# Program Worksheet: Honours Cell and Developmental Biology

## First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 112</td>
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<tr>
<td>BIOL 121</td>
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<tr>
<td>BIOL 140 or 180</td>
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<tr>
<td>One of CHEM 111, 121, 141 or CHEM 120 &amp; 115</td>
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<tr>
<td>CHEM 123 or CHEM 130 &amp; 135</td>
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*One of:*

- PHYS 101, 106, 107, 117, 131
- One of:
  - CPSC 100, 103, 110, 301 or DSCI 100

*One of:*

- MATH 100, 102, 104, 110, 120, 180, or 184
- One of:
  - MATH 101, 103, 105, or 121

**Communication Requirement 6cr of WRDS 150; SCIE 113; any of ENGL 100, 110, 111, 112, 120, or 121; SCIE 300 or CHEM 300; APSC 176; LFS 150; FRST 150, Arts One; ASTU 100, 101:***

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## Second Year

### *Biology Fundamentals Courses:*

- BIOL 200
- BIOL 201
- BIOL 230
- BIOL 234
- BIOL 260

### *Organismal Courses:*

- Two from
  - BIOL 203
  - BIOL 204
  - BIOL 205
  - BIOL 209
  - BIOL 210
  - MICB 211

**One of:**

- CHEM 233
- CHEM 235
- CHEM 203
- CHEM 223
- CHEM 225

&

- CHEM 205

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## Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
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<tbody>
<tr>
<td>BIOL 300</td>
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<tr>
<td>BIOL 340</td>
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<tr>
<td>BIOL 341</td>
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<tr>
<td>BIOL 347</td>
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* BIOC 302 or 303

**BIOL 335**

**BIOL 336**

### ***Cell and Developmental Biology Selections [12 to 15cr]:***

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## Fourth Year

<table>
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<tr>
<th>Course</th>
<th>Requirement</th>
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</thead>
<tbody>
<tr>
<td>BIOL 447</td>
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<tr>
<td>BIOL 449</td>
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**Life Science Selections [9cr]:**

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**Life Science Selection:***

Life Science selections that count towards the Science credit requirement: Any third- or fourth-year course in BIOC, CAPS, MICB, or MRNE that is open for credit to Life Science majors plus: ENVR 430, EOSC 470, 474, 475, 478, GEOS (or GEOB) 307, 407, FNH 350, 351, 451, MATH 462, MEDG 410, 419, 420, 421, PCTH 305, 325. Life Science selections that do not count towards the Science credit requirement: APBI 311, 312, 314, 315, 318, 342, 401, 411, 418, 419, 442, 444, CONS 330, 440, 486, 496, FRST 302, 310, 385, 386, 395, 399, 444, 485, 495.

**Note:** Life Science Selections do not include BIOL 300 and 336. Four credits of Biology lab selections are required; additional credits from Biology Lab Selections may count as Life Science Selections [i.e., BIOL 351 (4cr) = 2cr Biology Lab Selections & 2cr Life Science Selections].
BIOL 448 – Directed Studies: A maximum of 3 credits BIOL 448 can count toward life science selections.

***Cell and Developmental Biology Selections (6cr of 12cr MUST be 4xx level) and if the student takes BIOC 302 instead of BIOC 303 they need to complete 3 additional credits of CELL electives:

- BIOL 331 - Developmental Biology
- BIOL 337 – Introductory Genetics Laboratory
- BIOL 338 – Introduction to Genomics
- BIOL 351 – Plant Physiology I
- BIOL 352 – Plant Physiology II: Plant Development
- BIOL 362 – Cellular Physiology
- BIOL 370 - Principles of Muscle Physiology and Energetics
- BIOL 371 - Principles of Neurobiology I
- BIOL 372 - Principles of Neurobiology II
- BIOL 423 - Plant Stress Ecophysiology
- BIOL 430 - Genome Evolution
- BIOL 431 – Evolutionary Cell Biology
- BIOL 432 – Research Strategies and Techniques in Cell Biology
- BIOL 433 – Plant Genetics
- BIOL 436 – Integrated Functional Genomics
- BIOL 437 – Laboratory in Animal Cell Molecular Biology
- BIOL 440 – Plant Genomics
- BIOL 441 - Animal Cell Biology
- BIOL 450 - Molecular Adaptation of Animals to the Environment
- BIOL 451 - Comparative Neurobiology
- BIOL 456 - Comparative and Molecular Endocrinology
- BIOL 458 - Developmental Neurobiology
- BIOL 463 - Gene Regulation in Development
- BIOL 464 - Animal Developmental Genetics

Faculty of Science Elective Requirements:
(May be any level if the upper-level requirement of 48 upper-level credits including at least 30 credits from the Faculty of Science is satisfied. Also, up to 18 credits of course work in a faculty other than Science or Arts may be taken for credit.)

- **Arts Electives - 12 credits** from the Faculty of Arts.
- **Electives** – May be from any faculty.