

BIO 101: The Quest for Life – An Adventure into Biology

Semester: Fall 2025

Instructor: Dr. Brittany Peterson

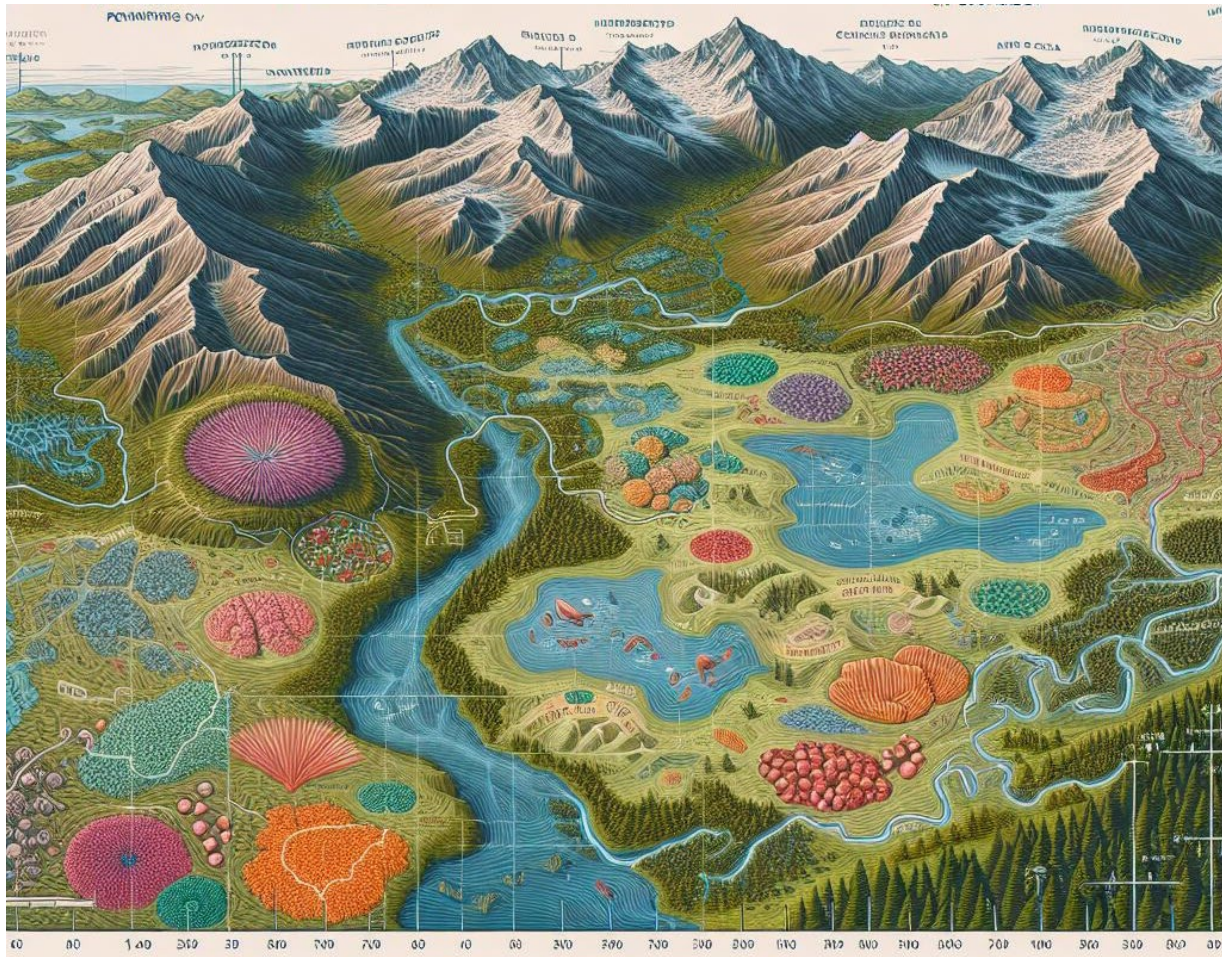
Office Hours: By appointment or via “guild council” (group mentoring sessions)

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Course Overview (The Grand Adventure)




Welcome, explorers! In this course, you are **biologists-in-training**, embarking on a journey through the mysteries of life. Your mission? To uncover the secrets of cells, genetics, evolution, and ecosystems—earning XP, leveling up, and becoming a **Biology Trailblazer** by the end of the semester!

This course uses **gamification** to make learning interactive and rewarding. Instead of grades, you’ll earn **Experience Points (XP)** through quests (assignments), boss battles (exams), and side missions (extra credit).



Tools of the Trade

All great biologists need equipment! Here's what you'll use:

-  **Textbook:** *Biology: The Science of Life (10th Edition)*
-  **Online Tools:** Blackboard (XP tracker), Kahoot (quizzes), and OneDrive (collaborative work)
-  **Lab Preparation:** Please wear closed-toe shoes, long pants/skirts, with hair tied back and bring a pencil with you to lab!





XP System & Grading

Instead of traditional grades, you'll level up by earning XP. Each level corresponds to a themed rank:

Rank	Grade	XP Required	Description
Trailblazer	A	11,500+ XP	A legendary explorer, revered for unmatched knowledge and survival skills.
Pathfinder	B	10,000 XP	A skilled adventurer who can navigate any terrain with confidence.
Scout	C	8,500 XP	A resourceful explorer who can handle the challenges of the wild.
Forager	D	7,000 XP	Learning the basics but struggling with survival.
Wanderer	F	Below 7,000 XP	Disoriented in the wilderness—at risk of never making it back.

Course Quests & XP Breakdown

Your XP is earned through completing different quests:

Quest Type	XP Available	Individual/Collaborative	Description
 Main Quests (Labs & Homework)	6000 XP	Labs: Collaborative, Homework: Individual	Hands-on lab reports and research activities (one per week)
 Boss Battles (Exams)	4500 XP	Individual	Major assessments that test mastery of key concepts
 Daily Missions (Classwork & Participation)	1000 XP	Collaborative	Engage in discussions, mini-experiments, and activities
 Side Quests (Extra Credit & Challenges)	1000 XP	Individual or Collaborative (varies)	Optional bonus assignments for extra XP

Boss Battles – Face the Challenge!

Boss Battles are major assessments that test your mastery of key concepts. Just like in any great adventure, these high-stakes encounters will challenge you to apply what you've learned and prove your skills as a wilderness explorer.

◆ **Boss Battle Format**

Each Boss Battle is designed to assess your knowledge through a mix of question types:

- **Multiple-Choice Questions (40%)** – Test your recall and understanding of fundamental concepts.
- **Short Answer Questions (30%)** – Demonstrate deeper comprehension by explaining key processes.
- **Problem-Solving Scenarios (20%)** – Apply your knowledge to analyze biological situations.
- **Explorer's Challenge (10%)** – A special question requiring critical thinking or data interpretation.

Time Limit & Structure

- **Duration:** Each Boss Battle lasts **75 minutes** (Final Boss Battle: **120 minutes**).
- **Open/Closed Notes:** These are **closed-book**, but review guides and practice questions will be provided beforehand.
- **Submission:** All responses must be submitted via Blackboard before time expires.

Boss Battle Mechanics

- **No Late Entries:** Once the Boss Battle begins, the clock starts—late arrivals have less time.
- **XP Rewards:** Earn up to **1000 XP** per Boss Battle based on performance.
- **Power-Ups Available:** Some exams may include optional “Explorer’s Aid” lifelines (limited hints or retries on select questions).

Upcoming Boss Battles

	Date	XP Available	Content Covered
Boss Battle 1 – Into the Wild	Sept 27, 2025	Up to 1000 XP	Cells & Macromolecules
Boss Battle 2 – Evolutionary Trials	Oct 25, 2025	Up to 1000 XP	DNA, Genetics & Evolution
Boss Battle 3 – Ecosystem Survival	Nov 22, 2025	Up to 1000 XP	Ecology & Human Biology
Final Boss Battle – Master of the Wilderness	Dec 12, 2025	Up to 1500 XP	Comprehensive (All Topics)

Main Quests – The Path to Mastery

Main Quests are the core assignments that build your biological expertise. These include **weekly lab investigations and homework assignments**, where you apply concepts in hands-on or analytical ways.

◆ **Main Quest Format**

- **Labs (Collaborative, 250 XP each)** – Hands-on experiments performed in teams. You will collect data, analyze results, and submit a lab report.
- **Homework (Individual, 150 XP each)** – Weekly problem sets, reading reflections, or case studies reinforcing lecture material.

Time Limit & Structure

- **Labs:** Conducted during scheduled lab periods. Reports are due at the beginning of the next lab session.
- **Homework:** Assigned weekly, due **Mondays at 9 AM** via Blackboard.

Important Rules

- **No Late Work After Boss Battles:** Any missed labs or homework become **lost in the wilderness** after the related Boss Battle.
- **Lab Reports:** While collaboration is encouraged, each explorer must submit their **own unique analysis**.

XP Breakdown for Main Quests

Quest Type	XP Available	Frequency	Total XP Possible
Labs (Collaborative)	250 XP each	1 per week (15 total)	3750 XP
Homework (Individual)	150 XP each	1 per week (15 total)	2250 XP

Daily Missions – Training in the Field

Daily Missions are low-stakes, in-class activities that build teamwork and reinforce learning. These **collaborative** exercises ensure you stay engaged with the course material while preparing for larger challenges.

◆ Daily Mission Format

- **Mini Case Studies (25 XP each)** – Work with teammates to analyze biological scenarios and propose solutions.
- **Quickfire Challenges (25 XP each)** – Rapid-response quizzes or problem-solving tasks to test real-time thinking.

- **Explorer’s Journal (50 XP each)** – Reflective writing exercises connecting biology to real-world applications.
- **Fieldwork Simulations (50 XP each)** – Group activities involving hands-on observations, data collection, or model-building.

 **Time Limit & Structure**

- **Completed in-class** (No makeups unless pre-approved).
- **Typically 15-20 minutes**, though some activities span the entire class period.

 **XP Breakdown for Daily Missions**

Activity Type	XP Available	Frequency	Total XP Possible
Mini Case Studies	25 XP each	10 total	250 XP
Quickfire Challenges	25 XP each	10 total	250 XP
Explorer’s Journal	50 XP each	5 total	250 XP
Fieldwork Simulations	50 XP each	5 total	250 XP

Total Possible XP from Daily Missions: 1000 XP

 **Side Quests – The Road to Legendary Status**

Side Quests are optional, **high-risk, high-reward** challenges that allow explorers to push their limits and earn extra XP.

◆ **Side Quest Format**

- **Wilderness Research Expeditions (250 XP each, Collaborative)** – Conduct independent research on a biology-related topic and present findings.
- **Survival Challenges (150 XP each, Individual)** – Apply biology to real-world survival scenarios (e.g., designing a water filtration system using biological principles).
- **Ecosystem Restoration Projects (200 XP each, Collaborative)** – Propose and defend a conservation strategy for an endangered ecosystem.

- **Explorer’s Lorekeeper (100 XP each, Individual)** – Write a short article or creative piece about a key figure in biology.

 **Time Limit & Structure**

- Side Quests are announced sporadically throughout the semester. Deadlines vary but typically allow **1-2 weeks** for completion.
- Some quests may be **hidden achievements**, only revealed to those who take initiative in class discussions or complete certain tasks.

 **XP Breakdown for Side Quests**

Quest Type	XP Available	Frequency	Total XP Possible
Wilderness Research Expeditions	250 XP each	2 total	500 XP
Survival Challenges	150 XP each	2 total	300 XP
Ecosystem Restoration Projects	200 XP each	1 total	200 XP
Explorer’s Lorekeeper	100 XP each	2 total	200 XP

Total Possible XP from Side Quests: 1000 XP

 **Summary of XP Opportunities**

Quest Type	XP Available	Total XP Possible
Main Quests (Labs & Homework)	150-250 XP each	6000 XP
Boss Battles (Exams)	1000 XP each	4500 XP
Daily Missions	25-50 XP each	1000 XP
Side Quests	100-250 XP each	1000 XP
Total XP Possible		13,000 XP


Explorers aiming for a high rank should complete all Main Quests and Boss Battles while strategically engaging in Daily Missions and Side Quests!


Weekly Adventure Plan (Fall 2025 Calendar)


Week	Date	Topic	Lab Activity (Collaborative)
1	Aug 26-30	Introduction to Biology	Scientific Method & Microscopy
2	Sept 2-6	Macromolecules & Enzymes	Testing for Biomolecules
3	Sept 9-13	Cell Structure & Function	Cell Observation
4	Sept 16-20	Membranes & Transport	Osmosis & Diffusion
5	Sept 23-27	Cellular Respiration & Photosynthesis	Photosynthesis Lab
Boss Battle 1	Sept 27	Exam on Weeks 1-5	
6	Sept 30- Oct 4	DNA & Replication	DNA Extraction
7	Oct 7-11	Transcription & Translation	Protein Synthesis
8	Oct 14-18	Genetics & Inheritance	Mendelian Genetics
9	Oct 21-25	Evolution & Natural Selection	Evolution Simulation
Boss Battle 2	Oct 25	Exam on Weeks 6-9	
10	Oct 28-Nov 1	Population Genetics	Hardy-Weinberg Lab
11	Nov 4-8	Ecology & Ecosystems	Food Webs
12	Nov 11-15	Conservation Biology	Biodiversity Survey
13	Nov 18-22	Human Physiology	Homeostasis Lab
Boss Battle 3	Nov 22	Exam on Weeks 10-13	
14	Nov 25-29	Biotechnology	Genetic Engineering
15	Dec 2-6	Course Review & Applications	Review Activities

Week	Date	Topic	Lab Activity (Collaborative)
Final Boss Battle	Dec 12	Comprehensive Exam	

Special Features & Game Mechanics

 **Power-ups (Bonus Opportunities)** – Earn XP boosts by answering challenge questions or completing bonus tasks.

 **Hidden Achievements** – Secret side quests revealed throughout the semester for additional XP.

 **Team Guilds (Study Groups)** – You will be placed in a team for certain activities. Your guild can earn group XP bonuses by solving problems together.

Rules of the Realm (Course Policies)

1. **Attendance Bonus:** Being present and participating earns XP.
 2. **Late Work Policy:** No late work will be accepted after the relevant boss battle.
 3. **Collaboration:** Guild teamwork is encouraged, but individual work must be original.
 4. **Academic Integrity:** Cheating and academic dishonesty as defined in the SIUE Student Handbook results in a **-1000 XP penalty**.
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Ready for the Challenge?

Your mission begins now! Gather your tools, form your guilds, and embark on this adventure to **master the science of life!** 