

Carolina High Course Syllabus



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Course Title: Principles of Biomedical Science

Daily Schedule	<i>First Semester</i>	<i>Second Semester</i>
<i>First Block</i>	Human Body Systems	Health Science 1
<i>Second Block</i>	Planning	Biomedical Innovation
<i>Third Block</i>	Principles of Biomedical Sciences	Planning
<i>Fourth Block</i>	Medical Interventions	Human Body Systems

Course Description:

In this course, students explore concepts of biology and medicine as they take on roles of different medical professionals to solve real-world problems. Over the course of the semester, students are challenged in various scenarios including investigating a crime scene to solve a mystery, diagnosing and proposing treatment to patients in a family medical practice, to tracking down and containing a medical outbreak at a local hospital, stabilizing a patient during an emergency, and collaborating with others to design solutions to local and global medical problems

Course Goals:

Students engage in forensic science and medical examination investigations in order to: a.) explore biological and forensic science careers; b.) gain experience in experimental design and data analysis; c.) learn about biomolecules and their role in determining identity; d.) learn about human anatomy and physiology and causes of death; e.) practice synthesizing multiple forms of data to draw conclusions; and f.) work to develop professional communication skills.

Students assume the role of different medical professionals working through the schedule of patients in a family care clinic in order to: a.) explore medical careers; b.) practice professional communication; c.) gain experience collecting, recording, and interpreting physiological data; d.) learn how to perform routine medical tests and evaluate results; e.) learn about cutting edge technologies revolutionizing healthcare; f.) understand the interconnectedness between body systems; and g.) explore the various causations and inheritance of disease.

Working as public health officials and then as emergency responders, students are presented with a series of events they must address while exploring: a.) careers in public health, epidemiology, microbiology and emergency medicine; b.) professional communication and presentation; c.) data analysis; d.) processes by which critical medical decisions are made and acted upon; e.) processes by which patients are diagnosed with a contagious disease and by which a causative agent is identified.

Finally, students engage in experiences designed to: a.) build their engineering and experimental design process skills, b.) challenge them to design solutions to current and emerging issues both on and off this world, c.) tangibly highlight that solutions to biomedical science problems rely on collaboration between professions, d.) build their computer science skills by using computer aided design (CAD) and geographic information system (GIS) to innovate the future of medicine, and e.) explore career fields on the forefront of medicine.

Essential Standards:

- 7.4.1: Comply with safety signs, symbols, and labels
- 1.1-2: Analyze how varying forms of evidence can be evaluated for meaning.
- CM--B.3: Interpret medical information and/or laboratory test results to draw conclusions.
- ANP-B.2: Demonstrate how feedback loops help maintain homeostasis in the body.
- MBG-A.1: Describe the structure and function of nucleic acids and the relationship among genes, alleles, chromosomes, proteins, and traits.
- EXD-B.2: Display data appropriately and accurately in digital or written form (graphs, tables, diagrams).
- 7.1.2B: Differentiate methods of controlling the spread and growth of pathogens with standard precautions (PPE, handwashing, environmental cleaning)
- 10.1.1: Demonstrate procedures for measuring and recording vital signs including the normal ranges.

***[Link to Full Set of Standards](#)

Course Scope and Sequence

Units/Topics	Approximate Days
Lab Safety	4 days
Medical Investigation- Forensics	18 days
Medical Investigation- Autopsy	14 days
Clinical Care-Talk to Your Doctor	12 days
Clinical Care- Decode a Diagnosis	19 days
Hospital Disease Outbreak	13 days
Emergency Response	7 days
Medical Innovation- If time permits	

****Please be aware that this curriculum is not set in stone and is subject to change at any time at the teacher's discretion.****

Materials Needed for Course:

- Pen (blue or black)
- Pencil
- Notebook
- Charged Chromebook
- Chromebook Charger
- 2 pocket folder

Grading Policy/Practices:

Grading Scale: A (90-100%) B (80-89%) C (70-79%) D (60-69%) F (Below 60%)

Quarter Grades will be calculated using the following guidelines:

40% Minor Grades

- Concept Quizzes
- Classwork (Group and individual learning activities)
- Self-and-Peer Reflections

60% Major Grades

- Unit Tests
- Projects

Final Course Grades will be calculated using the following guideline: 45% Quarter 1 + 45% Quarter 2 + 10% End of Course Exam Score

Classroom Expectations:

While in my classroom, I expect students, and myself, to:

1. Be prepared
 - a. Students will come to class with all necessary materials.
 - b. Students will come to class and get to work on the bell ringer and have homework completed and out.
2. Be engaged and ready to learn.
3. Respect class time
 - a. If we are working in class, you are expected to be working on the assignment, not chatting or working on assignments for other classes. "I'm going to do it at home" is **not** an acceptable alternative.
 - b. Personal grooming (hair, makeup, etc.) must be attended to outside of class time.
4. **Be prompt!**
 - a. Unless otherwise specified (such as for projects or large papers), assignments are due at the beginning of the class period on the next school day after that in which they are assigned.
 - b. The grade earned on daily assignments turned in late may be reduced by 10% for each day they are late up to 5 days.

Schoolwide Norms and Procedures:

1. Be fully present.
2. Be mindful of communication.
3. Foster a safe environment.
4. Collaborate and work with a growth mindset toward our mission and goal.

Consequences for Not Meeting Expectations:

If you fail to abide by these expectations, possible consequences include:

1. Verbal Warning
2. Parent Notification
3. Discipline Referral

Tardy Policy:

Late to school and late to class are treated similarly. Instructional time is important time. Students are expected to be in class, on time, each block of every day. Students will be turned away from entering the classroom if late and students are then required to get a tardy pass from one of two centrally located tardy kiosks. This is a semester policy.

This policy may change at the quarter to best support the learning environment.

Personal Electronic Device Policy

Consequence for PED Policy Violations:

- **1st Offense** Parent Contact
- **2nd Offense** 1 Day ISS
- **3rd Offense** 1 Day OSS

ID Policy

- All students must have on their school issued ID from the time they enter the building until the time they leave the building.
- The ID must be on a lanyard around the neck.
- All students may only wear an ID from the current school year.
- Students may not wear or display the ID of another student from Carolina or any other school.

Make-up Work for Absences:

If a student is absent, the make-up work policy is:

- The student gets 5 days to make up assignments missed.
- The make-up work policy takes place when a student is absent for any reason (ISS, OSS, etc...)

Homework:

When homework is assigned it will be checked for completion and graded at the teacher's discretion. If a student does not finish their work during class, they are expected to work on it at home as needed to meet deadlines and due dates.

Late Work:

Students will be given one day of grace for full credit on late work. After the grace period students will lose 10% for every day late up to 5 days (ie 2 days late 80% maximum grade and 5 days late 50% maximum grade). After 5 days no late work will be accepted without prior approval from the teacher.

Lab:

Throughout this course, students will be expected to perform and participate in various lab activities. Failure to follow lab procedures and safety protocols will result in the student losing lab privileges.