

# Career & Technology - Health Science Cluster

## Course: **ADVANCED BIOTECHNOLOGY**

Course Description: Students enrolled in this course will apply advanced academic knowledge and skills to the emerging fields of biotechnology such as agricultural, medical, regulatory, and forensics. Students will have the opportunity to use sophisticated laboratory equipment, perform statistical analysis, and practice quality-control techniques. Students will conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students study a variety of topics that include structures and functions of cells, nucleic acids, proteins, and genetics. Student must pass safety test with 100% mastery. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement.

NEISD # **8342**      Credit: 1.0      Term: Full Year      Grade Placement: 11-12

Prerequisites: Biotechnology, Biology and Chemistry

### Special Notes:

## Course: **ANATOMY & PHYSIOLOGY**

Course Description: Students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students study a variety of topics, including the structure and function of the human body and the interaction of body systems for maintaining homeostasis. Student must pass safety test with 100% mastery. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement.

NEISD # **3253**      Credit: 1.0      Term: Full Year      Grade Placement: 11-12

Prerequisites:

### Special Notes:

## Course: **BIOTECHNOLOGY**

Course Description: This course provides an overview of biotechnology, bioengineering, and related fields. Topics include genetics, cell structure, proteins, nucleic acids, and the impact of immunological events in biotechnology. Students further study the increasingly important agricultural, environmental, economic, and political roles of bioenergy and biological remediation; the roles of nanoscience and nanotechnology in biotechnology medical research; and future trends in biological science and biotechnology. Student must pass safety test with 100% mastery.

NEISD # **8341**      Credit: 1.0      Term: Full Year      Grade Placement: 10-12

Prerequisites:

### Special Notes:

## Course: **COUNSELING AND MENTAL HEALTH**

Course Description: Students model the knowledge and skills necessary to pursue a counseling and mental health career through simulated environments. Students are expected to apply knowledge of ethical and legal responsibilities, limitations, and the implications of their actions. Professional integrity in counseling and mental health care is dependent on acceptance of ethical and legal responsibilities.

NEISD # **8345**      Credit: 1.0      Term: Full Year      Grade Placement: 10-12

Prerequisites:

### Special Notes:

## Course: **HEALTH SCIENCE (CR)**

Course Description: This course is designed to provide for the development of advanced knowledge and skills related to a wide variety of health careers. Students will have hands-on experiences for continued knowledge and skill development. The course may be taught by different methodologies such as clinical rotation and career preparation learning. Student must pass safety test with 100% mastery.

NEISD # **8344**      Credit: 2.0      Term: Full Year      Grade Placement: 11-12

Prerequisites: Principles of Health Science

### Special Notes:

Course: **MEDICAL MICROBIOLOGY**

Course Description: Students explore the microbial world, studying topics such as pathogenic and non-pathogenic microorganisms, laboratory procedures, identifying microorganisms, drug resistant organisms and emerging diseases. Student must pass safety test with 100% mastery. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement.

NEISD # **3251**      Credit: .05      Term: Semester      Grade Placement: 11-12

Prerequisites:

**Special Notes:**

Course: **MEDICAL TERMINOLOGY**

Course Description: This course is designed to introduce students to the structure of medical terms, including prefixes, suffixes, word roots, combining forms, and singular and plural forms, plus medical abbreviations and acronyms. The course allows students to achieve comprehension of medical vocabulary appropriate to medical procedures, human anatomy and physiology and pathophysiology. Course is recommended for all upper level Health Science courses.

NEISD # **3247**      Credit: 0.5      Term: Semester      Grade Placement: 10-12

Prerequisites: None

**Special Notes:**

Course: **PATHOPHYSIOLOGY**

Course Description: Students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students study disease processes and how humans are affected. Emphasis is placed on prevention and treatment of disease. Students will differentiate between normal and abnormal physiology. Student must pass safety test with 100% mastery. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement.

NEISD # **3252**      Credit: 0.5      Term: Semester      Grade Placement: 11-12

Prerequisites:

**Special Notes:**

Course: **PRACTICUM IN HEALTH SCIENCE (CNA)**

Course Description: This course is designed to give students practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience i.e. clinical rotation, CNA, etc. Student must pass safety test with 100% mastery.

NEISD # **8348**      Credit: 2.0      Term: Full Year      Grade Placement: 11-12

Prerequisites: Health Science and Biology

**Special Notes:** *Student must provide their own transportation.*

Course: **PRACTICUM IN HEALTH SCIENCE (CR)**

Course Description: This course is designed to give students practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience i.e. clinical rotation, CNA, etc. Student must pass safety test with 100% mastery.

NEISD # **8346**      Credit: 2.0      Term: Full Year      Grade Placement: 12

Prerequisites: Health Science and Biology

**Special Notes:**

Course: **PRINCIPLES OF HEALTH SCIENCE**

Course Description: This course provides an overview of the therapeutic, diagnostic, health informatics, support services, and biotechnology research and development systems of the health care industry.

NEISD # **8340**      Credit: 1.0      Term: Full Year      Grade Placement: 9-12

Prerequisites:

**Special Notes:**

Course: **WORLD HEALTH RESEARCH**

Course Description: This course examines major world health problems and emerging technologies as solutions to these medical concerns. The course is designed to improve students' understanding of the cultural, infrastructural, political, educational, and technological constraints and inspire ideas for appropriate technological solutions to global medical care issues.

NEISD # **8343**

Credit: 1.0

Term: Full Year

Grade Placement: 11-12

Prerequisites:

**Special Notes:**