

**Anoka Ramsey Community College Concurrent
Enrollment @ Irondale High School
BIOL 1100: Unifying Concepts of Biology
4 Credits**



Semesters I & II 2021-22

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Course Description:

This is an introductory course designed to teach the process of science as it applies to biology today. Topics in biology that will be covered include heredity, evolution and ecosystems. Three lecture hours per week and ten three-hour labs during the semester. This course is not intended for science or allied health majors.

Major Areas of Course Content

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| <ul style="list-style-type: none"> 1. Science as a process: <ul style="list-style-type: none"> a. Experimental design b. Collecting, analyzing and presenting data c. Critical thinking 2. Heredity: <ul style="list-style-type: none"> a. Cell cycles b. Life cycles c. Genes and proteins d. Inheritance of traits | <ul style="list-style-type: none"> 3. Evolution: <ul style="list-style-type: none"> a. Natural Selection b. Speciation and extinction 4. Ecosystems: <ul style="list-style-type: none"> a. Structure and interactions b. Energy flow c. Nutrient cycling |
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Learner Outcomes:

- 1. Demonstrate a comprehension of science as a process
- 2. Formulate a hypothesis, conduct and analyze an experiment and disseminate the results
- 3. Explain fundamental concepts related to biological processes
- 4. Use critical thinking skills to understand, evaluate, and analyze real-life scenarios presenting major biological topics (e.g. case studies)

5. Evaluate current examples of hereditary, evolutionary, and ecological processes

Minnesota Transfer Curriculum Goal Area(s) and Competencies

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
4. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

Required Materials: Pencil, SCIENCE ONLY notebook and folder or binder with note paper, college biology textbook (Reece et. al., Campbell Biology: Concepts & Connections 8e) or intro biology textbook (Miller and Levine, Biology)

Classroom Policies:

Late work: Assignments are expected to be turned in on their assigned due date. All late work for a unit will be due at the beginning of the hour on the day **before** the test for that unit. Late work **will not be accepted** after this deadline, and will be marked in the gradebook as expired.

Phones: Phones are not necessary in the biology classroom. If they are brought to class, students will have the option to keep it out of sight or turn it in at the beginning of the class period and have it stored securely for the entire class period. If you refuse to do so, this will be treated as insubordination. You will be asked to speak with your Dean and a discipline referral will be written.

NOTE: At no time are students to record pictures or videos of students or adults without consent. The use of a personal electronic device or any device capable of taking photographs and videos are not allowed in restrooms. These devices include, but are not limited to: cell phones, cameras, Chromebooks, and other such technology.

Absences:

Absences should not affect learning. You are responsible for checking the calendar on your teacher's website to find what you have missed. In this classroom you are expected to pick up the material you missed either from the classroom or on google classroom (when posted).

- If you were absent on the test review day you are *still responsible* to **take the test on the day of the test**.
- If you were absent on the day of a quiz, you must make up the quiz the **same day** you get back during class.
- If you were absent on the day of a test, you will take the test the **same day** you get back during class.
- If you were absent on a lab day, you have **until the day before the test** to finish the lab work and turn it in. Please check with your teacher on how to make it up.
- If you were absent on the day homework is **checked**, you must turn in the assignment the **same day** you get back during class.
- If you were absent on the day homework was **assigned**, you must turn in the assignment on the **following day**.

Attendance:

Excused and unapproved absences will not arbitrarily result in reduction in grades, but failure to complete work will usually affect grades. Unexcused absences on test days will forfeit the student's ability to retake the unit test missed due to this unexcused absence.

Students and/or parents or guardians are responsible for requesting make-up work for each day's absence. Students will be allowed two school days make-up time for each day of excused absence, with the exception of long-term assignments of 10 or more school days. Long-term assignments will be due the day the student returns to school. These times may be extended at the discretion of the teacher. Students will be allowed one day to make up work in the case of unapproved absences. Teachers are responsible for providing assignments after a student or parent/guardian request.

Tardies:

Teachers will follow the tardies policy outlined in the [Iroindale Student Handbook](#)

Teachers will not issue a pass out of class the **first or last 10 minutes of learning** unless it is an emergency.

Support Plan for Successful Timeliness	
1st Tardy	Teacher intervention.
2nd Tardy	Contact with home - teacher/guardian communication is clear around the student's continued tardiness and that the next step will be a <i>Tardy Contract</i> with a Dean or Admin. Teacher documented in Synergy.
3rd Tardy	Meet with Dean to discuss barriers and challenges and develop a success plan.
4th Tardy	Revisit/modify success plan - drafted w/ student - signed by student, Dean and guardian. A copy of the plan is given to an Admin & Attendance Clerk. Success plans may include loss of privileges and other consequences.

Academic Honesty:

Mounds View School Board Policy EG-3109 Student Rights and Responsibilities:

Academic honesty is required to ensure an accurate measurement of a student's academic knowledge. The Mounds View School Board expects that students will achieve success with integrity. Academic dishonesty impairs a true showing of academic achievement. Substantiated reports of academic dishonesty will result in appropriate consequences as defined in accompanying regulations and in student handbooks. Examples of academic dishonesty include, but are not limited to: theft and use of tests; use of crib sheets or other cheating devices on an exam; plagiarism or representation of a substantial piece of work as one's own without proper attribution. This policy applies to all manner, including the most current technological advances, systems, or equipment, that may be utilized for the purposes of academic dishonesty.

Academic dishonesty will be considered a behavioral infraction. The following guidelines will be utilized when a violation of academic honesty occurs:

- Consequences will be commensurate with the severity of the incident
- Consequences cannot prevent growth and development or an accurate measurement of student achievement
- Measures will be sought to determine why the academic dishonesty occurred
- Students will be required to provide a written explanation of behavior
- Students in violation of this policy will not escape the performance indicator; student knowledge will still be measured within an agreed timeframe set by teacher, dean, and student
- Additional consequences may include:
 - Re-examination of content; repeat of project, paper, or activity
 - Possible reduced score/grade not to prevent achieving a level of proficiency

- Other measures identified in Mounds View School Board Policy EG-3109: Student Rights and Responsibilities
- Multiple offenses may result in loss of credit, to be determined by building principal
(Irondale Student Handbook).

Grading Scale:

- In this course, we use equal interval grading to assess student progress.
- The purpose of the equal interval scale is to encourage proficiency rather than the accumulation of points and to support student growth over the course of the semester.
- Students and parents are encouraged to communicate with teachers if current progress does not seem adequate; we can then work together to find strategies to improve proficiency.

Individual Assignment Grade Configuration		
Gradebook Entry	Description	Point Value
A	Went beyond the basic requirements for proficiency	4
B	Met all the basic requirements for proficiency.	3
C	Met some basic requirements for proficiency	2
D	Met very few basic requirements for proficiency.	1
I	Didn't show enough work to demonstrate proficiency	0
M	Missing Evidence of Proficiency	0

Irondale Final Grade Configuration			ARCC Final Grade Configuration
A	3.40	4.00	A
A-	3.20	3.39	
B+	3.01	3.19	B
B	2.59	3.00	
B-	2.40	2.58	
C+	2.21	2.3]9	C
C	1.79	2.20	
C-	1.60	1.78	
D+	1.41	1.59	D

D	0.99	1.40	
D-	0.80	0.98	
I	No Value Assigned		F

*Note: Regardless of the final mathematical calculation, students who do not complete required assessments will receive a final grade of **I** (recovered in summer school, or through after-school credit recovery programming) or **NG** (recovered with the classroom teacher within three weeks of the semester's end).*

Gradebook Setup & Course Requirements:

Semester	Summative Assessments (65% of Final Grade)	Summative Labs & Projects (30% of Final Grade)	Formative Practice (5% of Final Grade)
I	Test: Ch. 1, 34, 36, 37 Test: Ch. 2, 3 Test: Ch. 4-7 Test: Ch. 8 Semester I Final Exam	Lab: Isopod Behavior Lab: Sampling the Biodiversity of a Community Lab: Water Olympics Lab: Macromolecules Lab: Pineapple Enzymes Lab: Investigating Plant and Animal Cells Video Project: Photosynthesis and Cellular Respiration	Dice Quizzes Google Form Check-ins TBD
II	Test: Ch. 9 Test: Ch. 10-12 Test: Ch. 13 & 14 Test: Ch. 15 & 19 Semester II Final Exam	Lab: Protein Synthesis Lab: Natural Selection Lab: Allele Frequencies Lab: Evolutionary Trees Brochure: Human Body Systems Lab: Plant Dissection	Dice Quizzes Google Form Check-ins TBD

Accessing Grades:

Parents can access grades through [ParentVUE](#). Parents will be able to see assignments for each class, and the assignments may have a score or a code (or both). Assignments may also include written comments from the teacher.

Mi = Missing (the assignment is missing and is currently counting as a score of zero)

Ab = Absent (the student was absent when the assignment was given or due)

La = Late (the assignment was turned in late)

Inc = Incomplete (the turned in assignment was not complete)

TI = Turned in (the assignment is turned in but does not yet have a score)

WIP = Work in progress (the student is working on the assignment and although it is not completed, it is not missing--this is often used for projects that have multiple parts)

Relearning Opportunities:

Summative Assessments: Relearning and reassessment will be provided on each summative unit test. Only students that have completed ALL unit reading guides before the original unit test will be eligible for retaking a summative unit test.

Students who do not earn an “A” on specific unit benchmarks on the summative assessment will need to have the unit review completed and will have the opportunity to relearn the material through remediation activities to earn full credit on each learning benchmark. Relearning must be completed in order for students to be eligible to retake benchmark(s) of the summative unit test. All retakes must be completed on the assigned date(s) as outlined by the teacher. Any student who has an unexcused absence the day of the original test will be ineligible for retaking the unit exam that they were absent for.

Summative Labs: Students who do not earn a proficient score (B) on a summative lab report will have the opportunity to rework any area for full credit. Students must demonstrate a clear understanding of their feedback and make appropriate adjustments according to the rubric to earn up to full credit. This work must be completed before the unit assessment.

ARCC Accommodations for Students with Special Needs:

Anoka-Ramsey Community College does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age or disability in employment or in the provision of our services. Within the first week of class, students with special needs that require accommodations should contact the Director of Access Services at Molly.Tast@anokaramsey.edu or by phone at 763-433-1350 to discuss possible support services.

Tentative* Weekly Schedule

(*assignments/activities and due dates are subject to change)

Semester I

Week Of:	Topic/Chapter	Major Assignments/Activities and Due Dates
Week 1: Sept. 7-9	Ch. 1: Exploring Life	
Week 2: Sept. 12-16	Ch. 34.1-5: The Biosphere	Lab: Isopod Behavior
Week 3: Sept. 19-23	Ch. 36: Population Ecology	Quiz: Process of Science
Week 4: Sept. 27-Sept. 30	Ch. 37: Communities and Ecosystems	Lab: Sampling the Biodiversity of a Community
Week 5: Oct 3-7	Ch. 38.1-6: The Loss of Biodiversity	Quiz: Ecology Test: Ch. 1, 34, 36, 37, 38
Week 6: Oct. 11-14	Ch. 2: The Chemical Basis of Life	

Week 7: Oct. 17-19	Ch. 2: The Chemical Basis of Life	Lab: Water Olympics
Week 8: Oct. 24-28	Ch. 3: The Molecules of Cells	Lab: Modeling Dehydration Synthesis Reaction and Building Macromolecules
Week 9: Oct. 31-Nov. 3	Ch. 3: The Molecules of Cells	Lab: Pineapple Enzymes Test: Ch. 2-3
Week 10: Nov. 7-11	Ch. 4: A Tour of the Cell	Activity: Using a Compound Microscope
Week 11: Nov. 14-18	Ch. 4: A Tour of the Cell	Lab: Investigating Plant and Animal Cells Quiz: Organelles
Week 12: Nov. 21-25	Thanksgiving Break	
Week 13: Nov. 28-Dec. 2	Ch. 5: The Working Cell	Activity: Potato and Red Onion Osmosis
Week 14: Dec. 5-9	Ch. 5: The Working Cell & Ch. 6: How Cells Harvest Chemical Energy	Video Project: Modeling the Relationship between Respiration and Photosynthesis
Week 15: Dec. 12-16	Ch. 7: Photosynthesis	Test: Ch. 4-7
Week 16: Dec. 19-22	Ch. 8: The Cellular Basis of Reproduction and Inheritance	Online Simulation: Mitosis
Week 17: Dec. 23-Jan. 2	Winter Break	

Week 18: Jan. 3-6	Ch. 8: The Cellular Basis of Reproduction and Inheritance & Ch. 9: Patterns of Inheritance	Quiz: Mitosis and Meiosis
Week 19: Jan. 9-13	Ch. 9: Patterns of Inheritance	Online Simulation: Karyotyping
Week 20: Jan. 17-20	Ch. 9: Patterns of Inheritance	Test: Ch. 8
Week 21: 23-25	Final Exams	Semester I Final Exam

Semester II

Week Of:	Topic/Chapter	Major Assignments/Activities and Due Dates
Week 22: Jan 30-Feb 3	Ch. 9: Patterns of Inheritance	Online Simulation: Mouse Genetics
Week 23: Feb 6-10	Ch. 10: Molecular Biology of the Gene	Test: Ch. 9 Online Simulation: Building DNA
Week 24: Feb 13-17	Ch. 10: Molecular Biology of the Gene	Quiz: DNA Replication
Week 25: Feb 21-24	Ch. 10: Molecular Biology of the Gene	Lab: Protein Synthesis
Week 26: Feb 27-Mar. 3	Ch. 11: How Genes are Controlled Ch. 12: DNA Technology and Genomics	Quiz: DNA Technology
Week 27: Mar 6-8	Ch. 11: How Genes are Controlled Ch. 12: DNA Technology and Genomics	Test: Ch.10, 11, 12

Week 28: Mar 9-17	Spring Break	
Week 29: Mar 20-24	Ch. 13: How Populations Evolve	Lab: Natural Selection
Week 30: Mar 27-31	Ch. 13: How Populations Evolve	Quiz: Natural Selection
Week 31: Apr. 3-6	Ch. 13: How Populations Evolve	Lab: Allele Frequencies of Sickle Cell Anemia
Week 32: Apr 10-14	Ch. 13: How Populations Evolve Ch. 14: The Origin of Species	
Week 33: Apr 17-20	Ch. 14: The Origin of Species	Test: Ch. 13, 14 Withdrawal Deadline: Thursday, April 16
Week 34: Apr 24-28	Ch. 20: Unifying Concepts of Animal Structure and Function	Online Simulation: Human Homeostasis Minnesota State Science Testing
Week 35: May 1-5	Ch. 15: Tracing Evolutionary History	Activity: Geologic Timeline
Week 36: May 8-12	Ch. 15: Tracing Evolutionary History Ch. 19: The Evolution of Vertebrate Diversity	Lab: NOVA Evolutionary Trees
Week 37: May 15-19	Ch. 15: Tracing Evolutionary History Ch. 19: The Evolution of Vertebrate Diversity	Test: Ch.15, 19
Week 38: May 22-25	Ch. 20: Unifying Concepts of Animal	Project: Human Body Systems Brochure

	Structure and Function	
Week 39: May 30- Jun 2	Ch. 24: The Immune System Ch. 31: Plant Structure, Growth, and Reproduction	Lab: Plant Dissection
Week 40: Jun 5-8		<i>Semester II Final Exam</i>