



# Biotechnology Syllabus

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The class is designed for students who are resourceful, responsible, patient and interested in pursuing science work in the future. Students will learn lab techniques in biotechnology & keep a detailed lab notebook. The course will include lots of lab practical exams & lab notebook checks.

## Course Credit

Students will earn 2 credits for this class. The class meets for 2 consecutive class periods each school day. Students will earn Essentials of Biotechnology 1<sup>st</sup> semester and Applications of Biotechnology 2<sup>nd</sup> semester.

## Standards for Essentials of Biotechnology

<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/Essentials-of-Biotechnology.pdf>

## Standards for Applications of Biotechnology

<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/Applications-of-Biotechnology.pdf>

## Course Description

Students will explore the fundamental principles of biotechnology & career pathways in the biotech fields (medical, pharmaceutical, and agricultural). Topics of study include: *C. elegans*, microbiology cultures, DNA, RNA, and protein technologies, genetic diagnostics, genetically modified organisms, bacterial transformation, forensic science, cloning, stem cells, and bioethics. Laboratory skills taught in this course include: preparing solutions, pipetting, gram staining, running gels, keeping a lab notebook, PCR technique, chromatography, and aseptic techniques.

## Textbook Sequence

1<sup>st</sup> Semester: Chapters 1-3 & 9

2<sup>nd</sup> Semester: Chapters 4-7

## Grading

30% Formative Assessments

60% Summative Assessments

10% Daily

## Class Rules:

- NO Food in Biotech Rooms.
- Students must wash hands prior to all activities and at the conclusion of all activities.
- Cellphones with Teacher Permission Only. Cellphone violations will be documented.
- Cellphones must be on table, face down during ALL assessments.
- No earbuds ever. Earbuds must NOT be visible and must be removed before entering classroom.
- Score 100% on both Safety & Autoclave Test (Compliance Tests are NOT calculated in gradebook).
- No book bags or personal items on lab tabletops. Personal items should be stored in cabinets or UNDER tables. Bags in walkways are trip hazards. A clean & clutter free workspace is safe & required.
- Notify teacher if you are allergic to penicillin and / or latex. Notify teacher if you wear contact lenses.

## Commitment

Biotechnology students will have opportunities not available to others, including sophisticated laboratory research, guest speakers, fieldtrips, and workplace experiences. It is expected that students are professional & represent JCHS with dignity and class. Our image depends on your actions!

## All students are required to participate in the Science Fair!

### Google Classroom

1<sup>st</sup> & 2<sup>nd</sup> Biotech class code: m7thfcv

4<sup>th</sup> & 5<sup>th</sup> Biotech class code: 2xjskie

6<sup>th</sup> & 7<sup>th</sup> Biotech class code: cbmtddo

### Classroom Supplies

Black Ballpoint Pens

Clorox Wipes & Hand Sanitizer Requested

70% Isopropyl Requested

\*Students interested in earning honor credit will be given the opportunity to go on an honor contract. Contracts will be distributed early September. Students who fulfill the honor contract will be awarded 5 points on their course average and transcripts will be changed to reflect honor credit. The contract is open to ALL students in all Biotech classes.