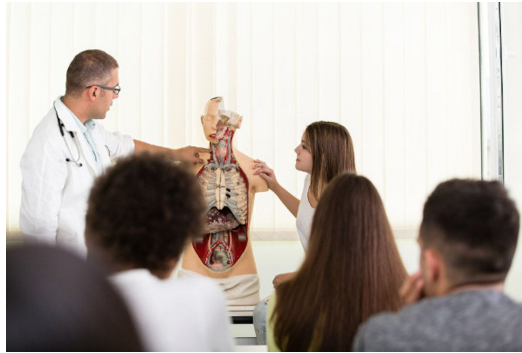


Biology and Medicine at Cal Poly



Program Highlights

- Learn basic medical terminology in anatomy, physiology and biological function.
- Introduce the fundamental concepts of the human body systems with an emphasis on organ system structure, function and interdependence.
- Develop a familiarity with human organ systems and common dysfunctions, including disease, cancer, viruses, and reproduction.
- Engage in meaningful communication with others about issues associated with human health and disease.

Program Dates

- June 28 - July 10, 2020
- July 12 - July 24, 2020

Academic Course Overview

This biology and medicine summer program for teens begins with an overview of basic body systems, including structure and function of major organ systems, bone and muscle groups, and interactions between organ systems. In addition, we'll look at how different organ systems communicate and interdepend on one another. Each class will have a Spotlight on Medicine, looking at various commonly used substances and medicines. There will also be an excursion to a local hospital to provide meaning and relevance to the course. Class activities include collaborative group projects, scientific method experiment, presentation skills development, film clips and readings.

Excursion

Students will have an opportunity to visit and tour the Sierra Vista Regional Medical Center. As the largest hospital in San Luis Obispo County, Sierra Vista Regional Medical Center strives to produce optimal outcomes and exceptional patient experiences to the community it serves. Sierra Vista houses the largest Level III Neonatal Intensive Care Unit between Santa Barbara and Salinas, the only dedicated pediatric unit in San Luis Obispo County and serves as the county's designated trauma center.

Instructor - Michele Roest, MS

Michele Roest is a lecturer in the Biological Sciences Department at Cal Poly in San Luis Obispo. Michele has Bachelor's and Master's degrees in biological sciences. She has been a curriculum developer for K-12 and college-level biology instructor for more than twenty years. In the course of her career as a biologist and science educator, she has worked with federal and state agencies, environmental consulting firms, corporations and nonprofits. Her content knowledge strengths include general biological concepts, ecosystem dynamics, energy transformations, solid waste and wastewater recycling.

Sample Schedule from Past Year

This is only to provide a general idea of the class structure. The exact sequence of lessons will change based on availability of guest speakers and on companies that can host our students.

Day 1. Monday

- Class expectations
- Anatomical Terminology, Types of Tissue
- The Skeletal System
- Spotlight on Medicine - Medicinal plants & history
- Introduce Capstone Projects

Day 3. Wednesday

- The Circulatory System - Organs, flow of blood
- Blood and its components, blood typing with artificial blood test kit
- Spotlight on Medicine - Blood thinners and anticoagulants

Day 5. Friday

- The digestive system - Digestive organs, passage of food, processes
- Use of senses in digesting, taste testing activity
- Spotlight on Medicine - Digestive disorders, causes and treatments.

Day 7. Tuesday

- The Lymphatic system
- The immune response
- Reproductive systems - Male/female reproductive system organs and function
- Spotlight on Medicine - Hormone disruptors in our bodies and the environment

Day 9. Thursday

- Capstone presentations
- Conclusion activity and wrap up

Day 2. Tuesday

- The muscular system
- How muscles work, major muscle groups and their actions
- The Heart - Structure and function
- Spotlight on Medicine - Heart disorders, medicines & therapies.

Day 4. Thursday

- Excursion to Sierra Vista Hospital

Day 6. Monday

- The nervous system
- Nerve Organs, structure function
- How alkaloids and opioids interact with the nervous system
- Endocrine system - Organs, glands and hormones - dysfunctions & disease
- Spotlight on Medicine - Insulin & diabetes

Day 8. Wednesday

- The Excretory System - Excretion and Urination, excretory organs and passage of waste
- Disease: Viruses, bacteria, common fungal infections and cancer
- Spotlight on Medicine - Antivirals, antibiotics, antifungals, cancer treatments

Tuition

- **Residential Students:** \$4,998
 - Includes: all meals, lodging, excursions, academic program, weekend excursions
 - Excludes: optional airport pickup and drop off service (available for an additional fee)
- **Commuter Students:** \$2,798
 - Includes: academic program, excursions, programming from 9am to 5pm, Monday-Friday
 - Excludes: lodging, breakfast, dinner, weekend excursions
- **Extended Commuter Students:** \$3,398
 - Includes: lunch, dinner, excursions, academic program, programming from 9am to 8pm, weekend excursions
 - Excludes: lodging, breakfast