### BIOLOGY, B.S. WITH TEACHER CERTIFICATE
**BIOLOGY (BIOT)**
*(Fall 2016-Summer 2017)*

### BIOLOGY BS CORE/SUPPORTING COURSES (64 credits)

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

#### Group A Elective with Laboratory (select 1 course/lab)
- **4 BIOI 33500 and 33600 Animal Behavior and Laboratory**
- **5 BIOI 55600 and 55800 Physiology I and Laboratory**
- **3 ENTM 20600 and 20700 General Applied Entomology and Laboratory**
- **3-4 Biology with Laboratory included: BIOI 34500, 43400, 44500, 50100, 50500, 52710, 54300, 57900 or 59800**

#### Group B Elective with Laboratory (select 1 course/lab)
- **4 BIOI 50900 and 58400 Molecular Biology & Applications and Laboratory**
- **4 BIOI 53700 and 56500 Immunobiology and Laboratory**
- **4 BIOI 56600 and 56700 Developmental Biology and Laboratory**
- **4 Biology Course including Laboratory: BIOI 21500, 31500, 35000 or 43700**

#### 3 Additional credits in A/B Electives to meet 16 credit hours in Biology Electives:
- **(BIOI 21500, 31500, 33500, 36000, 34500, 35000, 38100, 38200, 43400, 43700, 43800, 43900, 44500, 50100, 50500, 50200, 50500, 50600, 50900, 51500, 51600, 51810, 52000, 52410, 52710, 53300, 53700, 54000, 54300, 54400, 54600, 55600, 55800, 59000, 56500, 56600, 56700, 57900, 57810, 58000, 58200, 58400, 58600, 59200, 59800, ENTM 20600 or 20700, FNRS 50050 or 52300)**

### SUPPORTING COURSES

- **4 PHYS 22000 General Physics**
- **4 CHM 11500 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**
- **3 MA 16500 or MA 22900 Analytical Geometry & Calculus I or Calculus for Managerial, Social, & Biological Sciences I**
- **3 STAT 24000 Statistical Methods for Biology**
- **3 STAT 34000 Elem Stat Methods II**

### A&S LIBERAL ARTS REQUIREMENTS (6 credits — credits may vary with double counting options/language placement — see advisor)

- **3 Second Semester Writing (C- or higher)**
- **3 Speaking Requirement (B- or higher)**

### TEACHING REQUIREMENTS (42 Credits)

- **3 EDUC F200 & EDUC M101 Examining Self As Teacher & Lab/Field Experience**
- **3 EDUC W200 Using Cmprs Educ (B- or higher)**
- **3 EDUC H340 Educ & Amer Culture**
- **3 EDUC K306 Teaching Stud w/ Special Needs**
- **3/0 EDUC P250 & EDUC M201/M301 Educational Psychology & Lab/Field Experience**
- **3 EDUC S405 Middle & Jr High School**
- **3 EDUC Q400 Man & Env: Instl Method**
- **3 EDUC P475 Advol Dev & Class Mgmt**
- **3 EDUC X401 Crit Reading/Cont Area**
- **3/0 EDUC M449 & EDUC M401 Methods Teaching Sci HS & Lab/Field Experience**
- **12 EDUC M480/M401 Student Teaching**

### GENERAL EDUCATION REQUIREMENTS (33 Credits)

**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 (B- or higher)**
- **3 GA2 Category A2 -- Speaking and Listening (B- or higher)**
- **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**
- **3 Additional Credits -- Category A or B General Education courses**
- **3 GCAP Category C8--Capstone Experience (IPFW course only)**

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**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 3.0 GPA Major/Degree 3.0 C- or above in Major/Gen Ed
# BIOL 1700
- **Course Title:** Principles of Function Biology
- **Pre-Reqs:** BIOL 117 & 119 with C or higher, CHM 116
- **Crs.:** 4

# CHM 15000 (GB4)
- **Course Title:** General Chemistry
- **Pre-Reqs:** H.S. CHM or CHM 111 C- or better; MA 154, 227, 229 level
- **Crs.:** 4

# ENG W131 (GA1)
- **Course Title:** Reading, Writing, & Inquiry
- **Pre-Reqs:** Self-Place or ENG W129 (C- or above)
- **Crs.:** 3

# COM 11400 or HIST H125 (GA2/AS5)
- **Course Title:** Fundamentals of Speech or Great Debates
- **Crs.:** 3

# MA 22900 (GA3)
- **Course Title:** Calculus with Business Honors
- **Pre-Reqs:** MA 15300
- **Crs.:** 3

**Total Semester Credit Hours:** 17

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**Summer Courses:**

- **EDUC P475:** Adol Dev & Class Mgmt
- **EDUC X401:** Crit Reading/Cont Area
- **EDUC M449/M401:** Meth Teaching Sci HS/Field Exp
- **Biol A/B elec:** Approved BIOL elective

125 credits required for Bachelor of Arts degree

3.0 GPA required for BS degree with teaching certificate