Honours Biology

Welcome!
Seek advise if you are.....

- having academic performance problems, personal issues, ongoing illness, etc.
- thinking of changing your academic plan (e.g., thinking of specializing)
- planning an exchange or taking courses from another University
- looking at going to a professional school or doing a MSc. or PhD.

Dr. Christine Dupont
Ms. Sue Whyte
Dr. Simon Chuong
Dr. Kesen Ma
Dr. Bruce Wolff
Dr. Jonathan Witt
(Env. Sci Ecology only)
Honours Biology

Why Biology?
Honours Biology
Honours Biology – Programs

Honours Biology

Regular

Co-op

Non-specialized - fairly open
or
Specialized - more defined grouping of courses

- Animal Biology
- Biotechnology
- Environment
- Microbiology
- Molecular Genetics
- Plant Biology
# Honours Biology – Non Specialized

**Required 100- & 200-level Biology Courses**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>110</td>
<td>120</td>
<td>130</td>
<td>130L</td>
</tr>
<tr>
<td>150</td>
<td>165</td>
<td>239</td>
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<tr>
<td>240L</td>
<td>273</td>
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Total = 4.5 units

**Required Chemistry Courses**

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<tbody>
<tr>
<td>120</td>
<td>120L</td>
<td>123</td>
<td>123L</td>
</tr>
<tr>
<td>266</td>
<td>266L</td>
<td>237</td>
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Total = 3.0 units

**Science Electives**

Science Electives from BIOL, CHEM, EARTH, PHYS or SCI

- 1.
- 2.

Total = 1.0 unit

**Math Requirement**

1. One of MATH 114, 127 or PHYS 111
2. STAT 202

Total = 1.0 unit

**Required 300- & 400-level Biology Courses**

A total of 6.5 units of 300- & 400-level Biology courses.

At least 2.5 of the 6.5 units must be at the 400-level.

1. Biol 308
2. Biol 359
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
11. 
12. 

**Elective Courses**

Max. 3.0 units of SCI courses

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 

Honours Biology Non-Specialized – total # of units is 21.5

Recommended 1.0 units (2 courses) from Arts

Total Electives = 5.5 units
## Honours Biology – Animal Biology

### Required 100- & 200-level Biology Courses

<table>
<thead>
<tr>
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<td>211</td>
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<td>240</td>
<td>240L</td>
<td>273</td>
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Total = 5.25 units

### Required Chemistry Courses

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<td>266</td>
<td>266L</td>
<td>237</td>
<td>237L</td>
</tr>
</tbody>
</table>

Total = 3.0 units

### Science Electives

Science Electives from BIOL, CHEM, EARTH, PHYS or SCI

1. 

Total = 0.5 unit

### Math Requirement

1. One of MATH 114, 127 or PHYS 111

Total = 1.0 unit

### Elective Courses

Max. 3.0 units of SCI courses

1. 

2. 

3. 

4. 

5. 

6. 

7. 

8. 

9. 

10. 

11. Animal Specialization - total # of units is 22.0

Recommended 1.0 units (2 courses) from Arts

Total Electives = 5.5 units

Name:  
ID Number:
Honours Biology – Academic plans and degree requirements

Academic Plans offered by the Department of Biology

Honours Major Academic Plans - Regular and Co-op

+ Honours Biology (No Specialization)
+ Honours Biology (Animal Biology Specialization)
+ Honours Biology (Biotechnology Specialization)
+ Honours Biology (Environment Specialization)
+ Honours Biology (Microbiology Specialization)
+ Honours Biology (Molecular Genetics Specialization)
+ Honours Biology (Plant Biology Specialization)

+ Honours Biochemistry (Regular and Co-op)
+ Honours Biomedical Sciences (Regular only)
+ Honours Bioinformatics (Co-op)
+ Honours Environmental Science/Ecology (Regular and Co-op)

Yes, you can change programs!
Marks to maintain for Honours Biology:

- Major average (BIOL courses): 60%
- Faculty average (all Science courses): 60%
- Overall average (all courses): 60%

What happens if I don’t make 60%?
- “15 factor”
- will I be kicked out?
Honours Biology – Academic plans and degree requirements

Program hints

 ✓ Plan carefully!!
  – Plan ahead
  – Enrolling in W13 courses is all up to you
  – Make sure you meet all requirements for a degree

 ✓ Pay attention!!!
  – New courses, new pre-requisites

 ✓ Keep organized!!
Honours Biology – Future Plans

• ONLY YOU CAN DO IT!!
• if I do/don’t take this course, what are the implications later on?

Biol 240  Biol 240L  (both these are required for Honours Biology)

Biol 241  Introduction to Applied Microbiology
(not required for all programmes)

Biol 345: Microorganisms in Foods
Biol 348L: Laboratory Methods in Microbiology
Biol 441: Immunology
Biol 442: Virology
Biol 443: Fermentation Biotechnology
Biol 444: Microorganisms and Disease
Biol 446: Microbial Ecology
Biol 447: Environmental Microbiology
Biol 448: Microbial Physiology & Biochemistry
Biol 449: Public Health Microbiology
Biol 466: Advanced Geochemical Microbiology
Biol 474: Bioprocessing
Biol 475: Current Topics in Applied Microbiology
Honours Biology – Future Plans

Biol 239: Genetics

Biol 239

Biol 359

Biol 309

Biol 303

Biol 308

Biol 479

Biol 480

Biol 335L

Biol 342

Biol 432

Biol 365/366

Biol 465

Biol 467

Biol 428

Biol 431

Biol 434

Biol 403

Biol 438

Biol 434

Biol 438

Biol 442

Biol 441
Honours Biology – Future Plans

Honours Biology (Biotechnology Specialization)

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<tbody>
<tr>
<td>Biol 130 Introduction to Cell Biology 0.5 unit (Lec, Tut)</td>
<td>Biol 166 Diversity of Life 0.5 unit (Lec)</td>
<td>Biol 240 Fundamentals of Microbiology 0.5 unit (Lec)</td>
<td>Biol 238 Genetics 0.5 unit (Lec, Lab)</td>
<td>Biol 308 Principles of Molecular Biology 0.5 unit (Lec)</td>
<td>Biol 331 Advanced Cell Biology 0.5 unit (Lec, Tut)</td>
<td>Biol 342 Molecular Biotechnology 1 0.5 unit (Lec, Tut)</td>
<td>Biol 432 Molecular Biotechnology 2 0.5 unit (Lec)</td>
</tr>
<tr>
<td>Biol 130L Cell Biology Laboratory 0.25 unit (Lab)</td>
<td>Biol 120 Introduction to Plant Structure and Function 0.5 unit (Lec, Lab)</td>
<td>Biol 240L Microbiology Laboratory 0.25 unit (Lab)</td>
<td>Biol 273 Principles of Human Physiology 1 0.5 unit (Lec)</td>
<td>Biol 309 Analytical Methods in Molecular Biology 0.5 unit (Lec, Tut)</td>
<td>Biol 433 Plant Biotechnology 0.5 unit (Lec, Tut)</td>
<td>Biol 483 Animal Cell Biotechnology 0.5 unit (Lec)</td>
<td>Biol 474 Bioprocessing 0.5 unit (Lec, Tut)</td>
</tr>
<tr>
<td>Biol 110 Introduction Zoology 0.5 unit (Lec, Lab)</td>
<td>Chem 123 Chemical Reactions, Equilibria, and Kinetics 0.5 unit (Lec, Tut)</td>
<td>Chem 266 Basic Organic Chemistry 1 0.5 unit (Lec)</td>
<td>Biol 241 Applied Microbiology 0.5 unit (Lec, Lab)</td>
<td>Biol 359 Evolution 0.5 unit (Lec)</td>
<td>Biol 355L Molecular Biology Techniques 0.5 unit (Lec, Lab, Tut)</td>
<td>Biol 443 Fermentation Biotechnology 0.5 unit (Lec, Lab)</td>
<td>Biol 428 Plant Molecular Genetics 0.5 unit (Lec, Lab, Tut)</td>
</tr>
<tr>
<td>Biol 150 Organismal and Evolutionary Ecology 0.5 unit (Lec)</td>
<td>Chem 133L Chemical Reaction Laboratory 2 0.25 unit (Lab, Tut)</td>
<td>Chem 266L Organic Chemistry Laboratory 0.25 unit (Lab)</td>
<td>Biol 337 Introductory Biochemistry 0.5 unit (Lec, Tut)</td>
<td>Biol 300/400X Biotechnology Elective 0.5 unit</td>
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<td>Elective 0.5 unit</td>
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<td>Chem 120 Physical and Chemical Properties of Matter 0.5 unit (Lec, Tut)</td>
<td>Stat 202 Introductory Statistics for Scientists 0.5 unit (Lec, Tut)</td>
<td>Biol 237 Introductory Biochemistry Lab 0.25 unit (Lab, Tut)</td>
<td>Biol 237L Introductory Biochemistry Lab 0.25 unit (Lab, Tut)</td>
<td>Elective 0.5 unit</td>
<td>Elective 0.5 unit</td>
<td>Elective 0.5 unit</td>
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</tr>
<tr>
<td>Chem 120L Chemical Reaction Laboratory 1 0.25 unit (Lab)</td>
<td>Elective 0.5 unit</td>
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Note: Must have minimum of five courses (2.5 units of BIOL at the 400-level)

It is highly recommended that two courses (1.0 unit) out of eleven (5.5 units) free electives be from the Faculty of Arts. It is recommended that one of these courses be selected from those offered by the English Department.

Biology electives for the Biotechnology Specialization: Must take two courses (1.0 unit) of the following biology courses: Biol 321, 323, 349, 431, 439, 467, 499.

Continuation in program: Overall Average of 60% Biology Average of 60% Science Average of 60% (cumulative)
Honours Biology - Requirements

Get familiar with our website
Faculty & Academics → Science → Departments → Biology → Undergrad studies (biology.uwaterloo.ca)
• Undergraduate Courses, Descriptions and Instructors
• New courses and updates
• BIOL 499 Senior Honours Project information
• Biology Field Courses (information on the Ontario Universities Program in Field Biology)
• TA application, volunteering possibilities
• Academic Plans

NSERC summer scholarships – check ‘awards’ link
Honours Biology - Information

✓ Course web sites - many use UW-Learn
  • professor’s expectations, class resources, due dates, messages
  • check-in routinely to see what’s new

✓ e-mail
  • be sure the e-mail address listed in Quest is the one you use
  • note addresses for your Professors and Teaching Assistants
  • check your uwaterloo e-mail regularly to avoid missing school-related messages

✓ BUGS
  • Biology Undergraduate Society – get involved!

✓ Twitter
  • Biology Department : @WaterlooBio
Honours Biology - Academic Help:

✓ course professor ↔ instructor (lab/tutorial) ↔ teaching assistants
  (grad students, senior undergrads) ↔ peers in the course ↔ you

✓ Science Student Help Team (SSHT)
  • current UW science students – they’ve already been through this!

✓ Academic Advisors – some for each program we offer
  • listed on Faculty of Science web pages

best advice...
✓ go to classes; be an active, engaged participant while you’re there
✓ experience & learn as much as you can from all the people you meet at UW
✓ have fun!
Honours Biology – Rules for success...

“Learning is like tanning: it takes time and the right exposure”

Elyas Fermand. Science and Business, Coop 2008

✓ Attend class and pay attention (take notes)
✓ Get (and stay) organized
✓ Practice self-assessment
✓ **READ** and **WRITE**
✓ Be proactive – get help from your profs/peers
Honours Biology – FAQs

How do I get my WHMIS training?
http://www.safetyoffice.uwaterloo.ca/hse/training/whmis_courses_students.htm
You need your Quest userid and password to access UW-Learn

What about Extended Learning (Distance Education) courses?
Are they equivalent to on campus courses? Yes - but....

What about ELPE?
All Science students must register for and write!
Wed Dec. 5 (1 hr) Alternative date Apr. 10, 2013 if you got >80% E4U
https://uwaterloo.ca/writing-centre/english-language-proficiency-exam-elpe

Can I drop a course?
Yes, but there may be penalties.....
Honours Biology – FAQs

What dates do I need to know?
- Sept 28 – 100% refund, no academic penalty, not on transcript.
- Oct 26 – 50% refund, no academic penalty (WD)
- Nov 17 - no refund, no academic penalty (WD)
- Nov 18 – Dec 5 no refund, mark of WF (= 32%)
- After Dec 5 - must petition to drop

What do I need for professional school applications?
- most professional schools require full course loads for admission,
check your preferred school for details.

What about pre-enrolment? Do I need to do this?
- YES! Pre-enrolment ensures that you get into the courses
you need and limits conflicts.
Honours Biology

Questions?

If you’d like a copy of these lecture slides, they will be posted for download on the Biology Undergraduate web page.