

## Science, Technology, Engineering & Mathematics Cluster

### Science & Mathematics Pathway –

**Biotech Medical** – Students in this major learn to apply scientific methods of study and concepts through research and hands-on experiments that will help them further understand biology, chemistry, and botany concepts as it relates to the medical field. They will learn about common laboratory supplies and equipment and how to perform common laboratory tests and techniques. In addition, the students will also study advanced laboratory science and will be expected to do independent research projects. Students will also have an opportunity for an internship.

**Biotech Ag** – Students in this major learn to apply scientific methods of study and concepts through research and hands-on experiments that will help them further understand biology, chemistry, and botany concepts as it relates to the field of agriculture. They will learn about common laboratory supplies and equipment and how to perform common laboratory tests and techniques. In addition, the students will also study advanced laboratory science and will be expected to do independent research projects. Students will also have an opportunity for an internship.

**Biotech Pharmaceutical** – Students in this major learn to apply scientific methods of study and concepts through research and hands-on experiments that will help them further understand biology, chemistry, and botany concepts as it relates to the field of pharmaceuticals. They will learn about common laboratory supplies and equipment and how to perform common laboratory tests and techniques. In addition, the students will also study advanced laboratory science and will be expected to do independent research projects. Students will also have an opportunity for an internship.

**Biotech Environmental** – Students in this major learn to apply scientific methods of study and concepts through research and hands-on experiments that will help them further understand biology, chemistry, and botany concepts as it relates to the field of environmental science. They will learn about common laboratory supplies and equipment and how to perform common laboratory tests and techniques. In addition, the students will also study advanced laboratory science and will be expected to do independent research projects. Students will also have an opportunity for an internship.

**Biomedical Science & Engineering** – Students in this major will study biomedical science and engineering through the exciting Project-Lead-the-Way curriculum that will provide students hands-on projects and experiences. Topics will include bio-informatics, human medicine, and an in-depth study of the human body. In addition, students will also complete projects in the fields of bio-technology, bio-engineering, bio-medical engineering, and bio-molecular engineering. Students will also study advanced math and science courses. Students who complete this major will have been exposed to a diverse curriculum that will better equip them to choose a major at the college/university level. Students will also have the strong math and science foundation needed to be prepared to enter a college/university program in a science related field.

**Biomedical Science & Medicine** – Students in this major will study biomedical science through the exciting Project-Lead-the-Way curriculum that will provide students hand on projects and experiences. Topics will include bio-informatics, human medicine, and an in depth study of the human body. Students will also study advanced math courses that include Pre-AP Algebra II, Pre-AP Trigonometry/Pre-Calculus and an AP math course as well as advanced science courses that include Anatomy and Physiology, Microbiology, Pre-AP Chemistry and AP Chemistry. Students who complete this major will have been exposed to a diverse curriculum that will better equip them to choose a major at the college/university level. Students will also have the strong math and science foundation needed to be prepared to enter a college/university program in a science related field.

**Medical Safety & Analysis Laboratory Science Technician** – Students in this major will learn basic laboratory skills and knowledge used this profession. They will learn lab safety, including OSHA requirements and how to keep laboratory records. Students will learn about common laboratory equipment and supplies, how to prepare chemical solutions, and how to perform common laboratory tests. Students will also learn how to analyze blood, including ABO typing, along with urinalysis and identification of bacteria. In addition, they will learn the mathematical skills needed in this profession along with general, inorganic and organic chemistry and microbiology. Students will also have an opportunity for work-based learning experiences.

**Laboratory Science Technician** – Students in this major will learn basic laboratory skills and knowledge used in a variety of laboratory careers. They will learn lab safety, including OSHA requirements and how to keep laboratory records. Students will learn about common laboratory equipment and supplies, how to prepare chemical solutions, and how to perform common and more advanced laboratory tests. In addition, they will learn the mathematical skills needed in this profession along with general, inorganic and organic chemistry. Students will also have an opportunity for work-based learning experiences.

**Laboratory Science Assistant** – Students in this major will learn basic laboratory skills and knowledge needed to be a laboratory assistant. They will learn lab safety, including OSHA requirements and how to keep laboratory records. Students will learn about common laboratory equipment and supplies, how to prepare chemical solutions, and how to perform common laboratory tests. In addition, they will learn the mathematical skills needed in this profession along with general, inorganic and organic chemistry. Students will also have an opportunity for work-based learning experiences.

**Environmental Safety & Analysis Laboratory Science Technician** – Students in this major will learn basic laboratory skills and knowledge used in this profession. They will learn lab safety, including OSHA requirements and how to keep laboratory records. Students will learn about common laboratory equipment and supplies, how to prepare chemical solutions, and how to perform common laboratory tests. Students will also learn how to conduct quality environmental sampling, testing and clean up along with the environmental laws in Oklahoma. In addition, they will learn the mathematical skills needed in this profession along with general, inorganic and organic chemistry. Students will also have an opportunity for work-based learning experiences. This major will prepare the students for the Class D Water and Waste Water License training and test.

**Industrial Safety & Analysis Laboratory Science Technician** – Students in this major will learn basic laboratory skills and knowledge used in this profession. They will learn lab safety, including OSHA requirements and how to keep laboratory records. Students will learn about common laboratory equipment and supplies, how to prepare chemical solutions, and how to perform common laboratory tests. Students will also learn about industrial laboratory samples and the proper quality control measures used in sampling, testing, and cleanup along with the relationship between the environment and industry. In addition, they will learn the mathematical skills needed in this profession along with general, inorganic and organic chemistry. Students will also have an opportunity for work-based learning experiences.