

# BIOLOGY, B.S.

## ECOLOGY AND EVOLUTIONARY BIOLOGY (ECEV)

(Fall 2017-Summer 2018)

**BIOLOGY BS CORE COURSES & SUPPORTING COURSES** (55 credits) \*Note: 2.3 GPA required in BIOL courses /2.0 degree GPA

- \_\_\_\_\_ 4 BIOL 11700 Principles of Ecology & Evolution (C- or higher)
- \_\_\_\_\_ 4 BIOL 11900 Principles of Structure & Function (C- or higher)
- \_\_\_\_\_ 1 BIOL 12000 Resource Seminar
- \_\_\_\_\_ 3 BIOL 21700 Intermediate Ecology
- \_\_\_\_\_ 4 BIOL 21800 Genetics & Molecular Biology
- \_\_\_\_\_ 4 BIOL 21900 Principles of Functional Biology
- \_\_\_\_\_ 3 BIOL 49100 Senior Biology Seminar

**SUPPORTING CHEMISTRY, MATH & PHYSICS COURSES**

- \_\_\_\_\_ 4 PHYS 22000 General Physics
- \_\_\_\_\_ 4 PHYS 22100 General Physics
- \_\_\_\_\_ 4 CHM 11500 General Chemistry (C- or higher)
- \_\_\_\_\_ 4 CHM 11600 General Chemistry (C- or higher)
- \_\_\_\_\_ 4 CHM 25400 and CHM 25500 or CHM 25400 and CHM 26100
- \_\_\_\_\_ 4 CHM 25600 and CHM 25800 or CHM 25800 and CHM 26200
- \_\_\_\_\_ 4 Credits in MA 16500 Analytic Geometry & Calculus I or 3 Credits in MA 22900 Calc for Mang, Soc, & Bio Sciences I
- \_\_\_\_\_ 3 STAT 24000 Statistical Methods for Biology
- \_\_\_\_\_ 3 STAT 34000 Elem Statistical Methods II

**CONCENTRATION in ECOLOGY/EVOLUTION (ECEV)** (15 credits) \*Note: grades of C- or higher required in BIOL/2.0 GPA

- \_\_\_\_\_ 3 Evolution and Systematics (BIOL 52410 or 58000 or FNR 50500)
- \_\_\_\_\_ **12** Credits Ecology and Evolutionary Electives: (BIOL 33500, 33600, 34500, 43400, 43700, 44500, 50100, 50500, 52000, or 52410, 54300, 55600, 55800, 58000, 58200, 58600, 59800, or ENTM 20600 or 20700, or FNR 22500 (w/lab), 50500 or 52300)
- \_\_\_\_\_ **\*\*Lab Check** - Approved Ecology and Evolutionary Lab courses (**2** required):
  - \_\_\_\_\_ Lab 1 \_\_\_\_\_ (BIOL 33600, 34500, 43400, 44500, 50100, 50500, 54300, 55800, or 59800, or ENTM 20700, FNR 22500 (lab))
  - \_\_\_\_\_ Lab 2 \_\_\_\_\_

**A&S BS LIBERAL ARTS REQUIREMENTS** (14 credits — credits may vary with double counting/language placement – see advisor)

- \_\_\_\_\_ 3 Second Semester Writing (C- or higher) (ENG W140 or ENG W233)
- \_\_\_\_\_ 3 Speaking Requirement (C- or higher) (COM 11400 or HIST H125)
- \_\_\_\_\_ 8 Credits Language Sequence (credit/placement required for 2 semesters of foreign language)
  - \_\_\_ FL 11 \_\_\_ FL 12 Options: (Arabic, French, German, Japanese, Latin, Spanish)

**GENERAL EDUCATION REQUIREMENTS** (33 Credits)

\*Note: grades of C- or higher required in Gen Ed/2.0 GPA

**\*\*Up to 6 credits in Gen Ed GA1 to GB7 and 3 credits GCAP (C8) may originate in major discipline—see advisor for more information.**

- \_\_\_\_\_ 3 GA1 Category A1 -- Written Communication (See Bulletin or myBLUEprint for **General Education** courses)
- \_\_\_\_\_ 3 GA2 Category A2 -- Speaking and Listening
- \_\_\_\_\_ 3 GA3 Category A3 -- Quantitative Reasoning
- \_\_\_\_\_ 3 GB4 Category B4 -- Scientific Ways of Knowing
- \_\_\_\_\_ 3 GB5 Category B5 -- Social & Behavioral Ways of Knowing
- \_\_\_\_\_ 3 GB6 Category B6 -- Humanistic and Artistic Ways of Knowing
- \_\_\_\_\_ 3 GB7/71 Category B7 or B71 -- Interdisciplinary or Creative Ways of Knowing
- \_\_\_\_\_ 9 Additional Credits -- Category A or B General Education courses
- \_\_\_\_\_ **3 GCAP Category C8--Capstone Experience** (IPFW course only)

IPFW Residency Requirements: \_\_\_\_\_ 32 credits at 200 level or above at IPFW \_\_\_\_\_ with 15 of 32 credits at 300-400 in major  
 B.S. Requirements: \_\_\_\_\_ 120 credits \_\_\_\_\_ 30 credits 300-400 level \_\_\_\_\_ **2.3** GPA Major/2.0 Degree/Gen Ed \_\_\_\_\_ C- or above in Major/Gen Ed

**BIOLOGY, B.S.**  
**PLAN—ECOLOGY AND EVOLUTIONARY BIOLOGY (ECEV)**  
(Fall 2017-Summer 2018)

Term: Year: 20				Term: Year: 20			
Course No.	Course Title	Pre-Reqs	Crs.	Course No.	Course Title	Pre-Reqs	Crs.
BIOL 11700	Principles of Ecology & Evolution	Placement at or above MA 153	4	BIOL 11900	Principles of Structure & Function	Placement at or above MA 153	4
CHM 11500 (GB4)	General Chemistry	H.S. CHM or CHM 111 (C- or above grades); MA 154, 227, 229 level	4	CHM 11600	General Chemistry	CHM 115 (C- or above); MA 163, 165, 227, or 229 level	4
ENG W131 (GA1)	Reading, Writing, & Inquiry	Self-Place or ENG W129 (C- or above)	3	ENG W233 (Gen A/B)	Intermed Expos Writing	ENG W131 (C- or above)	3
BIOL 12000	Resource Seminar	Recommended first semester course	1	GB5	Gen Ed Social/Behavior		3
MA 22900 (GA3)	Calc Mngt Soc Biol I	MA 153	3	COM 11400 or HIST H125 (GA2/A&S)	Fundament of Speech or Great Debates		3
<b>Total Semester Credit Hours</b>			<b>15</b>	<b>Total Semester Credit Hours</b>			<b>17</b>

Term: Year: 20				Term: Year: 20			
Course No.	Course Title	Pre-Reqs	Crs.	Course No.	Course Title	Pre-Reqs	Crs.
BIOL 21700	Intermediate Ecology	BIOL 117 & 119 (C- or above)	3	BIOL 21800	Genetics & Molecular	BIOL 117/119 (C- or above); CHM 116 or permission	4
CHM 25500	Organic Chemistry	CHM 116; C: CHM 254	3	CHM 25600	Organic Chemistry	CMH 255; C: CHM 258	3
CHM 25400	Organic Chemistry Lab	C: CHM 255	1	CHM 25800	Organic Chemistry Lab	CHM 254; C: CHM 256	1
GB6	Gen Ed Hum/Artistic		3	STAT 24000	Stat Methods Biology	MA 153 (C- or above)	3
FL 11	Foreign Language 1		4	FL 12	Foreign Language 2	FL11/placement	4
<b>Total Semester Credit Hours</b>			<b>14</b>	<b>Total Semester Credit Hours</b>			<b>15</b>

Term: Year: 20				Term: Year: 20			
Course No.	Course Title	Pre-Reqs	Crs.	Course No.	Course Title	Pre-Reqs	Crs.
BIOL 21900	Principles of Funct Biol	BIOL 117/119 (C- or above); CHM 116 or permission	4	PHYS 22100	Gen Physics	PHYS 220	4
PHYS 22000	Gen Physics	MA 153	4	Gen Ed A/B	Gen Ed A or B course		3
STAT 34000	Elem Stat Methods II	STAT 240, 301, 307, or ECON 270 or PSY 201 (c- or above)	3	ECEV w/Lab (Approved Lab)	ECEV Elective w/Lab (Approved Elective)	√	3-4
ECEV w/Lab (Approved Lab)	ECEV Elective w/Lab (Approved Elective)	√	3-4	BIOL 52410, BIOL 58000, or FNR 50500	Evolution/Systematics (Approved Elective)	√	3
				@ @ (Elective)	Free elective		3
<b>Total Semester Credit Hours</b>			<b>14-15</b>	<b>Total Semester Credit Hours</b>			<b>16-17</b>

Term: Year: 20				Term: Year: 20			
Course No.	Course Title	Pre-Reqs	Crs.	Course No.	Course Title	Pre-Reqs	Crs.
GB7/71	Gen Ed Creat/Interdis		3	BIOL 49100 (GCAP)	Senior Biology Seminar	BIOL 217, 218 or 219; Senior	3
@ @ (Elective)	Free elective		3	@ @ (Elective)	Free elective w/UPPR (*if needed for 30 UPPR Cr)		3
@ @ (Elective)	Free elective		3	@ @ (Elective)	Free elective		3
Gen Ed A/B	Gen Ed A or B course (if needed or elective)		3-4	ECEV Elective (Approved Elective)	ECEV Elective (Approved Elective)	√	3-4
ECEV Elective (Approved elective)	ECEV Elective (Approved Elective)	√	3				
<b>Total Semester Credit Hours</b>			<b>15-16</b>	<b>Total Semester Credit Hours</b>			<b>12-13</b>

√ = See IPFW Bulletin or myBLUEprint for additional course prerequisites