**Course Syllabus**

**Molecular Biology Fall 2024**

**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 print this page, sign, and have your student bring it to class. 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

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**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. Cell phones and earbuds/headphones will not be allowed to be used during classroom instruction time. Phones and earbuds/headphones will be put away in a location designated by the teacher and placed in silent mode. In secondary schools, students will have access to their phones and earbuds/headphones outside of classroom instruction time such as between classes and lunch. Failure to follow these procedures will result in consequences in the classroom management plan.

**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.

**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)

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

6. Scientific calculator

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

**Texts/Required Readings:**

*Campbell Biology*. 10th Edition. Reece, Urry, Cain, Wasserman, Minorsky and Jackson. 2014.

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| **18 - WEEK PLAN\*** | |
| **WEEK 1** | The Nature of Science, Safety, and Mathematics |
| **WEEK 2** | Unit #1- Exploring Life, Water, and the Macromolecules  Ch. 1: Exploring Life  Ch. 2: Chemical Context of Life  Ch. 3: Water  Ch. 4: Carbon and Molecular Diversity  Ch. 5: Macromolecules |
| **WEEK 3** | Unit #1- Exploring Life, Water, and the Macromolecules  Ch. 1: Exploring Life  Ch. 2: Chemical Context of Life  Ch. 3: Water  Ch. 4: Carbon and Molecular Diversity  Ch. 5: Macromolecules |
| **WEEK 4** | Unit #2- Cells  Ch. 6: A Tour of the Cell  Ch. 7: Membrane Structure and Function |
| **WEEK 5** | Unit #2- Cells  Ch. 6: A Tour of the Cell  Ch. 7: Membrane Structure and Function |
| **WEEK 6** | Unit #2- Cells  Ch. 6: A Tour of the Cell  Ch. 7: Membrane Structure and Function |
| **WEEK 7** | Unit #3- Bioenergetics (Cellular Processes)  Ch. 8: An Introduction to Metabolism  Ch. 9: Respiration  Ch. 10: Photosynthesis |
| **WEEK 8** | Unit #3- Bioenergetics (Cellular Processes)  Ch. 8: An Introduction to Metabolism  Ch. 9: Respiration  Ch. 10: Photosynthesis |
| **WEEK 9** | Fall Break |
| **WEEK 10** | Unit #3- Bioenergetics (Cellular Processes)  Ch. 8: An Introduction to Metabolism  Ch. 9: Respiration  Ch. 10: Photosynthesis |
| **WEEK 11** | Unit #4- Cellular Communication and Cellular Reproduction  Ch. 11: Cell to Cell Communication  Ch. 12: Cell Cycle (Mitosis) |
| **WEEK 12** | Unit #4- Cellular Communication and Cellular Reproduction  Ch. 11: Cell to Cell Communication  Ch. 12: Cell Cycle (Mitosis) |
| **WEEK 13** | Unit #5- DNA and RNA  Ch. 16: DNA: The Molecular Basis of Inheritance  Ch. 17: RNA: From Gene to Protein  Ch. 18: Regulation of Gene Expression |
| **WEEK 14** | Unit #5- DNA and RNA  Ch. 16: DNA: The Molecular Basis of Inheritance  Ch. 17: RNA: From Gene to Protein  Ch. 18: Regulation of Gene Expression |
| **WEEK 15** | Unit #5- DNA and RNA  Ch. 16: DNA: The Molecular Basis of Inheritance  Ch. 17: RNA: From Gene to Protein  Ch. 18: Regulation of Gene Expression |
| **WEEK 16** | Thanksgiving Break |
| **WEEK 17** | Unit #6- Introduction to Genetics  Ch. 13: Meiosis  Ch. 14: Mendel and the Gene Idea  Ch. 15: Chromosomal Basis of Inheritance |
| **WEEK 18** | Unit #6- Introduction to Genetics  Ch. 13: Meiosis  Ch. 14: Mendel and the Gene Idea  Ch. 15: Chromosomal Basis of 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.*