

## Course Descriptions FSWC – Lee

### **Algebra Honors I:**

This course is designed to give students the requisite skills that provide a foundation for all future mathematics courses. Mathematical concepts will be taught with an emphasis on real-world application, technology, and cross-curricular interaction. The skills learned here can encourage critical thinking which can be used throughout other courses.

**Indicators of STEM Literacy:** *writing and solving linear equations, powers and exponents, quadratic equations, polynomials and factoring, graphing and solving linear inequalities, functions, geometry*

### **Algebra Honors II:**

This course is designed to build on algebraic and geometric concepts. The skills learned here can encourage critical thinking which can be used throughout other courses. The content of this course is important for students' success on the ACT, PERT, and other college mathematics entrance exams. Students should strive to take College Algebra upon completion of this course.

**Indicators of STEM Literacy:** *systems of equations and inequalities, advanced polynomials, imaginary and complex numbers, quadratics, logarithmic and exponential functions, linear systems, factoring, trigonometric functions, conic sections, matrices and their properties*

### **Geometry Honors:**

Geometry will focus on the use of problem solving, representation, reasoning and proof, language and communications, and connections both within and outside mathematics. While shapes and angles are the essence of the course, lessons will incorporate global, cultural, and historical context when appropriate. Algebra skills will be enhanced and a strong foundation will be laid for future mathematics courses.

**Indicators of STEM Literacy:** *foundations of geometry, proof and logic, lines, transformations, probability, polygons, similarity, 2D and 3D measurement, circles and basic trigonometry.*

### **Statistics:**

This course is designed to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. The content of this course is designed to work in conjunction with the environmental science course and will work to blend content for ease of learning. Critical thinking and creativity will be encouraged to help promote learning with use of real life scenarios.

**Indicators of STEM Literacy:** *Exploring data: describing patterns and departures from patterns; Sampling and Experimentation: planning and conducting a study; Anticipating Patterns: exploring random phenomena using probability and simulation; Statistical Inference: estimating population parameters and testing hypotheses*

### **Environmental Science:**

Environmental science is an interdisciplinary blend of content from biology, earth science, chemistry, sociology, economics, law, mathematics, and anthropology. Students will follow the theme of “Think globally, act locally” as they explore not only the content of environmental science but global problems and issues, including how we can solve them by focusing on what we do here in Lee County. This course will be taught with a problem-based focus, to incorporate problem-solving, critical thinking and communication skills in conjunction with scientific content. In addition, many activities will accompany and compliment work done in the students’ Statistics course.

**Indicators of STEM Literacy:** *laboratory experiences, field work, collaborative projects, presentations; the study of: ecology, humans and the environment, Earth’s resources, and sustainability.*

### **Biology Honors:**

This is an honors level course designed to develop an appreciation of science and a positive attitude toward the interrelationship of living organisms. Inquiry, observation, field study, and experimentation provide students a scientific view of their world and facilitate students’ growth in the areas of critical thinking, collaboration, and communication.

**Indicators of STEM Literacy:** *The study of the scientific process, cellular and molecular biology, genetics and development, comparative anatomy, and human systems.*

### **Chemistry Honors:**

Chemistry is a course designed to provide students with a general overview of the study of matter and the changes it undergoes. Developing good problem solving skills, understanding concepts, laboratory techniques, and safety are skills emphasized throughout the course.

**Indicators of STEM Literacy:** *Conduct investigations using appropriate methods and tools, communicating their findings using appropriate technology, accurately recording data and interpreting results, critical thinking to draw logical conclusions based solely on the research/experimentation*

### **Research 1 and 2: Concepts in Engineering:**

This course is designed to combine all the elements of STEM. The goal is to engage students in problem solving, discovery, exploratory learning, and innovation. Students will experience these STEM fields as living disciplines connected to the real world. Our hands on approach will allow students to collaborate cooperatively and solve problems in small group settings.

**Indicators of STEM Literacy:** *developing, creating, and innovating novel solutions to posed problems, communicating and collaborating while engaging in higher-level thinking*

### **Engineering Technology:**

Students will use a computer and application software including word processing, presentations, database, spreadsheets, internet, and email to prepare documents and reports. The course will focus on their daily interactions with technology in the real world and take it a step further by integrating the tools and skills into their other academic courses throughout high school and college.

**Indicators of STEM Literacy:** *Office 365 including but not limited to: PowerPoint, Excel, Word, and Publisher, online learning management software (Canvas), communication with nationally recognized organizations (DonorsChoose.org), critical thinking skills developed through cross-curricular projects*

### **English Honors I:**

Through this course, students are introduced to representative works of American and world literature in which they will analyze, discuss, and write about the historical and cultural perspectives that arise. The course promotes the use of the writing process while addressing such forms as expository, analytical, reflective, and argumentative writing.

**Indicators of STEM Literacy:** *Critical thinking through cross-curricular activities (ECHO)*

### **English Honors II:**

Through this course, students continue their studies of American and world literature with an emphasis on writing and communication. Students study four major novels that is associated with a different theme for the quarter. Each novel is supplemented with short stories, poetry, and modern news articles to attach current events to each novel. Students will be perfecting the MLA writing style and the APA writing style.

**Indicators of STEM Literacy:** *APA writing style, critical thinking through cross-curricular activities: forensics lab related to the crime depicted in *To Kill a Mockingbird*, genetic mutations in Biology as it relates to *Frankenstein*, communication through presentations and Sophomore Showcase.*

### **World History Honors:**

This course is an adventurous journey to discover the way the world connects through events and different eras. History teaches us that the spirit of innovation has been a catalyst for major events and historical periods throughout the past and continue into our modern world. Encouraging students to understand these concepts and allowing them to utilize these same attributes in their own world will help them appreciate the past and move into their future history.

**Indicators of STEM Literacy:** *Self-directed and blended learning in Canvas, Ted Talks, critical thinking through cross-curricular activities, communication through class discussion and Sophomore Showcase.*

**American Government:**

The course enhances students' understanding of the institutions of American constitutional democracy and helps them to identify the contemporary relevance of the Constitution and Bill of Rights.

**Indicators of STEM Literacy:** *critical thinking exercises, problem-solving activities, cooperative learning, self-directed and blended learning in Canvas, Ted Talks, communication through class discussion and Sophomore Showcase.*

**Human Geography:**

This course provides an understanding and analysis of the earth as home to human beings. We will explore how humans utilize the world in terms of distribution of physical (natural features) and cultural phenomena (things humans make and use), interaction of phenomena in specific places, as well as the interaction between and within these places. We analyze the human population on earth, the comprehensive view of settlement patterns and land uses for agriculture, industry, and services around the world.

**Indicators of STEM Literacy:** *field trip to ECHO, critical thinking and communication through presentations, written work, and projects.*

**Economics:**

This course explores the basics of personal finance, banking, and saving strategies. Students will study the way microeconomics affects business today in a market economy in the United States and the comparative market systems from other countries. Students study the ways that the government is responsible for providing services and the “why” and “how” of tax dollars that largely supports our nation’s economy.

**Indicators of STEM Literacy:** *communicating through presentations, hydroponics for the onsite garden, creating a business plan for selling food at the farmer’s market.*

**H.O.P.E:**

This course will explore how to develop and enhance healthy behaviors that influence lifestyle choices for student health and fitness. Through the learned practice of good eating and exercise habits, students will learn the biomechanics of how the human body functions.

**Indicators of STEM Literacy:** *data collection of various fitness factors, anatomy, communication through class discussions and presentations*