Curriculum Instruction & Assessment, Secondary
Selma Gonzalez, Director

Automotive Systems Technology
Approved by Curriculum Council: 10/8/20

Textbook: Automotive Technology, 7th Edition

Overview: The auto systems course is intended to give the student practical hands-on experiences in diagnosing, troubleshooting and service procedures in the automotive field. The course also covers shop practices of maintenance and repair in automotive specialty areas. These areas include: drive trains and axles, suspensions and steering, engine repair, brakes, air conditioning, parts technician and job seeking skills.

Course Content:

a. Explore the automotive industry, education/training requirements, and career opportunities
b. Read and Interpret diagnostic test results to identify mechanical problems
c. Identify proper automobile servicing and troubleshooting procedures
d. Identify the common tools and equipment used to repair and maintain the automobile in a safe manner

Competencies:

1. Practice shop safety
2. Identify standard and metric bolts
3. Can select and use proper hand tools to remove common automotive fasteners
4. Can operate a twin post car hoist to lift light trucks and cars
5. Can use a micrometer, rules, tape measures, feeler gauge, and other common measuring instruments to measure components
6. Effectively demonstrates ELA skills
7. Can fill out and use a time card and time clock
8. Can fill out a repair order
9. Applies basic engine operation theory for repairs and diagnosing
10. Can change oil and filters
11. Can perform cooling systems pressure test
12. Plan work procedures, using technical charts and manuals
13. Follow checklist to ensure that all critical parts are examined

Medium Heavy Truck Repair I
Approved by Curriculum Council: 10/8/20

Textbook: Heavy Duty Truck Systems, 7th Edition

Overview: This course will provide students with the skills needed to understand, maintain, diagnose and repair Medium and Heavy Diesel Trucks. This course will be the concentrator course for the Medium/Heavy Truck Pathway at Madera High School. Students will be working toward their ASE certification. The emphasis in this course will be on technical skills as it pertains to Medium/Heavy Trucks.

Course Content:

1. Safety: The scope of this unit includes the classroom policies and procedures as well as class/workplace emergency procedures. Special emphasis is placed on Cal/OSHA and Safety and Pollution Prevention (S/P2) standards. Students will understand the basic elements of shop safety including environmental awareness, handling of tools, safety procedures, ventilation procedures, lift safety, use of safety equipment such as fire extinguishers, eye wash stations, protective gear, etc. Supplemental Restraint System safety, High Voltage Circuit safety, MSDS location and knowledge, and evacuation procedures and routes.

2. Tools: Students will learn the variety of tools required for Medium/Heavy truck services including identification, standard/metric, safe handling and use, proper cleaning/storage/maintenance, and proper use of measuring tools.

3. Preparing a Vehicle for Service: Students will learn to identify and communicate to get the information necessary to complete service repair orders. They will understand the process of diagnosis and the purpose of vehicle history. Customer service will be emphasized as well as critical thinking and communication skills.

4. Diesel Engines: Students will learn the basic structures of Diesel Engines including identification of parts and inspection procedures. They will identify engine problems such as vibration issues, leaks, smoke color/quantity, Electronic Diagnostic codes and the recording of them will also be covered. After the general information, students will go into Cylinder Head/Valve Train, Engine Block, Lubrication Systems, Cooling Systems, Air Induction/Exhaust Systems, Fuel Systems incl. Electronic Fuel Management Systems, and Engine Brakes with more detail paid to components, diagnostics, and servicing of each area.

5. Drivetrain: Students will study Clutch, Transmission, Driveshaft/Universal Joint, and Drive Axle within the Drive Train systems. They will identify, diagnose, and service.

6. Brakes: Students will Identify, Evaluate, and Service components within the braking systems including Air Brakes/Air Supply and Service Systems, Air Brakes/ Mechanic-Foundation Brakes, Air Brakes/Parking Brakes, Hydraulic Brakes/Hydraulic Systems, Hydraulic Brakes/Foundation Brakes, Hydraulic Brakes/ Mechanical-Foundation Brakes, Hydraulic Brakes/Power Assist Units, ABS Systems for

both Hydraulic and Air systems and Automatic Traction Control (ATC), as well as wheel Bearings.

7. Suspension and Steering: Students will learn steering system components including steering column, Steering Units, and Steering Linkage. They will also cover the Suspension Systems, Wheel alignment Diagnosis-adjustment-repair, Wheels and Tires, Frame and Coupling Devices.

8. Heating, AC and Ventilation: Students will study HVAC systems, A/C System/components, Heating and Engine Cooling Systems, Operating Systems/controls, and Refrigerant Recovery/recycling/handling.

9. Electrical and Electronic Systems: Students will study General Electrical Systems, Battery, Starting Systems, Charging System Diagnosis/Repair, Lighting Systems, Gauges/Warning Devices, and Related Electrical Systems.

10. Cab: Students will learn to listen to and verify operator concerns regarding the instruments and controls, safety equipment, and hardware located in the cab of the truck. Students will review past maintenance documents, and record conditions on appropriate document(s).

11. Hydraulics: Students will learn the basics of the hydraulic operating systems including proper operation, fluids, and servicing needs.

The Art of Plant Science
Approved by Curriculum Council: 10/15/20

Textbook: Landscaping Principle and Practices, 7th Edition

Overview: This course serves as the introductory course in the Plant Science Pathway. Students will make natural connections to biology and mathematics making this course a rigorous applied agriscience course that is infused with artistic and design elements. Students will learn that landscape and sustainable environmental design projects range from nature, restoration projects, city and regional parks, critical habitat for endangered species, urban forestry and all the way to their front and backyards of homes.

Course Content:

1. Art and History of Cultural Landscapes: This course satisfies the aesthetic valuing requirement by having students conduct research. Students are also able to recognize a variety of landscape architectural styles and accomplishments of contemporary, historic, and prehistoric cultures. This will allow the student to develop a base for making informed aesthetic judgments. The student will learn techniques in approaching solutions to landscape architectural design problems. The student will train her/his aesthetic

outlook on design presentation by continual exercises that train perception of balance and color harmony while achieving a story through visual display from hand drawn to computer generated exhibits. This training will allow the student to develop skills on how to make decisions and be able to respond to the aesthetic value of landscape architectural design.

2. Historical and Artistic Contributions to California Cultural Landscape: Students will identify the critical evolution of immigrant groups to California beginning with the California Native Americans, Gold Rush era, Southeast Asian and Latino immigrants by developing a visual time-line of when key immigrant groups entered the state of California. Utilizing this information the student will be able to identify key characteristics of California crops and the impact of cultural migration on the development of crop production in California.

3. Hydrology- How Water has Shaped California: This unit focuses on the study of water and the influence of water on California's landscape, culture, and art. Students will engage in lab experiments, historical research, as well as the creation of design exhibits. Students will use art to amplify their scientific and historical findings. Student work involves extensive critical thinking and the ability to synthesize information as well as to creatively design.

4. Sustainability- Designing our Future: To introduce the concept of sustainability, students will analyze how the American transportation system affects the environment. Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations. Sustainability is important to making sure that we have and will continue to have, the water, materials, and resources to protect human health and our environment. Students will apply wisdom, ingenuity, and sound science to the choices they make.

5. Campus Green Audit (Site Analysis Through Elements of Design): ADA Accessibility Audit of our High School Farm– Equity in the Landscape through Design. To further explore the environment and design of the campus the students will be asked to use effectively their sketchbook to document evidence of space being used by the students, staff, and community. This will help them articulate their response through their personal lens of gender, culture, and age how they would use the space being observed and compare it to the other people using that space. The student will vividly experience and document their response and observation of how difficult it can be to get from one destination to another when the landscape is not adequately designed for them with

old paving, pathways, and lack of signage. This will open the discussion to policy and law for disabled people to their introduction of the American Disability Act and how design and creative solutions allowed for equity in the built designed landscape.

6. Community By Design: High School Master Planning: Historical Mapping of Madera & Community – A deeper understanding on how a crop production/ plant science evolves over time will be explored in this section, demonstrating how historical archives and technology visually capture the story of the social and historical influences on the landscape. The use of technology and satellite imagery will be emphasized as a critical tool for the designer to understand forms, textures, movement, and human social patterns of landscape use. Google Earth will be introduced as free software that is reliable to research satellite imagery of a site over time.

7. Art and Culture in a Schoolyard Site Design: The Art of Developing and Managing the Design. Once the student has acquired visual awareness of the space through the lens of an artist they will be involved in a real-world project that allows them to synthesize their aesthetic problem solving for a landscape site on the high school campus.They will understand that they will need to follow a design program with a real client and budget who will challenge the student.

8. Landscape showcase: Once the students are comfortable with the design concepts, students will receive hands-on experience in designing and constructing a 10’ X 10’ miniature garden. Students will utilize their knowledge of design skills such as tone, value, line, and balance to develop an eye-catching garden display that also meets the specifications of the fair and theme. This project will require students to work in groups of 2-6 individuals and will be a collective utilization of all skills gained throughout the course.

Foundations of Engineering
Approved by Curriculum Council: 10/15/20

Textbook: Engineering Fundamentals- Design, Principles, and Careers, 2nd Edition

Overview: This course provides students with hands-on opportunities to develop the skills and concepts of fundamental engineering through creative design, innovative projects, and problem-based learning. Students will have multiple opportunities to enhance communication and collaboration through creative real-world challenges. Students will also learn how to document their work as an industry level engineer, and communicate their solutions not only with their peers, but also members of the community in and around Madera.

Course Content:

1. Design Process: Engineering and Design have a long history of innovation and continuous improvement. While engineering notebooking began with hand-drawn

documentation with intricate drawing tools, more recently the integration of technology is shifting some of the more tedious drafting techniques into a Computer Aided format. Keeping accurate design notebooks have always been essential, from early inventions to recent legal technology-related copyright disputes. The integration of hardware and software solutions also transitions designers' computer aided designs into predominantly computer integrated manufacturing. In this unit students will explore the history of engineering and design as well as the engineering notebook. Students will also learn how an industry level engineering notebook is formatted and written.

History of Design and Engineering Documentation: The goal of this lesson is to provide context for Engineering documentation as an evolution of processes, tools used, and technology integration. Students are given the opportunity to explore the documentation history of specific designs or products from different time periods in greater depth and share this knowledge with their peers while developing presentation skills. Engineering Notebook Formatting: Students will learn to document notes, ideas, and designs in their own engineering notebooks by industry standards, developing their notetaking, organization, and data collecting skills.

2. Measurement/Statistics: The goal of Unit 2 is to introduce students to the broad field of the design process as applied to both engineering and architecture whereby those professionals use it to develop innovative solutions to real problems. Students become familiar with the traditional big four disciplines of engineering and the extensive array of career opportunities and engineering problems addressed within each discipline. A design process is presented as a structured method for approaching and developing solutions to a problem or needs of a client. The art and skill of brainstorming is emphasized as students begin to develop skill in graphically representing ideas through concept sketching. A variety of design challenges will be completed throughout this unit to familiarize students with the cyclical nature of the design process.

   Concept Sketching Activities: students learn the importance of sketching in design. Sketches are used in design to convey information about an idea that otherwise may not be possible with words. Students will research examples where sketches are used to convey information and discuss why it's not plausible to use words to achieve the same effect.

   Design Planning Activities: The goal of these activities is to show students that there is often more to a problem than what is stated in the problem statement. Students will be given the opportunity to fully analyze a problem, brainstorm ideas, formulate solutions, and present their solutions. Students are given the freedom to sketch their artistic ideas and use these sketches in a presentation to discuss their artistic product solutions with other students.

3. Modeling & Construction: The goal of Unit 3 is for students to develop an understanding of the purpose and practice of visual representations and communication within architecture and engineering in the form of technical sketching and drawing. This

in-depth unit will give students skills in orthographic projection, dimensioning, perspective drawing, two point perspective drawing, and 2D and 3D hand drawn representations. These drawing skills will be utilized throughout the year as students build skill and gain experience in representing three-dimensional objects in two dimensions. Students will create various technical representations used in visualization, exploring, communicating, and documenting design ideas throughout the design process, and they will understand the appropriate use of specific drawing views (including isometric, oblique, perspective, and orthographic projections). They progress from creating freehand technical sketches using a pencil and paper to developing CAD drawings according to accepted standards and practices that allow for universal interpretation of their design.

This lesson allows students to communicate ideas through engineering technical sketching and drawing. Students will hand sketch 1-point and 2-point perspective pictorial views of a simple object or part given the object, a detailed verbal description or the object, a pictorial view of the object, and/or a set of orthographic projections. Students create hand sketch isometric views of a simple object of part at a given scale using the actual object, a detailed verbal description of the object, a pictorial view of the object, or a set of orthographic projections. Tasks include the application of intently line types (including construction lines, object lines, hidden lines, cutting plane lines, section lines, and centerlines) used on a technical drawing per ANSI Line Conventions and Lettering Y14.2M-2008 and explain the purpose of each line. Students employ hand sketch orthographic projections at a given scale and in correct orientation to fully detail an object or part using the actual object give a detailed verbal description of the object or pictorial from an isometric view of the object. Students learn hand sketching of multiple representations to fully and accurate detail simple objects or parts of objects is a technique used to convey visual and technical information about an object.

4. Residential Design: In this unit, students will become familiar with the industry standards in single family home design and develop a residence which includes both universal and sustainability design features. They will incorporate both hand drawn and CAD generated software in the presentation of their concepts. Students will demonstrate awareness of client requirements and current design trends in the interior and landscape design. Students will also develop an understanding of building codes, common wood frame construction and the impact of various types of building materials and their relationship with the cost of heating and cooling a residence.

   Design a 5 bedroom, single family home, with an outside dining area featuring native, drought tolerant landscaping, using Chief Architect software. The client would like the structure to reflect their love of Craftsman style and your design should reflect that style in the room layout, building materials, landscaping and interior furnishings. Create an inspiration board to go with your CAD materials depicting. Type 2-3 paragraphs defending your choices, and prepare to present your design to class.

5. Collaborative Product Design: This unit introduces students to a variety of modeling methods and formats used to represent buildings, systems, components, processes, and other designs. Students are provided experience in interpreting and creating blueprint designs as well as multiple forms of models common to engineering as they apply the design process to create a design solution. Students will create graphical models of

design ideas using sketches and engineering drawings and create graphs and charts to represent quantitative data. They will learn to represent simple objects in a virtual 3D environment that allows for realistic interactions and animation. The modeling software is also used to provide an efficient method of creating technical documentation of objects. Students are provided the opportunity to create a physical model of a design solution to be used for testing purposes. Mathematical modeling is introduced, and students learn to find mathematical representations (in the form of linear functions) to represent relationships discovered during the testing phase of the design process.

Students will learn the different features offered in the CAD software through a series of activities. These include sketching features, dimensioning, geometric constraints, and 3D modeling features. Students will not only learn how to use these features, but also discuss with other students about what modeling applications can be done with each feature.

This lesson allows students to employ their technical drawings to convey information according to an established set of drawing practices which allow for detailed and universal interpretation of the drawing. Students determine the minimum number and types of views necessary to fully detail a part and choose and justify the choice for the best orthographic projection of an object to use as a front view on technical drawings. Students learn to identify and correct errors and omissions in technical drawings including the line work, view selection, view orientation, appropriate scale, and annotations. Teams create a set of working drawings to detail a design project and fabricate a simple object from technical drawings that may include an isometric view, orthographic projections, and a section view.

6. Reverse Engineering: Unit 6 exposes students to the application of engineering principles and practices to reverse engineer a consumer product. Reverse engineering involves disassembling and analyzing a product or system in order to understand and document the visual, functional, and/or structural aspects of its design. In this unit students will have the opportunity to assess all three aspects of a product's design. Students will learn the visual design elements and principles and their application in design. They will perform a functional analysis to hypothesize the overall function and sequential operations of the product's component parts and assess the inputs and outputs of the process(es) involved in the operation of the product. Students will physically disassemble the product to document the constituent parts, their properties, and their interaction and operation. After carefully documenting these aspects of the visual, functional, and structural aspects of the product, students will assess the strengths and weaknesses of the product and the manufacturing process by which it was produced. Technical sketching and drawing both by hand and using CAD software will be used to document all parts of the reverse engineering process. It will also be a tool for students to make changes, sowing innovation, with the object being investigated.

   In this lesson, students will utilize computer aided drafting and design (CAD) software packages to facilitate virtual modeling of parts and assemblies and the creation of technical drawings. They are used to efficiently and accurately detail parts and assemblies according to standard engineering practice; create three dimensional solid models of parts within CAD from sketches or dimensioned drawings using appropriate geometric and dimensional constraints; generate CAD multi-view technical drawings

including orthographic projections, sections view(s), detailed view(s), auxiliary view(s) and pictorial views, as necessary, showing appropriate scale, appropriate view selection, and correct view orientation to fully describe a part according to standard engineering practice

Engineering Principles
Approved by Curriculum Council: 10/15/20

Textbook: Engineering Fundamentals- Design, Principles, and Careers, 2nd Edition

Overview: This course will begin with a reiteration of the general scientific concepts in engineering. Students will learn how these foundational concepts are the basis for applications to real world engineering problems. Geometry and Trigonometry concepts will be used to show the design of aerofoils and low-friction projectiles as well as bridges and buildings. Students will collaborate with team members to create, program, and compete in challenges, including using the VEX robot of their own design. Students will get a true hands-on education in engineering, rather than merely lessons from a book. Students will be expected to design, build, test and finalize real engineering projects. These projects will be shared with an audience of their peers and also professionals within the Madera community.

Course Content:

1. Engineering Design Process: In this unit, students will recapitulate the fundamentals of design concepts and engineering documentation, including communicating solutions from the course text. The goal of this unit is to provide the context for engineering documentation as an evolution of processes, tools used, and technology integration. With engineering notebook formatting, students will learn to document notes, brainstorm ideas, and document designs in their personal engineering notebooks using industry standards. They will also work on developing their notetaking, organization, and data collecting skills. They will communicate both orally and in writing on multiple aspects of the design process.

2. Simple Machines: In this unit, students will learn the fundamentals of simple machines and the process of mathematically solving the different types of jobs they do. Students will research and report on the historical use of simple machines in the development of the modern world. Students will create and solve engineering problems for the simple machines that they design, and later in the unit combine their simple machines into complex machines. They will be responsible for calculating the mechanical advantage of both the individual simple machines and the complex machine as a whole. Part of this project will be done individually and part with a partner or small group.

   Students will also learn how to calculate the mechanical advantage of simple and complex machines while building examples using VEX materials.

3. Machine Control: In this Unit students will learn how to control mechanical processes using computer software and hardware. The software communicates through a hardware interface with different inputs and outputs. Students will explore various functions of Code.org applications and VEX programming for SKills USA challenges and combine all learned skills to complete a final programmed product.

4. Energy & Power: This unit introduces students to the foundational concepts of voltage, current and resistance in a DC context through circuit-building. The microscopic view of current is considered and used to conceptualize the meaning of voltage, current, and resistance. Students are introduced to safety protocols, circuit diagrams, breadboards, resistors, potentiometers, power supplies, and multi-meters in this unit. Students learn and evaluate Ohm's law, Kirchhoff's Rules, and series and parallel circuits of resistors through direct observation and measurement.

   Students will work collaboratively on the basics of series and parallel circuits using batteries, mechanical switches and light bulbs/LEDs. Students groups will then move onto integrated circuits through the use of a breadboard. Students will also research and demonstrate basic circuitry.

5. Applied Physics and Mathematics: The goal of Unit 5 is for students to have a more concrete understanding of engineering through materials properties and statics. Students begin by learning about beam deflection and then forces on truss structures. They learn to identify forces acting on those structures and then gain the ability to calculate internal and external forces acting on those structures. The students learn about material properties, which lead students to the ability to properly select a material for a given objective.. Creating new products to meet a given need or want is not the only concern in this area of study. How to reuse/recycle materials for continued and unique uses is also learned. The primary way of studying materials properties in this unit is through destructive and non-destructive material testing on various materials. Tensile testing is the major destructive test. Students are engaged in how machines perform these tests and use either a classroom machine or a simulation to further their understanding of these processes. This unit concludes with a design problem whereby students, working in teams, follow the design process to solve a design problem.

6. Statistics and Kinematics: In earlier units students are engaged in learning to use statistics to evaluate an experiment. Here using chapter 7 from the text they begin a study of dynamics, specifically kinematics, and apply statistical skills to study free fall motion. Students use theoretical and experimental data as a basis for learning statistical analysis. By collecting, organizing, and interpreting the data, students build the skills needed to understand data results. They further use these new skills and knowledge to design a vehicle that will propel itself. Later, students will address the problem of designing a machine to accurately launch an object a specified distance. Examining projectile motion is at the core of this design problem.

AP Microeconomics
Approved by Curriculum Council: 10/15/20

Textbook: TBD

Overview: “Study the principles of economics that apply to the behavior of individuals within an economic system. You’ll use graphs, charts, and data to analyze, describe, and explain economic concepts.”

Course Content:

1. Basic Economic Concepts: Students will study the foundations of microeconomic thinking, including how to evaluate decisions based on constraints and trade-offs and make rational economic choices.

   Topics may include:
   - Scarcity
   - Resource allocation and economic systems
   - The Production Possibilities Curve
   - Comparative advantage and gains from trade
   - Cost-benefit analysis
   - Marginal analysis and consumer choice

   To understand economics, students need to understand that because most resources are scarce, individuals and societies must make choices. When making rational choices, people do so “on the margin,” taking into account the additional costs and benefits of their decisions. The foundational economic ideas addressed in this unit form the basis for more advanced analysis of consumer and producer behavior that will be developed throughout the course.

2. Supply and Demand: Students will learn the basis for understanding how markets work with an introduction to the supply and demand model.

   Topics may include:
   - Demand
   - Supply
   - Elasticity
   - Market equilibrium, disequilibrium, and changes in equilibrium
   - The effects of government intervention in markets
   - International trade and public policy

   This unit will provide the basis for understanding how markets work by introducing the supply and demand model. Students will build on the concepts of scarcity and choice that were introduced in the first unit and explore the factors that influence consumer and producer behavior. They will learn how the interaction of consumers and producers in competitive markets determines market prices and results in the most efficient allocation of scarce resources. At the end of the unit, students will also begin exploring the effects of government policy on market outcomes, laying the groundwork for additional analysis in the last unit of the course.

3. Production, Cost, and the Perfect Competition Model: Students will explore the factors that drive the behavior of companies and learn about the perfect competition model.

   Topics may include:
   - The production function
   - Short- and long-run production costs
   - Types of profit
   - Profit maximization
   - Perfect competition

   Unit 3 focuses on firm behavior and culminates with an introduction to the perfect competition model, which will form a basis of comparison for other market structures in the next unit. This unit builds on the idea of supply, which was introduced in the previous unit, and explores in more detail what drives the decisions that firms make. Thinking like a firm may be challenging for students, who are more used to acting as consumers in their everyday lives. Drawing connections to students' own experiences and carrying out classroom simulations can help bring these concepts to life. Reminding students of the ways in which the behavior of firms is consistent with the ideas of cost-benefit analysis and marginal decision-making addressed in the first unit of the course may also be helpful in elucidating these concepts.

4. Imperfect Competition: Students will learn how imperfectly competitive markets work and how game theory comes into play in economic models.

   Topics may include:
   - Monopoly
   - Price discrimination
   - Monopolistic competition
   - Oligopoly and game theory

   In the real world, firms rarely operate in perfectly competitive markets. In this unit, students will encounter the ways in which imperfectly competitive markets depart from the model of perfect competition introduced in Unit 3. Students will continue to build on their understanding of what it means for a market to be efficient or inefficient as they consider the welfare implications of imperfect markets. In the context of learning about oligopoly behavior, students will be introduced to the field of game theory as an approach to studying strategic decision making.

5. Factor Markets: Students will learn how concepts such as supply and demand and marginal decision-making apply in the context of factor markets.

   Topics may include:
   - Introduction to factor markets
   - Changes in factor demand and factor supply
   - Profit-maximizing behavior in perfectly competitive factor markets
   - Monopsonistic markets

By this point in the course, students are familiar with how product markets operate and what drives firm decision making. In this unit, students will apply many of the concepts they learned previously but now in the context of factor markets. Like with product markets, the laws of supply and demand apply to factor markets with an upward-sloping supply curve and a downward-sloping demand curve. In factor markets, firms hire additional resources up to the point at which the resource's marginal revenue product is equal to its marginal resource cost. This decision is another application of the idea first introduced in Unit 1 of making an optimal choice by equating marginal benefit with marginal cost and firms' decisions to maximize profits where marginal revenue equals marginal cost.

6. Market Failure and the Role of Government: Students will examine the conditions under which markets may fail and the effects of government intervention in markets.

   Topics may include:
   - Socially efficient and inefficient market outcomes
   - Externalities
   - Public and private goods
   - The effects of government intervention in different market structures
   - Income and wealth inequality

   This unit prepares students to understand the theoretical arguments for and against government intervention in markets and therefore has important public policy applications. Students will examine the conditions under which markets may fail and the effectiveness of government policies that are designed to correct market failures. In exploring the idea of market failures and government interventions to correct them, students will build on their understanding of efficiency and what it means for a firm to produce the socially optimal quantity or not. Students will also learn about how inequality is measured and the sources of income and wealth inequality.

AP Comparative Government and Politics
Approved by Curriculum Council: 10/15/20

Textbook: TBD

Overview: "Examine the political institutions and processes of six different countries—China, Iran, Mexico, Nigeria, Russia, and the United Kingdom—and compare the ways they address problems. You'll analyze data and readings to draw conclusions about political systems."

Course Content:

1. Political Systems, Regimes, and Governments: Students will learn about the skills and concepts that political scientists use in their work and apply them as you analyze data related to the six course countries.

   Topics may include:

- How political scientists collect and use data and information
- Types of political systems: regimes, states, nations, and governments
- Democracy and authoritarianism
- The ways governments and regimes get, keep, and lose power
- Factors that can either help or undermine the stability of a government

Comparative political scientists seek to understand similarities and differences between states, evaluating political realities and understanding political change. This first unit sets the foundation for students to think like comparative political scientists by teaching them to read and analyze qualitative and quantitative data related to the six required course countries (China, Iran, Mexico, Nigeria, Russia, and the United Kingdom) and helping them understand concepts and examples they can use to support an argument about the countries. Understanding the similarities and differences in political systems, regimes, and governments—how they function and how they gain and maintain power and legitimacy— as well as the terminology used to describe them provides students with the foundational knowledge needed to be able to compare course countries throughout future units.

2. Political Institutions: Students will look at the political structure and the branches of government of each of the six course countries.

   Topics may include:
   - Parliamentary, presidential, and semi-presidential government systems
   - Executive institutions (for example, presidents, prime ministers, cabinets)
   - Legislative systems (for example, congressional or parliamentary)
   - Judicial systems (judges and courts)

   This unit first looks at the political structure in each course country and then the executive, legislative, and judicial systems within the political structure. Students develop an understanding of the various structures of the branches of government as well as how each uses the structure to wield and maintain power. Knowing and applying country-specific terminology allows students to understand the similarities and differences between different systems of authority in the context of the six course countries. At the end of this unit, students should be able to characterize the advantages and disadvantages of different institutional arrangements and the implications of having one system over another in regard to stability, legitimacy, and policy making.

3. Political Culture and Participation: Students will study the ways in which the citizens of a country interact with, influence, and are affected by their government, using the six course countries as examples.

   Topics may include:
   - Where the political attitudes and beliefs of citizens come from
   - Political ideologies such as individualism, communism, and fascism
   - Political participation by citizens and its effects
   - Civil rights and civil liberties
   - Social divisions within a country and their effects

Politics hinges on the interactions between the state and society. A country's political patterns are influenced by the characteristics and demands of its population. Citizens participate in politics both individually and in groups. Cleavages within the population, such as ethnicity, religion, or class, become politically relevant. This unit includes civil society, a range of voluntary associations that are autonomous from the state and that can help mediate state power and enhance the power of citizens. Students learn about participation in both authoritarian and democratic regimes and how the type of regime impacts the type of participation. Understanding that concept will help guide students in Unit 4, where they consider the role and impact of parties and elections on political participation.

4. Party and Electoral Systems and Citizen Organizations: In the context of the political structures, events, and issues associated with the six course countries, you'll learn how individuals, parties, and citizen organizations work to gain influence and power.

   Topics may include:
   - Types of electoral systems and election rules
   - Types of political party systems
   - How social movements and interest groups cause political change

   Individuals and groups use various ways to gain influence and power within a government and its political institutions. This unit breaks down the larger concepts about political institutions studied in Unit 2 and considers how individuals, parties, and citizen organizations influence power. The exercise of political power in the six course countries occurs in a variety of ways. For example, the rules of electoral systems, both formal and informal, have a profound impact on citizen participation. Studying how and why a regime grants or limits access to sources of power helps students understand and explain how this control ultimately impacts policy making in a global context.

5. Political and Economic Changes and Development: Students will explore how the political systems and power structures of the six course countries play out in an interconnected global context.

   Topics may include:
   - Political responses to global market forces
   - The effects of economic liberalization policies
   - How governments adapt social policies to address political, cultural, and economic changes
   - Rapid industrialization and its impacts
   - The causes and effects of demographic changes

   The interaction of political and economic changes within and across the course countries and how these changes impact political policies and behaviors is particularly important for students to understand. They need to connect what they learned about the domestic political power structure in previous units with how that structure plays out in an interconnected global context. Every country studied in this course has had profound economic and political change over the past 30 years. Students will study political changes through the lens of democratization and the relative success or failure of these

efforts to take hold. The economic impact of globalization on local citizens, relationships between countries, and the response to challenges presented in this economic reality are the focus of the unit.