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West Mecklenburg High School

**Syllabus**

Principals of Biomedical Science

West Mecklenburg High School

Teacher: Mrs. Carrie Warren

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Project Lead The Way is a nonprofit organization that specializes in writing activities, projects and problem based national curriculum for STEM education. Please visit [www.PLTW.org](http://www.PLTW.org) for more information.

**Course description**

This course provides an introduction to the Biomedical Sciences Through exciting hands on activities of Biology and Medicine as they explore health conditions including Heart Disease, Diabetes, Sickle Cell Disease, Hypercholesterolemia and Infectious Diseases. The students will determine the factors that led to the death of a fictional person and investigate lifestyle choices and medical treatments that might have prolonged the person’s life.

The activities and projects introduce students to human physiology, medicine, research process and bioinformatics. Key biological concepts including homeostasis, metabolism, inheritance of traits, and defense against disease are included in the curriculum; Engineering principals include the design process, feedback loops, and the relationship of structure to function. This course is designed to provide an overview of all courses in the Biomedical Sciences program and to lay a foundation for subsequent courses.

Each topic or activity is introduced by the teacher. Questions are posed to the class that is essential to understanding the unit topics. Students will read a short activity introduction that presents important information and vocabulary words necessary for completion of the activities and answer questions. Activities take a hand on approach that emphasizes critical thinking, creativity, innovation and real world problem solving.

The teacher’s role in Biomedical Science is more that of a facilitator rather than the traditional teacher role. Students are exposed to methods of researching, processing, and organizing information. Students learn to take an active role in learning that has proven to prepare them for a post-secondary training and career success in STEM (Science, Technology, English and Math.) related fields. Students will conclude activities with questions that summarize key learning objective sand prepare them for future activities.

There is no text book in Biomedical Science programs. Students learn by doing, lab analysis, internet research, and a variety of 21st century methods. Upon completion of all four courses students have the opportunity to receive college credit from several universities.

**Supplies needed for class**

Pens Clear tape

#2 pencils Glue stick

Markers A lab notebook (Composition tablet) no spirals

Color pencils 1&1/2” 3 ring binder

Flash Drive for storing and transferring files (AVID need a section for PBS)

Please come to class prepared to work. Many concept and labs are considered college level activities. Be prepared to follow through with all assignments to learn the course objectives. Students must come to class with the ability to manage their time wisely.

**Biomedical Science Topics**

Unit 1 The Mystery Unit 4 Heart Disease

Unit 2 Diabetes Unit 5 Infectious Disease

Unit 3 Sickle Cell Disease Unit 6 Post Mortem

**Class room expectations**

Class room expectations are to help ensure that all students are safe and have a fair opportunity to learn all School Rules are enforced in this class (see the student handbook).

This is a class room and a laboratory. Laboratory rules will be followed also (see the laboratory rules sheet). In addition the following rules will be followed.

1. All school rules apply
2. Come to class on time (in your seat). Do not gather in the hall. Be prepared (have materials ready), and ready to work follow the warm up.
3. Safety first at all times
4. No food or drink
5. Follow directions the first time they are given. Listen up means stop and wait for instructions.
6. Contribute to positive classroom culture (avoid putting yourself and others down)
7. Use the restroom before class
8. Do Not use profanity
9. Remove hats and sunglasses

**Consequences**

1. A warning
2. Conference with the student
3. Parental contact

4. Referral