

PATHWAY | BIOMEDICAL SCIENCES AND TECHNOLOGY



PATHWAY DESCRIPTION

YEAR 1

Principles of Biomedical Sciences introduces students to the biomedical field through hands-on, problem-based learning focused on human body systems, disease, research methods, and bioinformatics. Students analyze medical data, investigate health conditions, and apply scientific and engineering principles to determine causes of death in a fictional case, while exploring how lifestyle and treatment decisions impact health outcomes. The course provides a foundational overview of the Biomedical Sciences program and prepares students for advanced coursework.

- Hands-on investigation of human body systems, diseases, and medical research
- Application of biological and engineering principles to real-world health problems
- Foundational preparation for advanced Biomedical Sciences courses



5218 Principles of Biomedical Science

- IDOE Course 5218, 2 Semesters

YEAR 2

Human Body Systems engages students in foundational human physiology through the lens of health, wellness, and biomedical problem-solving. Students study how major body systems function individually and together, using real-world tools, data, and engineering principles to analyze health outcomes and medical interventions.

- **Physiology & Health:** Investigation of respiratory, circulatory, and nervous systems at rest and under stress, with emphasis on homeostasis, metabolism, disease defense, and lifestyle impacts.
- **Technology & Engineering:** Use of monitoring devices and software to design, build, and evaluate systems that track and analyze body functions.
- **Biomedical Foundations:** Introduction to core biological and engineering concepts that prepare students for advanced Biomedical Sciences coursework.



5216 Human Body Systems

- IDOE Course 5216, 2 Semesters
- Dual Credit: Trine University - 4 credits

YEAR 3

Medical Interventions is a project-based course focused on how modern medical practices prevent, treat, and manage disease while improving quality of life. Students examine both the science and design behind current and emerging interventions.

- Explore major medical interventions, including gene therapy, pharmacology, surgery, prosthetics, rehabilitation, and supportive care
- Analyze the design, development, and impact of medical technologies on patient outcomes
- Study the history and future of interventions such as organ transplants and gene therapy using current scientific literature



5217 Medical Interventions

- IDOE Course 5217, 2 Semesters

Students MUST complete all pathway classes with a 73% or better



CAREER OPTIONS

- Medical Doctor
- Biomedical Scientist
- Clinical Research Associate
- Pharmaceutical Sales Rep
- Forensic Investigator
- Medical Technologist
- Lab Analyst
- Physician Assistant
- Physical Therapist
- Pharmacist
- Genetic Counselor
- Science Writer
- Surgical Technician
- & more!



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