

# **Knox County Career Center**

## **Academic Course Catalog**



Knox County Career Center  
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## **Language Arts Department**

### **Drama (.5 credit only)**

In this elective course, the application of some of the principles of speech will be taught during the second semester in drama. Students will learn the basics of putting on a play and will prepare for a short presentation near the end of the school year.

### **English 10**

Students will utilize the study of various literary genres to explore societal topics and make personal connections through reflective writing and group discussion. Literature lessons will also focus on applying and analyzing different techniques such as the elements of fiction and figurative language, as well as teaching a general appreciation of literature. The students will examine the proper use of elements of English grammar, which they employ in their concentration on writing process and product. The students' study also includes preparation for the Ohio Graduation Test by meeting the Ohio academic standards and by employing necessary formatting and terminology in everyday lessons.

### **English 11**

The focus of this course is the analysis of American literature through reading, writing, speaking and listening. Students employ comprehension and self-monitoring strategies which enable them to read purposefully, then analyze the literature dependent upon genre, era and author. Writing is taught through essay and business letter writing, resume writing and presentation preparation. Oral presentations are prepared, organized and delivered exemplifying the communicative skills necessary for the workplace and higher education. Writing conventions such as grammar, punctuation and capitalization are stressed as well.

### **English 12**

Since communication does not occur in a vacuum but against personal, business and professional backdrops, students learn to make connections between ethics, technology, culture, quality, career and people. Students write essays analyzing various multicultural literary pieces and also write several technical documents based on their vocational labs. Emphasis is placed on developing reading, writing, speaking and listening skills for use in the workplace and higher education. Presentations using various forms of technology are required, as are interviews by area professionals for workplace and college placement. Research skills are honed through the writing of papers, presentations and reading assignments. Writing conventions such as grammar, punctuation and capitalization are stressed as well. Students in Tech Prep labs may earn college credit from North Central State College since the curriculum is dictated by the college in part.

### **English 12 – Young Adult Literature**

In this course students will study various literary texts. Students will read, analyze, discuss, and critique young adult literature selections. Student writing and public

speaking skills will be developed through writing samples, book reports, and presentations.

### **Film as Literature (.5 credit only)**

In this course, students will view and analyze a variety of films that have made an impression on society. Students will examine these films as they would texts within the classroom.

### **Mystery (.5 credit only)**

In this elective course, mystery will be taught with emphasis on students solving mini-mysteries and reading mystery short stories and full-length mysteries. The Arthur Conan Doyle collection of Sherlock Holmes mysteries would be featured culminating in December with the tale set at Christmastime, “The Blue Carbuncle.”

### **Science Fiction (.5 credit only)**

In this elective course, students will read short stories, novels, and science articles. Videos of classic sci-fi movies will be viewed and the social commentaries attached to them will be investigated through class discussion.

### **Speech (.5 credit only)**

This elective course will begin with the elements of speech. Students will work on developing confidence through impromptu speeches, improving research skills, and understanding the basic principles of debate. Several types of speeches will be assigned including persuasive, informative, and demonstration speeches.

## **Mathematics Department**

### **Algebra I**

Algebra I includes the study of the number systems and the appropriate properties along with the operations as they relate to numbers and variables. It also includes the operation with the polynomial expressions that are necessary to solve equations and to solve problems in our physical world.

### **Algebra II**

Algebra II includes the study of functions and an extension of the concepts of Algebra I and many of the concepts of Geometry are provided. Topics covered include: linear and quadratic equations and functions; systems of equations and inequalities; polynomials and rational polynomial expressions; polynomial functions; conic sections; exponential and logarithmic functions; probability and statistics.

### **Algebra II Bridges**

Algebra II includes the study of functions and an extension of the concepts of Algebra I and many of the concepts of Geometry are provided. Topics covered include: linear and quadratic equations and functions; systems of equations and inequalities; polynomials and rational polynomial expressions; polynomial functions; conic sections; exponential and logarithmic functions; probability and statistics.

### **Calculus**

This is a traditional calculus course. Topics covered include, but are not limited to: functions, limits, continuity, indefinite and definite integrals, trigonometric functions, and differentiation.

### **Consumer Math**

Consumer Math is an elective math course available with no prerequisites. Practical math skills needed in life will be taught. They include: budgeting, balancing a checkbook, filing taxes, planning a trip, calculating percentages, buying insurances, and investing. Instruction will include class discussion, lectures, Web Quests, group projects, and quest speakers.

### **Geometry**

In the Geometry course, the students will learn about the following geometric topics: Points, Lines, and Angles; Parallel and Perpendicular Lines; Congruent Triangles; Relationships in Triangles; Proportions and Similarity; Right Triangles and Trigonometry; Quadrilaterals; Circles; Area, Surface Area, and Volume; Transformations; and Reasoning and Proof. These concepts are taught using Geometer's Sketchpad dynamic geometry software, compass and straight edge constructions, and several "hands-on" activities. Current textbook is Glencoe Mathematics *Geometry* (Ohio Edition)

### **Pre-calculus**

This course provides the mathematical background needed for calculus. Concepts are presented and explored from algebraic, graphical, and numerical perspectives. Topics covered include: numerical patterns, polynomial and rational functions, complex numbers, analytic geometry, systems of equations, statistics and probability, limits and continuity, and extensive coverage of trigonometry.

### **Technical Math**

In the Technical Math course, the students will learn about mathematics related to their trade. The topics include: print reading basics, MasterCam fundamentals, and manufacturing and testing for industry. The math related portion covers whole number calculations, fractions, decimals, measurement (linear, angular, four-sided, triangular, and circular), volume and weight, percentages, and the metric system. The mathematics learned address real life experiences in the related career fields.

## **Science Department**

### **Anatomy & Chemistry (Required for Cosmetology I students)**

The curriculum, including standards and benchmarks, is provided by the State Board of Cosmetology. This course focuses on the human anatomy and basic chemistry principles, and how they relate to the field of cosmetology.

### **Anatomy & Physiology**

Course covers structures and function of the human body. Study begins with a review of cell structure and function. This course includes the study of cells, tissues, and the integumentary, skeletal, muscular, nervous systems, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems.

### **Biology**

Biology is the study of life. This course covers biological systems including but not limited to: cell structure, function and metabolism, genetics and the role of DNA in human inheritance, theory of evolution and earth systems.

### **Chemistry**

Course covers laws and theories of chemistry including but not limited to: atomic and molecular structure, chemical bonding, chemical reactions, periodicity of the elements, nature of solutions and stoichiometry.

### **Environmental Science**

Course covers biological and physical characteristics and principles of nature as they pertain to: weather, soil formation, renewable vs. non-renewable resources, and natural cycles. Course critically analyzes the effects of human activity on ecosystems.

### **Integrated Science**

Course investigates the concepts of science methodology and covers the laws and theories of chemistry as well as physics. Chemical principles include but are not limited to: atomic structure, formation of compounds, periodicity of the elements, and nature of mixtures. Physical principles include but are not limited to: motion, energy, and behavior of waves. The course also includes an overview of geological theories as they pertain to the formation of our universe.

### **Physical Science II**

Course covers a broad range of physical science concepts and theories. While exploring these concepts and theories, students will use the scientific method in this lab oriented course. Students will gain an understanding of the physics, chemistry, and the importance of science in their daily lives.

### **Physics**

At the end of this course, students will understand the major physics concepts. These concepts include: mechanics, heat, electricity, magnetism, matter and energy, and physics role in technology. Through science labs students will also gain mastery of the processes of scientific inquiry, critical thinking, problem solving, and ethics.

### **Plant Ecology**

After a survey of the plant kingdom, course concentrates on the structure and function of angiosperms. Specific emphasis is given to the plant kingdom's role in ecosystems. Topics covered include but are not limited to: cell structure, function and

metabolism, seeds, roots, stems, leaves, flowers, fruits and hormones.

### **Principles of Ecology**

Course covers biological systems including but not limited to: cell structure, function and metabolism, genetics and the role of DNA in human inheritance, and the theory of evolution. Emphasis is placed on describing behavior and taxonomy of all living organisms and the manner in which they relate to their environments.

## **Social Studies Department**

### **American Government**

U.S. Government will trace the foundations of democratic government, including the history of the United States government. It will incorporate a comparison of our Constitution to the laws of foreign governments of the past and present. Students will study the economic, social, and cultural issues that shape the government policies. Students will examine the importance of U.S. influence throughout the world in many areas including economic influence and military influence. Students will study current events in our world and measure the impact of state and national issues and politics on our international community.

### **American History**

This course is designed to teach students about the History of the United States beginning with the formation of the US government during the American Revolution and continues into the twentieth century. Students will focus on topics and leaders that influenced the history of America and the course has been designed to incorporate Ohio Graduation Test standards.

### **Civil War (.5 credit)**

Civil War is a one semester class covering the American Civil War. The class will deal with abolition issues prior to the Civil War and the political movements towards war, as well as the war itself and reconstruction. The format is lecture based with three videos used during the course of the semester. Students are expected to be prepared for class and take classroom notes each day. Grades are primarily based upon tests that are taken at the end of each section of notes. The goal of the Civil War class is to create an interest in the American Civil War as well as provide a base of knowledge about the war. Students are encouraged to continue to learn about the war after the class through battlefield visits and books/video.

### **Economics (.5 credit)**

This course introduces students to the basics of economic theory. Students will learn basics of Microeconomics and Macroeconomics. Students will examine their roles as consumers, workers, investors, and voting citizens.

### **Modern American History (.5 credit)**

This course traces history of America from 1945 to the present. Students will begin with the Cold War and examine changes in government, society and military

engagement. This course attempts to fill in the gaps left by previous American history courses and continues into the 21<sup>st</sup> Century. Students will engage in group and individual projects that help draw connections from the past to the present and beyond.

### **Modern History**

In this course, the students will study the history of humankind with a focus centered on modern history. The students will examine major events in the shaping of the modern world. Students will also be introduced to current world issues and the interdependence of world cultures.

### **Twentieth Century World at War (.5 credit)**

The class will cover the time period of 1918 to the Cold War, with an emphasis on the years 1939-1945. The class will examine the causes, the course, and the aftermath of World War II. It will take a detailed look at the major political, social, and military events of the period.

### **World Cultures (.5 credit)**

The World Cultures curriculum is designed to give the student a global perspective by examining cultural regions of the world. The students will explore and analyze the geography, history, religion/philosophies, values systems, cultural factors such as language, art, music, and contemporary issues including the economic situation for each region. Students will be able to compare the differences between the world's cultural regions.

## **Elective Course Offerings**

Elective courses are courses that are not included in the Ohio Core academic content areas in English Language Arts, Mathematics, Science, and Social Studies. These courses may count toward the total credits needed for graduation requirements.

### **Blueprint Reading**

Students learn blueprint reading as it relates to the architecture and construction. Students will use scaling, orthographic projections, dimensioning practices, symbols, notations, and abbreviations to perform area calculations and to interpret floor plan, section, and elevations. Using construction plans, students will identify problems or shortcomings related to the layout and installation of materials for the project.

### **Business Communications (Business Elective Credit / Not an English Credit)**

Students master the oral and written communication skills essential to interacting effectively with people in the workplace and society. This elective course will also cover the elements of speech. Several types of speeches will be assigned.

### **Computer Applications (Business Elective Credit)**

Students identify, evaluate, select, install, use, upgrade, and customize application software. Computer applications include word processing, database, spreadsheet, presentation, and calendar/scheduling software.

### **Computer Science (Tech Elective Credit / Not a Science Credit)**

This is a technology lab and research based course. Topics covered included physical science, scientific reasoning, lab based research projects, and scientific inquiry. This course is an elective course that provides students the opportunity to investigate physical science topics while integrating new and familiar technology into their research. Throughout this course students will gain experience with computers and common computer software.

### **Health (.5 credit)**

Topics included in this course are appearance, behavior, emotions and health, mental mechanics, mental-emotional disorders, alcohol, tobacco and drug abuse, bone, muscles, sex education, first aid, and nutrition. This course is aligned with the National Health Education Content Standards.

### **Home Maintenance & Repair**

Students will apply structural and mechanical skills to remodeling and renovations. In addition, students will learn the process of securing the required building permits, the management of subcontractors, and the coordination of formal building inspections. Students will troubleshoot design or logistics issues and provide possible solutions. Throughout the course, the safe handling of materials, personal safety, prevention of accidents and the mitigation of hazards are emphasized.

### **Physical Education (.25 credit per semester/.5 credit per school year)**

This is a semester (half year) course. This course will stress life skills, physical fitness, and the components of the six standards outlined in the Ohio Department of Education physical education content standards.

### **Transition Life Skills**

This course is designed to develop necessary life skills for secondary students transitioning into adult life. These areas of transition need include employment, independent living, and community participation. Students will be involved in a variety of activities to develop and improve on skills necessary for post-secondary success.

## **Air Force JROTC Course Descriptions**

**Note:** JROTC classes operate on a four year cycle. Returning students rotate between JROTC II, III, and IV. All follow on years of JROTC require a minimum grade of “C” for the previous year. JROTC V is restricted to those students selected for cadet staff.

### **JROTC I: Aviation History and Leadership Education 100A**

This is an aviation history course focusing on the development of flight throughout the centuries. It starts with ancient civilizations, then progresses through time to modern day. The emphasis is on civilian and military contributions to aviation; the development, modernization, and transformation of the Air Force; and a brief astronomical and space exploration history. Leadership Education 100A will introduce cadets to history, organization, mission, traditions, goals, and objectives of JROTC for all services. It introduces key military customs and courtesies, how to project a positive attitude, and examines the principles of ethical and moral behavior. Cadets will be introduced to civics and our national government, including a historical understanding of the American flag and other important national symbols. How the US Constitution protects our rights and freedoms as American citizens will also be covered.

### **JROTC II: Global and Cultural Studies and Leadership Education 100B**

This course introduces students to the world's cultures through the study of world affairs, regional studies, and cultural awareness. The course delves into history, geography, religions, languages, culture, political systems, economics, social issues, environmental concerns, and human rights. It looks at major events and significant figures that have shaped each region. Leadership Education 100B will cover how to be emotionally, mentally, and physically healthy. Avoiding and preventing violence in today's society will also be covered. How to recognize types of bullying and how to advocate for prevention of this type of behavior is included. It will cover healthy living, physical fitness, and how to make safe, drug-free, and responsible decisions.

### **JROTC III: Science of Flight and Leadership Education 300**

This science course is an introductory course that focuses on how airplanes fly, how weather conditions affect flight, flight and the human body. The course is designed to complement materials taught in math, physics, and other science-related courses. Leadership Education 300 students will learn how to become a more confident financial planner and to save, invest, and spend money wisely, as well as how to avoid the credit trap. They will learn about real-life issues such as understanding contracts, leases, warranties, legal notices, personal bills, practical and money-saving strategies for grocery shopping, apartment selection, and life with roommates. To help students increase their potential for success through education, they will learn how to select a school that is right for them; how to apply for admission to a vocational or technical school, community college, or college/university; and how to succeed in these learning environments. Information is provided on how to conduct the job search for students who wish to enter the workforce right after high school or after additional education and training.

### **JROTC IV: Exploring Space and Leadership Education 200**

This is a science course that includes the latest information available in space science and space exploration. It provides an in-depth study of the Earth, Sun, stars, Moon, and solar system, including the terrestrial and the outer planets. It discusses issues critical to travel in the upper atmosphere such as orbits and trajectories, unmanned satellites, and space probes. It investigates the importance of entering space and discusses manned and unmanned space flights, focusing on concepts surrounding spaceflight, space vehicles, launch systems, and space missions. Leadership Education 200 stresses communications skills and cadet corps activities. Much information is provided on communicating effectively, understanding groups

and teams, preparing for leadership, solving conflicts and problems, and personal development. Written reports and speeches compliment the academic materials.

### **JROTC V: Management of the Cadet Corps and Leadership Education 400**

This course is for those students that have been selected to be on cadet staff and manage the entire corps. This hands-on experience affords cadets the opportunity to put theories of previous leadership courses into practice. Planning, organizing, coordinating, directing, controlling, and decision-making will be done by cadets. They will put into practice their communication, decision-making, personal-interaction, managerial, and organizational skills. Leadership Education 400 course provides exposure to the fundamentals of management and many leadership topics that will benefit students as well as provide them with some of the necessary skills needed to put into practice what they have learned. This course, coupled with what cadets have already learned during their time in AFJROTC, will equip them with the qualities needed to serve in leadership positions within the corps.

**JROTC and Physical fitness\***: Students are exposed to fitness and health throughout their JROTC training. This training will include subjects ranging from healthy eating and healthy lifestyles to actual fitness exercises that may include everything from ultimate Frisbee games to running. Specific parental permission is required for participation in athletic events and activities will be tailored to meet the needs and fitness levels of individual students.

\*JROTC classes can be taken with a .25 physical education credit concurrently. This reduces the JROTC credit to .5 for the yearlong course. Students who would like to explore this option must successfully complete the entire year to earn the .25 PE and .5 JROTC credits.