Mission Valley ROP

Career Technical Training Center

5019 Stevenson Blvd, Fremont, CA 94538-2449

(510) 657-1865 · Fax (510) 438-0378 · www.mvrop.org

Course Title: **PLTW Medical Interventions (MI) and Biomedical Innovations (BI)**

Units of Credit: 20 credits

Meeting Times/Dates: M-F: MVROP, 5019 Stevenson Blvd, Fremont, CA 94560

Afternoon session: 1:00-3:00 p.m.

Instructor Name: Masiha Farooq

Location/Room: MVROP, room 227

Contact Info: mfarooq@mvrop.org

Office hours: By request

Course Description:

This year long PLTW class comprises of two courses, MI in the first semester and BI in the second semester. MI is UC approved ("d" Lab credit) and BI is UC approved ("g" college-preparatory elective credit). This syllabus explains expectations for MI (first semester) only. A detailed and separate BI syllabus will be provided in the second semester. **Students should complete MI with a C or better to be eligible for the second semester, BI.***

NOTE: The Biomedical Course MI is approved as an A-G "D" Lab Science with the UC Schools. This is not meant to replace Biology or Chemistry but will satisfy a 3rd and 4th year science course.

Medical Interventions (MI) SEMESTER 1

Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

==========

Biomedical Innovations (BI) SEMESTER 2*

In the final course of the PLTW Biomedical Science sequence, students build on the knowledge and skills gained from previous courses to design innovative solutions for the most pressing health challenges of the 21st century. Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. They have the opportunity to work on an independent project or an externship during the latter part of the semester.

Note: Detailed course content/course objectives are available at http://www.mvrop.org/Page/231

*A detailed separate syllabus for BI will be provided in the second semester

==========

Required Course Materials

There is no textbook for this class. Each student will receive a separate login that gives them access to the PLTW curriculum online which has all the units, lessons, projects and activities.

Course File/biomedical Portfolio (a three-ring binder with tabbed dividers). This binder should be specifically dedicated to the PLTW course and **not** shared with other classes

A second binder (one-inch, three-ring binder and five sheet protectors) will be required **at the beginning of the second semester**. This binder will include, at a minimum, a resume, a cover letter, a completed job application and one outstanding work sample/project.

Laboratory Journal (composition notebook, college-ruled) *

Loose-leaf paper

Scientific Calculator

Pen/Pencil

Scissors and glue sticks

Lab coats and goggles*

*Hold off buying until teacher provides additional information

==========

Grading Policy/Evaluation: Based on a point system.

a. Skills (Classwork, labs, binder, homework, research projects and presentations) -40%

b. Knowledge (Quizzes and tests)-30%

d. Work Ethic (Participation, attendance, employability skills and punctuality) – 20%

e. Final Project-10%

Grading Scale

A+ = 97-100%	B+ = 87-89%	C+ = 77-79%	D+ = 67-69%
A = 94-96%	B = 84-86%	C = 74-76%	D = 64-66%
A- = 90-93%	B- = 80-83%	C- = 70-73%	D- = 60-63%

Less than 60% = F grade

==========

Homework policy:

Students will be notified what assignments are due and when. It is the responsibility of the student to take down due dates. Students are responsible for completing the assigned reading and homework and keeping up with the class. Any late submissions will have points deducted. If the assignment is turned in within one working day **after** the due date, half of the points will be deducted. Points will also be lost if assignment is incorrect or incomplete. No assignment will be accepted beyond one week of the scheduled date.

==========

Attendance Policy:

Mission Valley ROP's mission is to prepare students for employment, and career preparation via post-secondary educational opportunities. Mission Valley ROP students are expected to be **on time** for classes every day, as if they were showing up for their job.

Your PARENT **must** call MVROP (instructor's classroom phone) or email if you are absent from the Biomedical Sciences class. **Your home school does NOT notify MVROP regarding attendance.** An email or a **NOTE** with parent/guardian contact on it must accompany you back to class related to the absence. Medical related absences **three consecutive days or more should be accompanied with a doctor's note.**

Make-up exams and assignments will only be given for **excused absences** which include medical, legal, school related, like a permitted field trip, or bereavement circumstances. Make-up exams and assignments should be completed as soon as possible. Failure to complete make up assignments will adversely affect your grade.

If you are tardy or miss a Mission Valley ROP class multiple times, your grade will be adversely affected. Points can also be lost for inappropriate behavior.

Classroom Behavior:

1. Arrive to class on time.
2. Respect will be shown to all. No profanity.
3. At no time will you touch the teacher's desk or computer.
4. No food or drink/ gum allowed in the laboratory.
5. Follow all lab rules. Wear lab appropriate clothing and footwear.
6. No leaving class without permission from the instructor.
7. Leave lab equipment ALONE unless instructed. Handle lab equipment as instructed by the teacher when it is required to use them.
8. Listen while the instructor is talking.
9. Cell phones/headphones/electronic devices are strictly prohibited and need to be put away inside bags unless instructor allows it for use related to the curriculum. Students have to follow additional cell phone/ electronic devices/head phone policies which will be explained in class.

Laboratory Safety:

Students and parents **must review and sign** a separate laboratory safety agreement before they are beginning lab work. This document goes over the lab safety rules and regulations for this class.

Cheating and Plagiarism

Mission Valley ROP is committed to preparing students for the workforce. This preparation includes technical skills as well as business ethics. Mission Valley ROP takes cheating violations very seriously. Any student caught cheating on an exam, copying work from another student, or engaging in plagiarism will be given **one warning** and a **failing grade on that assignment.** Subsequent incidents will result in termination from his/her Mission Valley ROP program, a failing grade, and loss of credits.

Laptops:
There will be extensive use of laptops in the PLTW Biomedical Sciences class. Laptops are a privilege and not a right! Students are required to restrict laptop use to their curriculum and searching unrelated content on the laptops, playing games and changing desktop settings, etc. without teacher's permission is strictly prohibited. Students should abide by the **Acceptable Use Policy and All Rules Regarding Cell Phone Use.**

Students completing this course with a grade of "B" or better will receive a Mission Valley ROP Certificate of Completion listing competencies achieved in the course.

==========

By signing below you acknowledge that you have read the course syllabus, and understand the requirements for the MVROP Biomedical Sciences: Medical Interventions/ Biomedical Innovation program, 2018-19.

Student Agreement

As a student in this course, I have read and I understand the policies for the Biomedical Sciences course and agree to abide by the concepts outlined in the syllabus and disclosure statement.

Student's printed name _____

Student's phone/ email _____

Student's Signature_____ Date_____

Parent

My son/daughter has discussed with me the syllabus and the disclosure statement for the Biomedical Sciences Course and I agree with the documents and support my student in abiding by their precepts.

Parent/Guardian's printed name _____

Parent/Guardian's phone/ email _____

Parent/Guardian's Signature_____

Date_____

PLTW MVROP Biomedical Sciences Laboratory Safety Rules 2018-19

Your participation in this laboratory requires that you follow safe laboratory practices. You are required to adhere to the safety guidelines listed below, as well as any other safety procedures given by your instructor or the instructor(s) in charge of the course. In the next class meeting, you will be asked to sign a form certifying that you were informed of the safety guidelines and emergency procedures for this laboratory. Violations of these rules are grounds for expulsion from this laboratory.

Note: You have the right to ask questions regarding your safety in this laboratory, either directly or anonymously, without fear of reprisal (mfarooq@mvrop.org).

- Locate the emergency evacuation plan. Become familiar with the recommended exit routes.
- Locate emergency shower and eyewash station. Location of the fire extinguisher and fire alarm and fire blanket.
- The Safety Data Sheets (SDS) contain information on all known health hazards of the chemicals used in this course. In addition, there is information concerning the cleanup of spills and the accidental exposure to the chemical (e.g. skin contact or inhalation). You are advised to inspect the contents of the SDS binder.
- Dispose of all broken glassware, needles, and scalpel blades in the specially marked receptacle. Never place any of those items in the trash can.
- Exercise care in working with surgical instruments. Notify your instructor immediately if you receive any type of injury in the laboratory no matter how slight.
- Never pipette fluids by mouth. Pipettes will be available for your use. Check odor cautiously. Never taste anything unless directed by your instructor.
- No make-up/lotion/ Chap Stick can be applied in the lab.
- No food/water/chewing gum in the class. Do not drink water from the taps in the laboratory.
- School regulations prohibit eating and drinking at laboratory tables. If you wish to bring food/drink to lab, it must be stored in a designated “clean area” and eaten outside of the lab/ student lounge (MVROP students)
- Shoes must be worn in the laboratory. Do not wear open-toed shoes or sandals.
- Wear a lab coat and safety goggles in this laboratory at all times, unless instructed otherwise. If you have long hair, please use a hair tie. We suggest that you don’t wear loose long sleeves.
- Full length pants/jeans only- no shorts/skirts allowed in the lab.
- No cell phones/iPods/ IPhones in the lab. Avoid texting at all times.
- Wash your hands before and after working in the lab. Wear gloves as needed and directed to by your instructor.
- Turn off the Bunsen/alcohol burner when you are not using it.
- If any hazardous reagents are spilled, notify your instructor at once. Wait for instructions before attempting to clean up a spill.
- Before obtaining any reagents, carefully read the labels on the bottles twice. Many chemicals have similar names. Never return unused chemicals or solutions to the original dispensing bottle.
- Follow the instructor’s directions for disposal of chemicals. When no specific directions are given, you may dispose of non-hazardous, water-soluble substances in the sink, and place insoluble materials such a filter paper in the wastebasket. If you are not sure, ask first.

- Biological waste and any other material contaminated with bacteria should be disposed in specially marked biohazard bins with biohazard bags inside.
- Perform the only experiment assigned; do not experiment on your own. No unauthorized experiments are allowed.
- Every chemical in a laboratory must be properly labeled. Many chemicals have similar names, and you should read the name twice. If a chemical is a solution, the concentration will also appear on the label. Solution concentration is commonly described by molarity (e.g. 6 M HCL) or by percent concentration (e.g. 0.9% NaCl). Labels should also include the initials of the preparer and the date of preparation.
- Use the proper instrument (eye-dropped, scoopula, etc.) to remove reagents from bottles. Do not cross contaminate reagents by using the same scoopula for two different reagents, e.g. don't use the mustard knife in the jelly jar.
- Additional lab policies will be included as and when required.

==========

I have read and understood the above laboratory rules for the PLTW Biomedical Class: Medical Interventions/Biomedical Innovations 2018-19 at MVROP, and agree to abide by them.

Student's printed name _____

Student's phone/ email _____

Student's Signature_____ Date_____

My son/daughter has discussed with me the lab safety rules for the Biomedical Sciences Course and I agree with the documents and support my son/daughter in abiding by their precepts.

Parent/Guardian's printed name _____

Parent/Guardian's phone/ email _____

Parent/Guardian's Signature_____

Date_____