**Course Syllabus**

**Molecular Biology Fall 2025**

**Instructor: Amy Haley**

**Dear Parent/Guardian,**

**I feel fortunate to have your child in my class this semester and hope that you will contact me should you have any concerns about the progress of your student. Please sign and return this sheet. Again, please contact me at school with any concerns. It’s going to be a great year!**

**Thank you,**

***Amy Haley***

**arhaley@madisoncity.k12.al.us**

**My child and I have read and discussed the classroom syllabus.**

Student Name (Print) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_

Student Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian Name (Print) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_

Email Address(es) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phone number(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cell Home Work

**Course Syllabus**

**Molecular Biology Fall 2025**

**Instructor: Amy Haley**

**Course Description:**

The Molecular Biology curriculum is designed to allow for scientific investigation through student-directed, inquiry-based lab experiences which support the delivery and exploration of deep concepts in the field of Molecular Biology. This course will emphasize a comprehensive approach to learning, and students will be expected to design and carry out experiments using appropriate methods and resources. Students will also be expected to read and interpret college-level texts and technical scientific papers throughout the duration of the course.

**Course Objectives:**

Molecular Biology is designed to give students an understanding of all that composes life on Earth and the unifying molecules and cellular processes that allow us to interact on a microscopic level. It is especially focused on the evolution of molecular pathways and molecules in populations of organisms.

**Classroom Rules and Expectations:**

**General-** Students are expected to report to class fully prepared to participate in and contribute to the scheduled activities and to adhere to the following:

1. Be ready for class each day.

2. Be respectful of yourself, others, the teacher, and the classroom.

3. Be responsible for your own attitude, actions, and assignments.

**Management Plan**-The following will occur in response to poor behavior choices:

1. Verbal reprimand
2. Conference with student with parent contact
3. Withdrawal of privilege(s) with parent contact
4. Other consequences determined to be reasonable and appropriate by the school administration

\*\*Please refer to the Molecular Biology Classroom Policies and Procedures document for additional information about daily classroom expectations.\*\*

**Accommodations-** Requests for accommodations for this course or any school event are welcomed from students and parents.

**Concerning Laptop Utilization**

1. Student laptops should not be hard-wired to the network or have print

capabilities.

2. Use of discs, flash drives, jump drives, or other USB devices will not be

allowed on Madison City computers.

3. Neither the teacher, nor the school is responsible for broken, stolen, or lost

laptops.

4. Laptops and other electronic devices will be used at the individual discretion of

the teacher.

**Use of Electronic Devices**

Only school-issued devices will be allowed in the classroom. Please refer to the Madison City Schools Code of Student Conduct and Madison City Schools Policy Manual concerning wireless communication devices.

**Grading Policy:**

Test grades will account for 70% of the 9-weeks grade, with the remaining 30% being determined by quiz/daily grades. The grading scale is as follows:

A = 90-100

B = 80-89

C = 70-79

D = 65-69

F = below 65

Grades will be a reflection of mastery of the standards. Make sure all absences are excused as class work can be made up and graded for excused absences only. The Final Exam counts for 1/5 of the student’s final grade.

**Make-Up Work Policy:**

Make-up tests are only allowed for excused absences. Students with excused absences should arrange with Mrs. Haley to take any missed assessments. Make-up work must be submitted within three days of returning from an absence. Late make-up work will not be accepted or evaluated for credit except at the teacher’s discretion.

**Final Exam Exemption Policy:**

Students are eligible to exempt the final exam if they have earned an **85% or higher** as the final grade for this course.  Attendance and full participation in reviews and assignments for the class leading up to the day of the final exam are required.

Any of the following will **EXCLUDE** a student from exempting the final exam:

* More than five **EXCUSED** absences (includes doctor notes)
* Any **UNEXCUSED** absence
* Assignment to In School Suspension (ISS) for 3 days or more
* Any Out of School Suspension (OSS)
* One or more days of Alternative School placement
* Not participating in the state standardized assessment for their grade level including all subtests (10th PreACT, 11th ACT with Writing, 12th WorkKeys)

**Course Materials:**

Each student will need the following individual supplies for Molecular Biology: (most apply to traditional face-to-face school setting)

1. Science notebook of student’s choice (ex. binder, composition notebook, spiral-bound notebook, etc.)

2. Additional notebook to serve as Free Response Question journal, question bank, review reservoir, and scientific paper compendium

3. Notebook paper (optional but encouraged for students using binders as class notebooks)

4. Writing utensil (pencils are preferred but pens are allowed)

5. Scientific calculator

If you are interested in donating supplies to the classroom, we are always in need of paper towels, hand sanitizer, cleaning wipes, dry erase markers, dry erase board cleaner, paper (graph, lined, and copy), and facial tissue.

**Course Syllabus**

**Molecular Biology Fall 2025**

**Instructor: Amy Haley**

|  |  |
| --- | --- |
| **18 - WEEK PLAN\*** | |
| **WEEK 1** | The Nature of Science, Safety, and Mathematics |
| **WEEK 2** | Unit #1- Chemistry of Life  C1. 1: Elements of Life  Ch. 2: Water and Life  Ch. 3: Carbohydrates  Ch. 4: Proteins  Ch. 5: Nucleic Acids |
| **WEEK 3** | Unit #1- Chemistry of Life  C1. 1: Elements of Life  Ch. 2: Water and Life  Ch. 3: Carbohydrates  Ch. 4: Proteins  Ch. 5: Nucleic Acids |
| **WEEK 4** | Unit #2- Cell Structure and Function  Ch. 6: An Introduction to the Cell  Ch. 7: Subcellular Components of Eukaryotes  Ch. 8: Cell and Organism Size  Ch. 9: Cell Membranes  Ch. 10: Membrane Transport  Ch. 11: Water Movement- Osmosis, Tonicity, and Osmoregulation  Ch. 12: Origin of Compartmentalization and the Eukaryotic Cell |
| **WEEK 5** | Unit #2- Cell Structure and Function  Ch. 6: An Introduction to the Cell  Ch. 7: Subcellular Components of Eukaryotes  Ch. 8: Cell and Organism Size  Ch. 9: Cell Membranes  Ch. 10: Membrane Transport  Ch. 11: Water Movement- Osmosis, Tonicity, and Osmoregulation  Ch. 12: Origin of Compartmentalization and the Eukaryotic Cell |
| **WEEK 6** | Unit #2- Cell Structure and Function  Ch. 6: An Introduction to the Cell  Ch. 7: Subcellular Components of Eukaryotes  Ch. 8: Cell and Organism Size  Ch. 9: Cell Membranes  Ch. 10: Membrane Transport  Ch. 11: Water Movement- Osmosis, Tonicity, and Osmoregulation  Ch. 12: Origin of Compartmentalization and the Eukaryotic Cell |
| **WEEK 7** | Unit #3- Cellular Energetics  Ch. 13: Cellular Energy  Ch. 14: Enzymes  Ch. 15 & 16: Photosynthesis  Ch. 17 & 18: Cellular Respiration  Ch 19: Metabolism, the Environment, and Evolutionary Fitness |
| **WEEK 8** | Unit #3- Cellular Energetics  Ch. 13: Cellular Energy  Ch. 14: Enzymes  Ch. 15 & 16: Photosynthesis  Ch. 17 & 18: Cellular Respiration  Ch 19: Metabolism, the Environment, and Evolutionary Fitness |
| **WEEK 9** | Fall Break |
| **WEEK 10** | Unit #3- Cellular Energetics  Ch. 13: Cellular Energy  Ch. 14: Enzymes  Ch. 15 & 16: Photosynthesis  Ch. 17 & 18: Cellular Respiration  Ch 19: Metabolism, the Environment, and Evolutionary Fitness |
| **WEEK 11** | Unit #4- Cell Communication and Cell Cycles  Ch. 20: Cell Communication  Ch. 21: Signal Transduction  Ch. 22: Changes in Signal Transduction Pathways  Ch. 23: Feedback in Cell Communication  Ch. 24: The Cell Cycle  Ch. 25: Regulation of the Cell Cycle |
| **WEEK 12** | Unit #4- Cell Communication and Cell Cycles  Ch. 20: Cell Communication  Ch. 21: Signal Transduction  Ch. 22: Changes in Signal Transduction Pathways  Ch. 23: Feedback in Cell Communication  Ch. 24: The Cell Cycle  Ch. 25: Regulation of the Cell Cycle |
| **WEEK 13** | Unit #5- Gene Expression and Regulation  Ch. 31: DNA and RNA Structure and Function  Ch. 32: DNA Replication  Ch. 33: Transcription and RNA Processing  Ch. 34: Translation  Ch. 35: Regulation of Gene Expression  Ch. 36: Cell Specialization and Development  Ch. 37: Mutations |
| **WEEK 14** | Unit #5- Gene Expression and Regulation  Ch. 31: DNA and RNA Structure and Function  Ch. 32: DNA Replication  Ch. 33: Transcription and RNA Processing  Ch. 34: Translation  Ch. 35: Regulation of Gene Expression  Ch. 36: Cell Specialization and Development  Ch. 37: Mutations |
| **WEEK 15** | Unit #5- Gene Expression and Regulation  Ch. 31: DNA and RNA Structure and Function  Ch. 32: DNA Replication  Ch. 33: Transcription and RNA Processing  Ch. 34: Translation  Ch. 35: Regulation of Gene Expression  Ch. 36: Cell Specialization and Development  Ch. 37: Mutations |
| **WEEK 16** | Thanksgiving Break |
| **WEEK 17** | Unit #6- Heredity  Ch. 26: Meiosis and Genetic Diversity  Ch. 27: Mendelian Genetics  Ch. 28: Non-Mendelian Genetics  Ch. 29: Environmental Effects on Phenotypes  Ch. 30: Chromosomal Inheritance |
| **WEEK 18** | Unit #6- Heredity  Ch. 26: Meiosis and Genetic Diversity  Ch. 27: Mendelian Genetics  Ch. 28: Non-Mendelian Genetics  Ch. 29: Environmental Effects on Phenotypes  Ch. 30: Chromosomal Inheritance |
| **WEEK 19** | Review and Final Exam |

*\* This syllabus serves as a guide for both the teacher and student; however, during the term it may become necessary to make additions, deletions or substitutions. Adequate notice will be provided to students of any changes.*