

Integrative Biology 100: Biology in Today's World FALL 2021 Syllabus

Course Instructor: Dr. Li-Qing Chen, ib100-onl@life.illinois.edu

Office Hours: by appointment in 379 ERML

Teaching Assistants: Gabriel Beuchat

Prerequisites: NA

Credit Hours: 3 credit hours

Requirements Met: Gen Ed; credit is not given for both Integrative Biology 100 and 101

Course Description: Integrative Biology 100 ONL is a general education course designed to introduce you to the biology topics that are likely to be meaningful to you during your life. The course includes an in-depth focus on three contemporary issues in modern biology: the environment, traditional and molecular genetics, and evolution. You will learn the biological concepts that will help you make informed decisions in the market place, the voting booth, your doctor's office, or a school board meeting.

Required Textbook: Anne Houtman, Megan Scudellari, and Cindy 2021. *Biology Now*, Third Edition. W. W. Norton & Company, Inc.

Course Goals: Upon completing this course, students will be able to:

- Distinguish scientific hypotheses and theories from pseudoscientific explanations of the biological world
- Apply the process of scientific investigation to answer questions about the biological world
- Use your knowledge base of biology as a foundation for life-long learning in the biological sciences

Course Structure: IB 100 is an online course with no face-to-face class meetings. All lessons, learning activities, and assessments will be conducted in the Moodle Learning Management System (LMS). Lessons and graded online learning activities will take advantage of a wide range of biology web resources, including text, video, animations, simulations, blogs, etc. You will participate in a once weekly synchronous online discussion using Zoom and also participate in asynchronous online discussions with your instructors and classmates. All course activities will be conducted online.

Course Outline

- Module 1: The Process of Science
- Module 2: Ecological Interactions
- Module 3: Energy Flow and Matter Cycling
- Module 4: Cell Reproduction and Heredity
- Module 5: Molecular Genetics
- Module 6: Evolution
- Module 7: Biotechnology

Course Grading

Grade	Percent
A+	100.00+
A	94.00–99.99
A-	90.00-93.99
B+	87.00-89.99
B	84.00–86.99
B-	80.00–83.99
C+	77.00-79.99
C	74.00–76.99
C-	70.00–73.99
D+	67.00-69.99
D	64.00–66.99
D-	60.00–63.99
F	0.00–59.99

Grade Categories and Weighting Factors

Assignments are worth 100 points unless otherwise noted.

Activity Categories	Weight
Lessons	20%
Reading Quizzes (InQuizitives)	25 %
Synchronous Discussion Session Attendance and Activity	10 %
Assignments	25 %
Final Video Project	20 %
Total	100 %

All course activities have due dates and contribute to earning points towards the overall course grade. No activities will be accepted past their due dates.

Module Overviews and Check Lists: Each module will begin with a module overview that explains the module topic, what general learning goals you are expected to achieve, in what activities you will participate, and how much time the module activities are expected to require. A checklist will help you be sure you have completed the module activities. The module activities are explained in greater detail below. You can find the due dates of specific assignments in the weekly overview tabs.

Lessons: The instructor will provide lessons to clarify common misconceptions that students have in each module. Questions embedded in the video must be answered to advance through the video and to earn points. Multiple attempts at the lesson videos are allowed to encourage students to review challenging concepts, and the highest grade earned up until the due date will be recorded.

Reading Quizzes (InQuizitives): The textbook publisher has created an adaptive quiz management system, called InQuizitive, to help students test AND improve their mastery of the assigned textbook chapters each week. The questions presented to students depend both on their stated confidence (with higher confidence leading to fewer questions that are worth more points) and whether they answered the previous question correctly. If an incorrect answer is given, the student will be directed to the relevant textbook pages to review. Multiple attempts at the InQuizitives are allowed to encourage

COPYRIGHT © 2021 Li-Qing Chen, Wendy H.Yang and Allison O'Dwyer. All rights reserved. The content of the syllabus, lectures, and other class materials for this course is copyrighted or re-used with permission from the original sources. The content is intended for IB 100 students' private use. It is expressly forbidden to make copies of course materials without the express written permission of the University of Illinois Board of Trustees.

students to review challenging concepts, and the highest grade earned will be recorded. Please be sure to click on the provided InQuizitive links so that grades are automatically transferred from InQuizitive into the Moodle grade book; if InQuizitive is accessed directly from the publisher when a quiz is completed, then clicking on the Moodle link later will transfer the grade previously earned.

Module 7 does not have InQuizitives but has a reading quiz. Students will review the material from the readings and earn points. Multiple attempts at the reading quiz is allowed to encourage students to review challenging concepts, and the highest grade earned will be recorded.

Synchronous Discussion Session (SDS): Each Wednesday, multiple time slots will be available for students to participate in a one-hour synchronous discussion session using Zoom. Students may choose a time that is convenient using the TA Selection tool. Students will attend this chosen section for the remainder of the course. Students receive credit for attending the SDS AND for completing an activity during the session. The SDS activity must be submitted during the session to receive credit. Students will receive one free pass for the semester, receiving full SDS credit for one missed session.

Assignments: The purpose of the assignments is to give students practice in evaluating biologically relevant web resources they may encounter in their everyday lives and to give students the opportunity to interact with their classmates. Assignments include orientation activities and all database activities.

Database Assignments: Together as a learning community, we will work to build our own information database on reputable recent news articles related to Biology. This database project is intended to be an engaging way to practice your research and critical evaluation skills while learning more about specific examples of Biology that are of interest to you. Here you will:

- Choose from a list a topic you would like to explore further
- Find a recent (under 1 year) news article on that topic
- Review the article and evaluate its credibility
- Post this information to our database
- Assess your work and the work of your peers
- Write a reflection post on your participation in the database

Students will write about their articles in Modules 1, 3, 5, and 7 and they will evaluate and reflect on their work in Modules 2, 4, 6, and 8. Thus, students will write, assess, and reflect on 4 articles in total for the course. For all details see Database Instructions and Rubric.

Final Video Project: The purpose of the final video project is for students to synthesize knowledge about biological concepts they learned in class and to practice talking about biological concepts to the public. Students will be encouraged to share their videos with friends and families. The videos will be peer graded. The final video project fulfills the new University requirement that at least 20% of the overall course grade is earned through activities with student identity verification.

Extra Credit: There are several ways to earn up to 2% overall extra credit for the course, including:

Community Participation: Community participation in an online learning environment is essential to your commitment to engagement with our course. Thus, you have an opportunity to both build self-advocacy skills and earn extra credit in this course through your participation in

COPYRIGHT © 2021 Li-Qing Chen, Wendy H. Yang and Allison O'Dwyer. All rights reserved. The content of the syllabus, lectures, and other class materials for this course is copyrighted or re-used with permission from the original sources. The content is intended for IB 100 students' private use. It is expressly forbidden to make copies of course materials without the express written permission of the University of Illinois Board of Trustees.

our Q & A Forum. Ways to attain extra credit points in this Community Participation category are listed below:

- 5 points: Q & A Forum postings and replies. Each post is worth 1 point and each reply is worth 2 points (for a maximum of 5 points total). Ideas for posts include:
 - Any non-personal (i.e. grade-related) questions related to the course
 - Reply to any question asked

Self-Assessments: The purpose of this self-assessment is for you to apply what you have learned and demonstrate your understanding of the biological concepts addressed in this module. Use the learner objectives listed at the beginning of each lesson video to guide your studying. Self-assessments consist of 20 multiple choice questions worth 0.25 point each for a total of 5 EXTRA CREDIT points. **You will have only one graded attempt at the self-assessment.** This is a closed book assessment that must be completed independently. Follow the guidelines from the [University of Illinois Standards for Academic Integrity](#).

Surveys: We very much value your feedback! Several surveys will be available throughout the course and are worth 5 points each. Thanks in advance for helping us to continually develop this course to be better.

Getting Help

- See our [Need help? page here](#)
- First, for questions about course content, activities, deadlines, technical problems, etc., please check the Syllabus, Course Frequently Asked Questions (FAQs), or General Q & A forum to see if someone else has already asked your same question and received a response
- If your question isn't there yet, post your question to the General Q & A forum. Please help build our online community and help your peers out if you know the answer!
- If you have a personal question email the instructor at ib100-online@illinois.edu
- If you have technical problems, please fill out [Learn@Illinois support form](#)

Academic Integrity: Academic dishonesty will not be tolerated. Should an incident arise in which a student is thought to have violated academic integrity, the student will be processed under the disciplinary policy set forth in the Illinois Academic Integrity Policy. If you do not understand relevant definitions of academic infractions, contact the instructor for an explanation within the first week of class. Ignorance of the course or University policies on academic integrity is no excuse.

Examples of academic dishonesty include the following:

- Cheating
- Fabrication
- Facilitating infractions of academic integrity
- Plagiarism
- Bribes, favors, and threats
- Academic interference
- Examination by proxy

COPYRIGHT ©2021 Li-Qing Chen, Wendy H. Yang and Allison O'Dwyer. All rights reserved. The content of the syllabus, lectures, and other class materials for this course is copyrighted or re-used with permission from the original sources. The content is intended for IB 100 students' private use. It is expressly forbidden to make copies of course materials without the express written permission of the University of Illinois Board of Trustees.

- Grade tampering
- Non-original works

Special Accommodations: We realize that you have a life beyond the scope of this course. If you are unable to complete an assignment because of professional or personal obligations or emergency situations, you should notify the instructor as soon as possible. If you have advance notice of a problem, prepare the forum or assignment ahead of time and post it early. This will give your classmates a head start in reading and responding to your work. The time frame of this course is short. We are here to help if you need support.

If you need to request disability accommodations, please schedule an appointment with Dr. Chen or email your DRES letter to Dr. Chen at the start of the course.

Course Schedule

* Weeks shown for Fall/Spring Semester. There are no course activities during the week of Fall Break (Week 5 during Fall Semester) or Spring Break (Week 2 during Spring Semester).

**All deadlines are at 11:55 PM Central Time except for Synchronous Discussion Sessions.

Module 1: The Process of Science (October 18-24)

Due Date*	Activity	Estimated Time to Complete
Monday 10/18	<ul style="list-style-type: none"> ▪ Module 1 Lesson: The Process of Science 	30 mins-1 hr
Tuesday 10/19	<ul style="list-style-type: none"> ▪ TA Selection ▪ Module 1 Textbook Readings ▪ Module 1 InQuizitive 	2-3 hrs
Wednesday 10/20	<ul style="list-style-type: none"> ▪ M1/M2 Database Topic Choice ▪ Module 1 Synchronous Discussion Session (SDS): Attend at 10 AM, 12 PM (noon), or 6 PM ▪ Orientation Activities (see Orientation tab above) ▪ Read the Syllabus ▪ Orientation Lesson ▪ Getting to Know Your Classmates ▪ Academic Integrity Lesson 	3 hrs
Friday 10/22	<ul style="list-style-type: none"> ▪ M1/M2 Database Entry Post: Submit this post to two places: ▪ M1/M2 Database ▪ M1/M2 Database Peer Grading Workshop 	1-2 hrs
Sunday 10/24	<ul style="list-style-type: none"> ▪ Extra Credit: Module 1 Self Assessment 	1-1.5 hrs

Module 2: Ecological Interactions (October 25 - 31)

Due Date*	Activity	Estimated Time to Complete
Monday 10/25	<ul style="list-style-type: none"> ▪ Module 2 Lesson: Ecological Interactions 	30mins-1hr
Tuesday 10/26	<ul style="list-style-type: none"> ▪ Module 2 Textbook Readings ▪ Module 2 InQuizitive 	2-3 hrs
Wednesday 10/27	<ul style="list-style-type: none"> ▪ Return to the M1/M2 Database Peer Grading Workshop and grade 3 peers assigned to you as well as self-assessing your own submission ▪ Module 2 Synchronous Discussion Session (SDS) 	1-1.5 hrs
Friday 10/29	<ul style="list-style-type: none"> ▪ M1/M2 My Top 2 Reflection Post 	1-2 hrs
Sunday 10/31	<ul style="list-style-type: none"> ▪ Extra Credit: Module 2 Self Assessment 	1-1.5 hrs

Module 3: Energy Flow & Matter Cycling (November 1-7)

Due Date*	Activity	Estimated Time to Complete

COPYRIGHT © 2021 Li-Qing Chen, Wendy H. Yang and Allison O'Dwyer. All rights reserved. The content of the syllabus, lectures, and other class materials for this course is copyrighted or re-used with permission from the original sources. The content is intended for IB 100 students' private use. It is expressly forbidden to make copies of course materials without the express written permission of the University of Illinois Board of Trustees.

Monday 11/1	<ul style="list-style-type: none"> ▪ Module 3 Lesson: Energy Flow & Matter Cycling ▪ Briefly review the Final Video Project tab to learn about your final for this course: <ul style="list-style-type: none"> ▪ See Final Video Project Overview and the Final Video Project FAQs 	1-1.5 hrs
Tuesday 11/2	<ul style="list-style-type: none"> ▪ No activities: Election Day. Students can learn more about voting here. 	2-3 hrs
Wednesday 11/3	<ul style="list-style-type: none"> ▪ Module 3 Textbook Readings ▪ Module 3 InQuizitive ▪ M3/M4 Database Topic Choice ▪ Module 3 Synchronous Discussion Session (SDS) 	1-1.5 hrs
Friday 11/5	<ul style="list-style-type: none"> ▪ M3/M4 Database Entry Post: Submit this post to two places: <ol style="list-style-type: none"> 1. M3/M4 Database 2. M3/M4 Database Peer Grading Workshop 	1-2 hrs
Sunday 11/7	<ul style="list-style-type: none"> ▪ Extra Credit: Module 3 Self Assessment 	1-1.5 hrs

Module 4: Cell Reproduction & Heredity (November 8-14)

Due Date*	Activity	Estimated Time to Complete
Monday 11/8	<ul style="list-style-type: none"> ▪ Module 4 Lesson: Cell Reproduction & Heredity ▪ Continue to review the Final Video Project tab <ul style="list-style-type: none"> ▪ See Final Video Project Overview and the Final Video Project FAQs 	1-1.5 hrs
Tuesday 11/9	<ul style="list-style-type: none"> ▪ Module 4 Textbook Readings ▪ Module 4 InQuizitive 	2-3 hrs
Wednesday 11/10	<ul style="list-style-type: none"> ▪ Return to the M3/M4 Database Peer Grading Workshop and grade 3 peers assigned to you as well as self-assessing your own submission ▪ Module 4 Synchronous Discussion Session (SDS) 	1-1.5 hrs
Friday 11/12	<ul style="list-style-type: none"> ▪ M3/M4 My Top 2 Reflection Post 	1-2 hrs
Sunday 11/14	<ul style="list-style-type: none"> ▪ IB 100 Mid-course Evaluation ▪ Extra Credit: Module 4 Self Assessment 	1-1.5 hrs

Module 5: Molecular Genetics (November 15-21)

Due Date*	Activity	Estimated Time to Complete
Monday 11/15	<ul style="list-style-type: none"> ▪ Module 5 Lesson: Molecular Genetics ▪ Begin to brainstorm a plan for your Final Video Project Proposal (see Final Video Project tab) 	1-1.5 hrs
Tuesday 11/16	<ul style="list-style-type: none"> ▪ Module 5 Textbook Readings ▪ Module 5 InQuizitive 	2-3 hrs
Wednesday 11/17	<ul style="list-style-type: none"> ▪ M5/M6 Database Topic Choice ▪ Module 5 Synchronous Discussion Session (SDS) 	1-1.5 hrs
Friday 11/19	<ul style="list-style-type: none"> ▪ M5/M6 Database Entry Post: Submit this post to two places: <ol style="list-style-type: none"> 1. M5/M6 Database 2. M5/M6 Database Peer Grading Workshop 	1-2 hrs
Sunday	<ul style="list-style-type: none"> ▪ Extra Credit: Module 5 Self Assessment 	1-1.5 hrs

COPYRIGHT © 2021 Li-Qing Chen, Wendy H. Yang and Allison O'Dwyer. All rights reserved. The content of the syllabus, lectures, and other class materials for this course is copyrighted or re-used with permission from the original sources. The content is intended for IB 100 students' private use. It is expressly forbidden to make copies of course materials without the express written permission of the University of Illinois Board of Trustees.

11/21		
Module 6: Evolution (November 29 - December 5)		
Due Date*	Activity	Estimated Time to Complete
Monday 11/29	<ul style="list-style-type: none"> ▪ Module 6 Lesson: Evolution ▪ Begin a rough draft of your Final Video Project Proposal (see Final Video Project tab) 	1-1.5 hrs
Tuesday 11/30	<ul style="list-style-type: none"> ▪ Module 6 Textbook Readings ▪ Module 6 InQuizitive 	2-3 hrs
Wednesday 12/1	<ul style="list-style-type: none"> ▪ Return to the M5/M6 Database Peer Grading Workshop and grade 3 peers assigned to you as well as self-assessing your own submission ▪ Module 6 Synchronous Discussion Session (SDS) 	1-1.5 hrs
Friday 12/3	<ul style="list-style-type: none"> ▪ M5/M6 My Top 2 Reflection Post 	1-2 hrs
Sunday 12/5	<ul style="list-style-type: none"> ▪ Extra Credit: Illinois Online End-of-Semester Survey ▪ Extra Credit: Module 6 Self Assessment 	1-1.5 hrs
Module 7: Biotechnology (December 6-12)		
Due Date*	Activity	Estimated Time to Complete
Monday 12/6	<ul style="list-style-type: none"> ▪ Module 7 Lesson: Biotechnology 	1 hr
Tuesday 12/7	<ul style="list-style-type: none"> ▪ Module 7 Reading ▪ Module 7 Reading Quiz 	2-3 hrs
Wednesday 12/8	<ul style="list-style-type: none"> ▪ M7/M8 Database Topic Choice ▪ Module 7 Synchronous Discussion Session (SDS) 	1-1.5 hrs
Thursday 12/9	<ul style="list-style-type: none"> ▪ Final Video Project Proposal (See Final Video Project tab) 	
Friday 12/10	<ul style="list-style-type: none"> ▪ M7/M8 Database Entry Post: Submit this post to two places: <ol style="list-style-type: none"> 1. M7/M8 Database 2. M7/M8 Database Peer Grading Workshop ▪ Extra Credit: ICES Evaluation* <p>*points awarded to whole class if more than 80% of the class submits the evaluation</p>	1-2 hrs
Module 8: Wrapping Up (December 13-17)		
Due Date*	Activity	Estimated Time to Complete

COPYRIGHT ©2021 Li-Qing Chen, Wendy H. Yang and Allison O'Dwyer. All rights reserved. The content of the syllabus, lectures, and other class materials for this course is copyrighted or re-used with permission from the original sources. The content is intended for IB 100 students' private use. It is expressly forbidden to make copies of course materials without the express written permission of the University of Illinois Board of Trustees.

Tuesday 12/14	<ul style="list-style-type: none"> ▪ Final Video Project Submission ▪ Final Video Project Transcript Originality Check 	2-5 hrs
Wednesday 12/15	Return to the M7/M8 Database Peer Grading Workshop and grade 3 peers assigned to you as well as self-assessing your own submission	1-1.5 hrs
Friday 12/17	<ul style="list-style-type: none"> ▪ M7/M8 My Top 2 Reflection Post ▪ Peer Assessment of Final Video Project Submission 	2-3 hrs