B.S. IN MOLECULAR LIFE SCIENCES (Developmental and Cellular Biology concentration) — DEGREE REQUIREMENT CHECK SHEET
For students who matriculated summer 2018 through spring 2019

Student Name/ID: _____________________________________ Purpose: ______________________________ Date: ___________________

Credit hours:
Currently enrolled in: ______ semester: ______________
Currently enrolled in: ______ semester: ______________

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: ______

MOLECULAR LIFE SCIENCES MAJOR REQUIREMENTS:
Major requirements must be completed with a C- or better.

- 50 major hours: ______ needed
- 18 major hours at IUB: ______ needed
- 18 major hours at 300/400 level: ______ needed
- 14 concentration hours: ______ needed
- Major GPA and concentration GPA ≥ 2.000. Major GPA: ______ Concentration GPA: ______

IUB COLLEGE RESIDENCY:
- After 60 credits:
  - PHYSICS
    - PHYS-P 201 OR PHYS-P 221
  - PHYSICS
    - PHYS-P 202 OR PHYS-P 222

Overall College GPA of 2.000 or higher is required.

<table>
<thead>
<tr>
<th>Total Hours Requirements</th>
<th>Required</th>
<th>Complete</th>
<th>Needed</th>
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</thead>
<tbody>
<tr>
<td>Major Hours (A)</td>
<td>50</td>
<td></td>
<td></td>
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<tr>
<td>College Elective Hours (B)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Elective Outside Hours (C)*</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Total College Hours (A+B)</td>
<td>100</td>
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<tr>
<td>Total Credit Hours (A+B+C)</td>
<td>120</td>
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<tr>
<td>300/400-level Hours</td>
<td>36</td>
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<tr>
<td>IUB COLL. Res. after 60 credits</td>
<td>36</td>
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* Maximum of 20 Elective Outside Hours (C) allowed

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

Math, physics, and statistics requirements must be completed with a C- or better, but they do not count toward major GPA or major hours.

**BIOLOGY**
- BIOL-L 112
- BIOL-L 211 (P: L 112 and CHEM-C 117)
- BIOL-L 323 OR BIOT-T 315 OR BIOL-X 325
- BIOL-L 312
- MLS-M 420 OR MLS-M 430
- BIOL-L 311 OR BIOL-M 417
- Lab: BIOL-L 313 (3 cr.) OR BIOL-L 319 (3 cr.) OR BIOL-Z 318 (2 cr.)
- Two elective lectures (see reverse for list):
  - 
  - 

**CHEMISTRY**
- CHEM-C 117 and CHEM-C 127
- CHEM-C 341
- CHEM-C 342
- CHEM-C 343
- CHEM-C 383 OR CHEM-C 483

**MATH**
- MATH-M 120 OR MATH-M 211 OR MATH-M 212

**STATISTICS**

**PHYSICS**
- PHYS-P 201 OR PHYS-P 221
- PHYS-P 202 OR PHYS-P 222
Molecular Life Sciences B.S. degree with concentration in Developmental and Cellular Biology

Student pursuing the Concentration in Developmental and Cellular Biology explore topics in cell biology, developmental biology, genetics, and molecular biology. The course sequence offers both introductory and advanced level courses in each of these disciplines. Students will learn how individual cells function, how they interact with their neighbors, and how a single cell grows and develops into a fully functional adult.

The concentration requires at least 14 credit hours, including the requirements listed below.

Both of the following courses:
- BIOL-L 311 Genetics (3 cr.) (fall, spring, and summer)
- BIOL-L 417 Stem Cells in Development, Disease, and Regeneration (3 cr., P: BIOL-L 311) (spring)

One (1) course from the Laboratory list:
- BIOL-L 313 Cell Biology Laboratory (3 cr.) (fall and spring)
- BIOL-L 319 Genetics Laboratory (3 cr., P or C: BIOL-L 311) (fall and spring)
- BIOL-Z 318 Developmental Biology Laboratory (2 cr., P or C: BIOL-L 417)

Two (2) courses from the Electives list:
- BIOL-L 388 Digital Biology: A Survey of Topics in Bioinformatics and Genomics (3 cr.) [or MLS-M 388] (spring)
- BIOL-L 485 Genetics, Models of Human Disease, and Critical Analysis of Biological Research (3 cr., P: BIOL-L 311) (fall)
- BIOL-L 486 Advanced Cell Biology (3 cr., P: BIOL-L 312) (spring)
- BIOL-L 487 Molecular Mechanisms of Development and Disease (3 cr., P: BIOL-L 417) (spring)
- MLS-M 388 Digital Biology: A Survey of Topics in Bioinformatics and Genomics (3 cr.) [or BIOL-L 388] (spring)
- MLS-M 450 Molecular Mechanisms of Cancer (3 cr.)
- PSY-P 410 Development of the Brain and Behavior (3 cr., P: PSY-P 326 or PSY-P 346)
- PSY-P 457 Topics in Psychology (approved topic: “Development and Maintenance of Brain Circuits”) (variable credit hours; see Schedule of Classes)
- PSY-P 466 Molecular and Cellular Neurobiology (3 cr., P: PSY-P 326 or PSY-P 346)
- PSY-P 470 Molecular Methods in Neuroscience Research (3 cr., P: PSY-P 326 or PSY-P 346)

Notes
- For this concentration, it is wise to take BIOL-L 311 Genetics (P: BIOL-L 211) relatively early.
- Except for the GPA requirement, a grade of C- or higher is required for a course to count toward a requirement in the concentration.
- A GPA of at least 2.000 for all courses taken in the concentration—including those where a grade lower than C- is earned—is required.
- Most courses have prerequisites. Always check the Bulletin and the Schedule of Classes for course information before taking a course.