

Cell Biology of Cancer Syllabus

2022

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This CP level course focuses on understanding cancer as a cellular disease, and the challenges of diagnosing and treating it given the needs and limitations of the human body and its cells. We will review basic cell biology through the lens of cells that no longer act like normal cells.

Unit (~3 weeks per unit)	In class - Big Group	Individual Project
1 - What is cancer and why should we care about it?	Portfolio Items: <ul style="list-style-type: none">- Guided notes- Small group activities & follow up questions- Case studies + guest speakers- End of unit open note quiz	Choose a cancer <ul style="list-style-type: none">- Research worldwide epidemiology statistics<ul style="list-style-type: none">- Who gets it?- How deadly is it?- Why did you pick this? Peer Review of work so far
2 - What does it mean to be a normal cell? *Note: we will review (or just learn) mitosis, which you won't have had since Biology (if you even had it since covid disrupted a lot of our curriculum in the last 2 years)	Portfolio items <ul style="list-style-type: none">- Guided notes- Small group activities & follow up questions- Case studies + guest speakers- End of unit open note quiz	Normal cells of this type <ul style="list-style-type: none">- Life cycle- Jobs- Strengths- Organelles Peer review of work so far
3 - How does a normal cell become cancerous? *Note: we will review membranes, DNA and protein synthesis as needed	Portfolio items <ul style="list-style-type: none">- Guided notes- Small group activities & follow up questions- Case studies + guest speakers- End of unit open note quiz	What causes this kind of cancer? <ul style="list-style-type: none">- What mutagens?- What accumulation(s) of mutations?- Find studies to show causality Peer review of work so far
4 - How does cancer make us sick?	Portfolio items <ul style="list-style-type: none">- Guided notes- Small group activities & follow up questions- Case studies + guest speakers- End of unit open note quiz	What path does this kind of cancer usually take? <ul style="list-style-type: none">- Metastasis?- Symptoms? Peer review of work so far
5 - How do we treat cancer?	Portfolio items <ul style="list-style-type: none">- Guided notes- Small group activities & follow up questions- Case studies + guest speakers- End of unit open note quiz	What treatments are being used today for this type of cancer? <ul style="list-style-type: none">- Is there a progression of treatment?- How effective is it?- Who gets treatment? Final peer review
Project presentations	Portfolio <ul style="list-style-type: none">- Take notes so you can ask questions during presentations	Present to the class!

Grading:

- **Weekly/Unit Portfolio Grades**
 - Guided notes, small group activities, case studies **50%**
 - Quizzes **20%**
 - Final project unit progress checkpoints **10%**
 - **Final Presentation of Projects = 20%**
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- **Assignments:** All assignments and due dates will be posted on Google Classroom - I will use the Week Plan to show you the structure of the week. Likely most in-class assignments will be on paper and you will use the iPads for online resources.
 - **Portable electronic devices** (including iPads and earbuds) will be turned off and put away before class has begun. Any use during class time will be dictated by the teacher. Phones will be in your assigned pocket in the front of the room throughout class, even if you leave to go to the bathroom.
 - **Disruptive behavior** includes holding side conversations, clowning around, use of profanity or hate speech, fighting, and various other activities in between. A first infraction will generally result in a warning. A second infraction may result in detention. A student may be asked to leave and go to the APs office at any time at the discretion of the teacher.
 - **Panic dates:** If your grade is below an 80, you need to take action. The best time to take action is right away. For this course *if you have below a 80 as of March 1, we need to have some serious discussion*. Making up work while also staying current is exceedingly difficult, and this course will go by quickly.
 - **Plagiarism and other forms of cheating:** If I suspect that a student has knowingly cheated, I reserve the authority to review the misconduct and determine the grade that the student should receive for the assignment. I may assign a failing grade for the assignment and may require the student to complete additional work.
 - **Supplies** you should have on a daily basis:
 - 3 ring binder - to keep in the classroom for the semester
 - Charged and functional iPad
 - Writing utensil