

SPRINGFIELD-CLARK

CTC

CAREER TECHNOLOGY CENTER

The Path to Success

Academic Course Offerings 2019-2020

English Course Offerings

English 3* (1 credit)

Students will work on enriching their vocabulary and grammatical precision to become more effective communicators. Throughout the year they will review comprehension strategies and writing processes. Students will be introduced to literary analysis using various genres and modes of writing. Research documentation and composition will also be emphasized.

Advanced English 3 (1 credit, CC+ 3 Credits** at Clark State)

Earn three college credits and complete the first semester of college composition. Hone writing skills while continuing to build reading and communication skills. This course can be taken for college credit if the student chooses to and meets eligibility criteria (note: course title will reflect **CC+** **English 1111** if this is the case).

Prerequisite: Passing scores on Accuplacer (5 in writing, 80 in reading) or ACT (18 English and 22 Reading).

English 4* (1 credit)

Students will have the opportunity to utilize communication skills with an emphasis on vocabulary enrichment and grammatical precision. They will revisit comprehension strategies and writing processes, and are introduced to sophisticated literary analysis.

Advanced English 4 (1 credit, CC+ 3 Credits** at Clark State)

Earn three college credits and complete the final semester of college composition. Hone writing skills while continuing to build reading and communication skills. This course can be taken for college credit if the student chooses to and meets eligibility criteria (note: course title will reflect **CC+** **English 1112** if this is the case).

Prerequisite: Completion of English 1111 with a B or higher.

****Embedded English***

Embedded academics is a hot topic in Career Technical Education (CTE). Essentially, by “embedding” English into our career technical programs, students will receive their regular English instruction while still in their Career Tech Lab. The lessons and activities are collaboratively designed by several teachers, including the CTE teacher and an English teacher. Embedded English programming increases student engagement through rigorous and relevant coursework, as well as a direct, visible link to students’ future college and career goals.

Students enrolled in any of the following programs will receive Embedded English within their career tech program: Auto Body, Auto Technologies, CADD, Carpentry, Electrical Trades, Engineering, Natural Resources, and Welding. The following labs are embedded during senior year only: Animal Science & Management, Computer Graphic Arts, Multimedia Production, Networking, and Software Design.

**Additional information can be found regarding the CC+ program at the end of this course offerings guide.

Math Course Offerings

Math 3 (1 credit)

Brief review of pre-algebra concepts including: operations with rational number, translating, evaluating, and simplifying expressions; translating, simplifying, and solving various types of first degree equations, inequalities and applied problems, including geometry, percent proportions, and other formulas; an introduction to coordinate planes, graphing and writing equations of straight lines. Factoring; operations with polynomials and rational expressions; solving second degree equations by factoring; solving equations with rational expressions.

Prerequisite: Algebra 1/Math 1 and Geometry/Math 2

Algebra 2 (1 credit)

This course is designed to prepare you for a high school Precalculus course. Through this course you will strengthen your foundation in algebra. Systems of linear equations in two variables and applied problems; two-variable inequalities and systems of inequalities and applied problems; operations with rational exponents, radical expressions and complex numbers; relations and functions; simplifying radical expressions; solving equations with rational expressions, equations with radical expressions, quadratic equations by factoring, completing the square, and the quadratic formula, equations quadratic in form; quadratic functions.

Prerequisite: Teacher recommendation, successful completion of Alg 1/Math 1 and Geom/Math 2

Geometry (1 credit)

In this course students will study the properties and applications of common geometric figures in two and three dimensions. It includes the study of transformations and right triangle trigonometry. Inductive and deductive thinking skills are used in problem solving situations, and applications to the real world are stressed. It also emphasizes writing proofs to solve (prove) properties of geometric figures.

Math 4 (1 credit)

This course is designed to apply to students specific career technical programming. Topics will include the review of arithmetic, mathematics of finance, mathematics of trade, payroll, taxes, insurance and elementary statistics. Compute with fractions, decimals, percentages and proportions to solve applications in technology, geometry; convert within and between metric and English systems of measurement; read and interpret measurement tools and gauges; simplify algebraic expressions, solve linear equations and graph linear equations.

Prerequisite: Algebra 2/Math 3/Geometry

Pre-Calculus (1 credit)

This course is designed to prepare you for a high school (and possibly a college) Calculus course. Through this course you will acquire a solid foundation in algebra and trigonometry. Emphasis is placed on understanding the properties of linear, polynomial, rational, radical, piecewise, exponential, logarithmic, and trigonometric functions. You will learn to work with various types of functions in algebraic, graphical and numerical forms.

Prerequisite: Algebra 2

Calculus (1 credit)

In Calculus, students will study functions, graphs, limits, and derivatives and their applications. The course encourages the geometric, numerical, analytical, and verbal expression of concepts, results, and problems.

Prerequisite: Pre-Calculus

Science Course Offerings

Chemistry (1 credit)

Advanced Chemistry offers the same basic topics of chemistry, but topics are treated in greater depth, and additional mathematical relationships are included. Labs are more in depth and inquiry based because critical thinking skills are emphasized. The pace and depth are designed to meet the needs of students who wish to pursue majors in scientific fields or careers in science.

Prerequisite: Earn a C or better in Algebra 1 and Physical Science

Environmental Science (1 credit)

Environmental science focuses on the role of humans in their environment. Students develop a knowledge base of the biological and physical environment, and explore current issues in the natural world. Common themes include ecosystem services, energy/material flow through ecosystems, population dynamics, invasive species, biodiversity, zoology, nonrenewable energy, renewable energy, and energy conservation.

Introduction to Chemistry (1 credit)

Students will perform experiments, record measurements, and draw conclusions to understand matter and energy. In the first semester, topics will include classifying matter, separating mixtures and compounds, forming, naming, and measuring compounds, and exploring how the properties of matter can be applied in real world situations. In the second semester students will explore how the characteristics of matter are influenced by energy, temperature, and pressure. This course introduces students to the foundations in chemistry that are needed for further study in chemistry or any other science course.

Prerequisite: Successful completion of Algebra 1 and Physical Science

Microbes and Infection Control (1 credit)

Microbes and Infection Control is designed to examine basic principles of microbiology and infectious disease control. Students will gain an understanding of microorganisms and the disease process as well as prevention. The following topics may be covered: types of disease carrying organisms – viruses, bacteria, parasites; how disease carrying organisms may be spread; identification of factors which lead to infection; strategies to reduce the transmission of pathogenic organisms; and how infection control concepts are applied in practice. Also, the basics in immunology, vaccinations, and environmental immune response will be covered.

Physics (1 credit)

Physics elaborates on the study of the key concepts of motion, forces and energy as they relate to increasingly complex systems and applications that will provide a foundation for further study in science and scientific literacy. Students engage in investigations to understand and explain motion, forces and energy in a variety of inquiry and design scenarios that incorporate scientific reasoning, analysis, communication skills and real-world applications.

Prerequisite: C+ in Algebra 1 or equivalent

Anatomy and Physiology (1 credit, CC+ 3 Credits** at Clark State)

Anatomy and Physiology provides an introduction to the study of the basic structure and function of the human body. This course provides an integrated view of how the body works, introduces the concept of internal environment and the maintenance of homeostasis, and explains the interrelatedness and the interdependency of organ systems. This course includes laboratory assignments that involve the use of a compound microscope, the stereoscope, and dissections of

various organs and of the cat. Students will also attend a live videoconference of a surgery and visit a cadaver lab. This course may be taken for college credit if the student chooses to, and meets CC+ eligibility criteria (note: course title will reflect **CC+ Advanced A & P** if this is the case).

Springfield-Clark CTC has partnered with post-secondary institutions to give our students additional opportunities for success. The course listed above is a college level course, offering college level instruction. By selecting this course, you understand that you are requesting college level curriculum.

Criteria: You may earn college credit for *The Fundamentals of Anatomy and Physiology, or Bio 1105, at Clark State, if you maintain an 85% year average in the class (with no D's or F's in any given quarter), 90% attendance rate during the year, and earn at least a 75% on the final exam.*

Prerequisite: Successful completion of General Biology with a C

Biological Science (1 credit, CC+ 4 Credits** at Sinclair)

This course is designed as the first in a series of two general education science courses. Covers basic chemistry and biochemistry; cellular and molecular biology. Three classroom, two lab hours per week. This course can be taken for college credit if the student chooses to and meets eligibility criteria (note: course title will reflect **CC+ Biological Science** if this is the case).

Corequisite: Must be in the Veterinary Science career technical program.

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Social Studies Course Offerings

American Government (1 credit)

American Government includes a study of government and economic systems, analysis of the Constitution and all amendments, a close look at the three branches of government, the structure of Ohio state government, and the economic structure of the federal government, including taxes and the Federal Reserve System. Students will also study financial literacy by exploring personal finance, credit, interest rates and developing a retirement savings plan. American Government is required for graduation.

Advanced American Government (1 credit)

Advanced American Government is a rigorous variation of the standard American Government course designed to challenge and prepare students for the demands of a college course load. The advanced course covers the same curriculum as the standard American Government course, but in greater depth.

World History (1 credit)

This course examines world events from 1600 to the present. It explores the impact of the democratic and industrial revolutions, the forces that led to world domination by European powers, the wars that changed empires, the ideas that led to independence movements and the effects of global

interdependence. The concepts of historical thinking introduced in earlier grades continue to build with students locating and analyzing primary and secondary sources from multiple perspectives to draw conclusions. World History is required for graduation.

Elective Courses

Robotics (1 credit)

This course introduces students to the concepts of robotics, focusing on design, construction, and programming of VEX robots. This hands-on course will incorporate problem based learning as students learn how to use robots and their programming to solve new challenges.

Career & College Readiness (1/2 credit)

The purpose of this course is to empower students as they transition from high school into college or their career. The course curriculum will enable students to develop and hone their skills to succeed in college, their career, or both.

Psychology (Either 1/2 or 1 credit depending on schedule)

This course focuses on individual behavior and why an individual thinks, feels, and reacts to certain stimuli. Emphasis will be placed on research methods, stages in childhood and adolescence, how the brain works, altered states of consciousness, psychological testing, and psychological disorders.

College Credit Plus Program

College Credit Plus is Ohio's dual enrollment program that provides students in grades 7-12 the opportunity to earn college and high school credits at the same time by taking courses from Ohio colleges or universities. The purpose of this program is to enhance students' career readiness and postsecondary success, while providing a wide variety of options to college-ready students, at no or limited costs to students and families.

In order to participate, students must apply for admission to an Ohio public or participating private college. The college will determine your eligibility and admit you based on your college-readiness in one or more subject areas. Additionally, participants must submit a letter of intent to participate no later than April 1st, during the school year before which they wish to take CC+ courses.

Additional information can be found at www.ohiohighered.org/ccp. It is recommended that students discuss this programming with their school counselor before participating.