### B.S. IN BIOLOGY (AOC: Cell Biology & Molecular Genetics) — DEGREE REQUIREMENT CHECK SHEET for students who matriculated summer 2015 through spring 2018

<table>
<thead>
<tr>
<th>Credit hours:</th>
<th>Purpose:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently enrolled in: ______ semester: ______________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently enrolled in: ______ semester: ______________</td>
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**AFTER SUCCESSFUL COMPLETION OF CURRENT ENROLLMENT, YOU NEED THE FOLLOWING:**

#### IUB GENERAL EDUCATION REQUIREMENTS:
- **Foundations:**
  - [ ] English Composition
  - [ ] Mathematical Modeling (fulfilled by major)

- **Breadth of Inquiry:**
  - [ ] Arts & Humanities (A&H)—6 credits; need: ______
  - [ ] Social & Historical (S&H)—6 credits; need: ______
  - [ ] Natural & Mathematical (N&M)—(fulfilled by major)

- **World Languages & Cultures:**
  - [ ] World Language—4th semester proficiency
    - OR World Cultures—6 credits
    - OR Approved international experience

  GenEd residency complete: Yes No If no, you need: ______

#### TOTAL HOURS REQUIREMENTS:

<table>
<thead>
<tr>
<th>Major Hours (A)</th>
<th>30</th>
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</thead>
<tbody>
<tr>
<td>College Elective Hours (B)</td>
<td></td>
</tr>
<tr>
<td>Elective Outside Hours (C)*</td>
<td>0</td>
</tr>
<tr>
<td>Total College Hours (A+B)</td>
<td>100</td>
</tr>
<tr>
<td>Total Credit Hours (A+B+C)</td>
<td>120</td>
</tr>
<tr>
<td>300/400-level Hours</td>
<td>36</td>
</tr>
<tr>
<td>IUB COLL. Res. after 60 credits</td>
<td>36</td>
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</tbody>
</table>

*Maximum of 20 Elective Outside Hours (C) allowed

**IUB COLL Res. after 60 credits:**

IPRP: Yes No If yes, needed credit hours may not be accurate.

Overall College GPA of 2.00 or higher is required.

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### CASE REQUIREMENTS:

- [ ] Public Oral Communication (COLL-P 155)
- [ ] English Composition
- [ ] Mathematical Modeling (fulfilled by major)
- [ ] Critical Approaches to the Arts and Sciences—must be done at IUB
- [ ] CASE A&H—2 courses; will count 2 GenEd; need: ______
- [ ] CASE S&H—2 courses; will count 2 GenEd; need: ______
- [ ] CASE N&M—fulfilled by major
- [ ] Intensive Writing (IW)—must be done at IUB inside the College
- [ ] Foreign Language (FL)—3rd semester proficiency

#### BIOLOGY MAJOR REQUIREMENTS:

- Major requirements must be completed with a C- or better.
- [ ] 30 BIOL hours: _____ needed
- [ ] 18 BIOL hours at the 300/400 level: _____ needed
- [ ] Major GPA of 2.00 or higher. Major GPA: ______

<table>
<thead>
<tr>
<th>BIOL-L 111</th>
<th>CHEM-C 117 and C 127</th>
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</thead>
<tbody>
<tr>
<td>BIOL-L 112</td>
<td>CHEM-C 341</td>
</tr>
<tr>
<td>BIOL-L 113</td>
<td>CHEM-C 342</td>
</tr>
<tr>
<td>BIOL-L 211 (P: L 112 and CHEM-C 117)</td>
<td>CHEM-C 343</td>
</tr>
<tr>
<td>BIOL-L 311</td>
<td>PHYS-P 201</td>
</tr>
<tr>
<td>BIOL-L 318</td>
<td>PHYS-P 202</td>
</tr>
</tbody>
</table>

- Four Biology lectures (see reverse for list)
  - [ ] ______________ (IUB)
  - [ ] ______________ (IUB)
  - [ ] ______________ (Advanced skills)
  - [ ] ______________

- Two Biology labs (see reverse for list)
  - [ ] ______________ (IUB)
  - [ ] ______________ (IUB)

Lectures + labs must = at least 18 credit hours

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**STATISTICS**

- PSY-K 300/310, SOC-S 371, SPEA-K 300, LAMP-L 316 OR STAT-S 300/303

**MATH**

- MATH-M 211 OR
- MATH-M 119 and M 120 OR
- MATH-V 119 and M 120
Biology B.S. degree with Area of Concentration: Cell Biology & Molecular Genetics

The following must equal at least 18 credit hours to fulfill the requirement for the Area of Concentration. Two of the upper-level lectures and both of the upper-level labs must be taken on the IU Bloomington campus.

Required Lecture Courses

a. BIOL-L 312 Cell Biology (3 cr.)

b. Biochemistry; choose one of the following options:
   - BIOT-T 440 Structure, Function, & Regulation of Biomolecules (3 cr.)
   - CHEM-C 383 Chemical Organization of Living Systems (3 cr.)
   - CHEM-C 483 Biological Chemistry (3 cr.)
   - CHEM-C 484 Biomolecules and Catabolism (3 cr.)

Elective Lecture Courses

Complete two of the following lectures; at least one must be from List B:

List A
- BIOL-B 373 Mechanisms of Plant Development (4 cr.)
- BIOL-L 321 Principles of Immunology (3 cr.)
- BIOL-L 331 Introduction to Human Genetics (3 cr.)
- BIOL-M 430 Virology Lecture (3 cr.)
- MSCI-M 480 Molecular Biology of Cancer (Approved topic: Cell Signaling and Fate) (3 cr.)

List B Advanced Skills
(courses that include analysis of primary scientific literature)
- BIOL-B 371 Ecological Plant Physiology (3 cr.)
- BIOL-L 410 Topical Issues in Biology (Approved topic: Genetics of Behavior) (3 cr.)
- BIOL-L 411 Transcription, Epigenetics, and Human Disease (3 cr.)
- BIOL-L 412 Analysis of Cancer Research (3 cr.)
- BIOL-L 417 Stem Cells in Development, Disease, and Regeneration (3 cr.)
- BIOL-L 485 Genetics, Biological Research (3 cr.)
- BIOL-L 486 Advanced Cell Biology (3 cr.)
- BIOL-L 487 Molecular Mechanisms of Development and Disease (3 cr.)
- BIOL-M 416 Biology of AIDS (3 cr.)
- BIOL-Z 466 Endocrinology (3 cr.)

Laboratory Courses

Choose at least one course from Group A.

Group A:
- BIOL-L 313 Cell Biology Laboratory (3 cr.)
- BIOL-L 319 Genetics Laboratory (3 cr.)

If only one course from Group A above is taken, then choose another course from the following options:

Group B:
- ANAT-A 464 Human Tissue Biology (4 cr.)
- BIOL-L 323 Molecular Biology Laboratory (3 cr.)
- BIOL-L 324 Human Molecular Biology Laboratory (3 cr.)
- BIOL-M 435 Viral Tissue Culture Laboratory (3 cr.) *
- BIOL-S 211 Molecular Biology, Honors (2 cr.) **
- BIOL-Z 469 Endocrinology Laboratory (2 cr.)
- BIOT-T 315 Biotechnology Laboratory (3 cr.)
- BIOT-T 425 Laboratory in Macromolecular Production, Purification, and Characterization (3 cr.)

* BIOL-M 435 has a prerequisite of BIOL-M 430 (either prior or concurrent).
** BIOL-S 211 Molecular Biology, Honors is a 5-credit lecture/lab course. Only 2 credit hours of this course count as a Group B lab in this Area of Concentration.

Note: BIOL-L 410 Topical Issues in Biology (2–3 cr.) may be used towards the Area of Concentration depending on the topic covered and with approval of the Director of Undergraduate Studies.

Most courses have prerequisites. Always check the Bulletin and the Schedule of Classes for course information before taking a course.