University of Florida requires an A.A. or a B.S. of students applying to their Pharm.D Program. The trend is toward eliminating the B.S. in Pharmacy as the terminal degree and offering the Pharm.D. only. It is expected that the Pharm.D. Degree will be the entry-level degree for employment in the near future.

Pharmacy programs are highly competitive. A minimum GPA of 3.2 is expected by many Pharm.D. Programs and a higher GPA may be necessary to be competitive. A competitive score on the PCAT is considered to range at or above the 85th percentile. Students should stay in close contact with their academic advisor to plan the curriculum and to address other factors affecting admission.

Prospective students need to be aware that some biology lab courses involve use of live animals. Students may wish to seek details from course instructors before enrolling.

A grade of "C" or better is required in each of the seven specified major courses.

General Studies (36 sh)

Students should take ECO 2013 to meet the Socio-Political requirement, SPC 2016 to meet the Values and Expressions requirement, MAC 1140 and MAC 2311 to meet the mathematics requirement, CHM 2045/L and CHM 2046/L to meet the science requirements, and ARH 2050 or ARH 2051 to meet the Fine Arts requirement. For additional information see the General Studies section of this *Catalog*.

Common Prerequisites* (33 sh)

State mandated common prerequisites must be completed prior to graduation, but are not required for admission to the program.

+BOT	2010/L	General Botany/Lab.....	4
		[BOTX010/L, BSCX010/L]	
+BSC	1085/L	Anatomy and Physiology I/Lab.....	4
		[BSCX085/L, BSCX093/L, PETX320C]	
+BSC	1086/L	Anatomy and Physiology II/Lab.....	4
		[BSCX086/L, BSCX096/L, PETX350C]	
+CHM	2045/L	General Chemistry I/Lab.....	4
		[CHMX045/L]	
+CHM	2046/L	General Chemistry II/Lab.....	4
		[CHMX046/L]	
+MAC	1114	Trigonometry.....	2
		[MACX114]	
+MAC	1140	Precalculus Algebra.....	3
		[MACX140]	
+MAC	2311	Analytic Geometry and Calculus I.....	4
		[MACX233, MACX311]	
+PHY	2053/L	General Physics I/Lab.....	4
		[PHYX004/L, PHYX053/L]	
+PHY	2054/L	General Physics II/Lab.....	4
		[PHYX005/L, PHYX054/L]	

#+SPC	1600	Public Speaking.....	3
		[SPCX600]	
#+ZOO	2303/L	Vertebrate Zoology/Lab.....	4
		[BSCX011/L, ZOOX303/L]	

+ Indicates common prerequisites which can be used to satisfy General Studies requirements.

Indicates course offered locally by Pensacola Junior College.

Please Note: Transfer students will be fully accepted into the UF Pharm. D. Program without completing the Pre-Anatomy & Physiology and communication courses (assuming they meet all the other admissions requirements), but they will be advised to complete the Anatomy & Physiology courses at UF (if not already completed at the community college) in Summer A&B prior to starting the Pharm. D. Program in the Fall. The communication course may be completed at any time prior to completing the program. Although listed above, these courses are not included in hour totals.

* Common Prerequisites pending approval by the Florida Articulation Coordinating Committee.

Lower Division Electives (0-4 sh)

Sufficient 1000/2000 level electives to complete at least 60 semester hours in the lower division. Current UWF students may use elective courses at any level (1000-4999) to meet this elective requirement. Students should take BSC 1085/L and BSC 1086/L.

Major (28 sh)

BCH	3033/L	Biochemistry I/Lab.....	4
BCH	3034/L	General Biochemistry: Metabolism/Lab.....	4
CHM	3120/L	Analytical Chemistry/Lab.....	4
MCB	3020/L	Microbiology w/Lab.....	4
PCB	2131/L	Cell Biology/Lab.....	4
PCB	3063/L	Genetics/Lab.....	4
PCB	4233/L	Immunology w/Lab.....	4

Major-Related (32 sh)

CHM	2210/L	Organic Chemistry I/Lab.....	4
CHM	2211/L	Organic Chemistry II/Lab.....	4

Pre-Pharmacy Electives (24 sh)

Students must check with advisor before selecting electives from the list below to ensure all current Pharmacy School prerequisites are met:

Chemistry Electives (9-11 sh)

CHM	3230	Organic Chemistry III.....	3
CHM	3400C	Basic Physical Chemistry.....	4
CHM	3775	Molecular Modeling.....	3
CHM	4455/L	Introduction to Polymer Science/Lab.....	3
CHM	4611	Inorganic Chemistry.....	4
CHM	4930	Seminar: Special Topics in Advanced Chemistry.....	3

Biology Electives (11-12 sh)

BOT	4850	Medicinal Botany.....	3
HSC	3550	Pathophysiology.....	3
MLS	4462/L	Medical Microbiology/Lab.....	4
PCB	4503	Virology.....	3
PCB	4524/L	Molecular Biology/Lab.....	4
ZOO	3233/L	Parasitology/Lab.....	4
ZOO	4753/L	Histology/Lab.....	4

Additional Electives (1-4 sh)

BSC	4430	Ethical Issues in Biotechnology.....	3
HSC	4143	Drugs in Society.....	3
HSC	4653	Dilemmas in Medical Practice.....	3
MCB	4276	Epidemiology of Infectious Disease.....	3
PCB	4703	Human Physiology.....	3
		Directed study approved by advisor.....	1-2

Upper Division Electives (0 sh)

ZOO SCIENCE SPECIALIZATION

The Zoo Science Specialization is designed for and limited to students who have completed an Associate's Degree in the field. No more than 24% of the program requirements for this degree may be in traditional business subjects.

General Studies (36 sh)

Students transferring from Florida Community Colleges with an Associate of Science should consult with an advisor in the department before determining which other courses will need to be taken to complete UWF's General Studies Program. For additional information, see the General Studies section of this *Catalog*.

Common Prerequisites* (52 sh)

+CHM 2045/L	General Chemistry I/Lab	4
	[CHM X045/L]	
+CHM 2046/L	General Chemistry II/Lab	4
	[CHM X046/L]	
+ENC 1101	English Composition I	3
	[ENC X101]	
+ENC 1102	English Composition II	3
	[ENC X102]	
+LIT 2__	Literature Course	3
+MAC 1105	College Algebra	3
	[MAC X105]	
PAZ ____	Animal Science Courses	15
+PSY 2012	General Psychology	3
	[PSY X012]	
+STA 2023	Elements of Statistics	3
	[STA X023]	
+ZOO 1010/L	General Zoology/Lab	4
	[ZOO X010/L]	

Choose one:

+BSC 2010/L	Integrated Principles of Biology/Lab	4
	[BSC X010/L]	
+PCB 2131/L	Cell Biology/Lab	4
	[PCB X131/L]	

Choose one:

+SPC 1600	Public Speaking	3
	[SPC X600]	
+SPC 2016	Basic Communication Skills	3
	[SPC X016]	

+ Indicates common prerequisites which can be used to satisfy General Studies requirements.

* Pending approval by the State Articulation Coordinating Committee.

Lower Division Electives (0 sh)

Major (25-26 sh)

PCB 3063/L	Genetics/Lab	4
PCB 3253/L	Developmental Biology/Lab	4
PCB 4043/L	Ecology/Lab	4
PCB 4723/L	Comparative Animal Physiology I/Lab	4

Choose three (9-10 sh)

BSC 4303	Biogeography	3
PCB 4673	Principles of Evolution	3
ZOO 3233/L	Parasitology/Lab	4
ZOO 4485	Marine Mammalogy	3

Major-Related (34-35 sh)

*ECO 3003	Principles of Economic Theory & Public Policy	3
FIN 3403	Managerial Finance	3
MAN 3025	Management Fundamentals	3
MAR 3023	Marketing Fundamentals	3
* 3000/4000 level Fine Arts Course		3

* 3000/4000 level Historical Issues Course

* Courses may be used to meet General Studies requirements if student has not earned an Associate of Arts degree from a Florida Public Institution. If the fine arts and historical issues requirements are met with lower division courses, students will be able to select an advisor approved 3000/4000 level course to fulfill the 48 hour upper division requirement.

Choose 5-6 sh:

•ACG 3082	Accounting for Non-Majors	3
STA 4173	Biostatistics	3
3000/4000 level Biology Directed Study		2
•3000/4000 level Business Elective		3

• Choosing these 2 Business courses affords students the opportunity to earn a Business Minor. Business minors must also include a computer literacy course. See advisor for details.

Required additional Animal Science (PAZ) courses transferred from Community College

(Number of hours varies according to previous selection.)

Upper Division Electives (0-1 sh)

Sufficient 3000/4000 level electives to meet UWF's requirement of 48 semester hours in the upper division or completion of all departmental requirements at the 3000/4000 level, whichever is greater.