Perris Union High School District
Course of Study

A. COURSE INFORMATION

Course Title:
Agricultural Sciences & Systems
- ☐ New
- ■ Revised

If revised previous course name if changed
Plant & Animal Physiology

Transcript Course Code/Number:
(To be assigned by Educational Services)

Subject Area:
- ☐ Social Science
- ☐ English
- ☐ Mathematics
- ■ Laboratory Science
- ☐ World Languages
- ☐ Visual or Performing Arts
- ☐ College Prep Elective
- ■ Other (Agriculture)

Is this classified as a Career Technical Education course?
- ☑ Yes
- No

Grade Level
- ☐ MS
- ☐ HS
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ■ 9
- ■ 10
- ☐ 11
- ☐ 12

Required for Graduation:
- ☐ Yes
- ■ No

Meets UC/CSU Requirements?
- ■ Yes
- ☐ No

Was this course *previously approved by UC* for PUHSD?
- Yes
- ■ No
(Will be verified by Ed Services)

Credential Required to teach this course:
Designated Subjects: CTE: Agriculture
Single Subject: Agriculture

To be completed by Human Resources only:

Signature 12/10/2019 Date

Meets "Honors" Requirements?
- Yes
- ■ No

Meets "AP" Requirements?
- Yes
- ■ No

Unit Value/Length of Course:
- ☐ 0.5 (half year or semester equivalent)
- ■ 1.0 (one year equivalent)
- ☐ 2.0 (two year equivalent)
- ☐ Other:

Submitted by: Stephen Daly, Aaron Neering, Sara Schmitt, Gretchen Schultz
Site: HHS, PHS, SSC
Date: 12/06/19

Approvals	Name/Signature	Date
Director of Curriculum & Instruction		12-11-19
Asst. Superintendent of Educational Services		12-12-19
Governing Board		

Prerequisite(s) (REQUIRED):
9th or 10th grade only
Corequisite(s) (REQUIRED):
None
Brief Course Description (REQUIRED):
This integrated class combines an interdisciplinary approach to laboratory science and research with agricultural management principles. Using the skills and principles learned in the course, students design systems and experiments to solve agricultural management issues currently facing the industry. Additionally, students will connect the products created in this class with industry activities to link real-world encounters and implement skills demanded by both colleges and careers. An additional unit on the solar system and earth's formation will address NGSS physics standards within the context of agricultural systems. The course culminates with an agriscience experimental research project in which students design and conduct an experiment to solve a relevant issue. Final projects will be eligible for Career Development Event competition at FFA events. In addition to the classroom coursework, students will be graded on participation in intracurricular FFA activities as well as the development and maintenance of an ongoing Supervised Agricultural Experience (SAE) program.

B. COURSE CONTENT
Course Purpose (REQUIRED): ***What is the purpose of this course? Please provide a brief description of the goals and expected outcomes. Note: More specificity than a simple recitation of the State Standards is needed.***
To meet the requirements of NGSS shifts and to promote college and career readiness in all students, changes to the current Agriculture Science courses are necessary. In order to achieve the NGSS goals of 'All Standards All Students', the new course will cover NGSS standards that are not included in the Ag Biology and Ag Chemistry courses. The new course will also meet the A-G UC/CSU requirements for a Lab Science D classification, providing students with more opportunities to meet science recommendations for UC/CSU admissions. In addition, the new course will prepare students to take the Agricultural Science 1 Precision Exam, which will create more opportunities for career advancement after high school.
Course Outline (REQUIRED):

Detailed description of topics covered. All historical knowledge is expected to be empirically based, give examples. Show examples of how the text is incorporated into the topics covered.

- Identify and ask significant questions that clarify various points of view to solve problems.
- Design agricultural experiments using the scientific method.
- State the steps of the scientific method.
- Analyze an agricultural problem and devise a solution based on the scientific method.
- Understand the importance of maintaining and completing the California Agricultural Record Book.
- Identify and ask significant questions that clarify various points of view to solve problems.
- Design agricultural experiments using the scientific method.
- State the steps of the scientific method.
- Analyze an agricultural problem and devise a solution based on the scientific method.
- Use electronic reference materials to gather information and produce products and services
- Interpret and explain terminology and practices specific to the Agriculture and Natural Resources sector.
- Comply with the rules, regulations, and expectations of all aspects of the Agriculture and Natural Resources sector.
- Examine the interrelationship between agriculture and the environment.
- Communicate public concern for technological advancements in agriculture, such as genetically modified organisms.
- Research the laws and regulations concerning biotechnology.
- Integrate the use of technology when collecting and analyzing data.
- Develop and implement a plan for basic integrated pest management.
- Read and interpret pesticide labels and understand safe pesticide management practices.
- Identify common horticultural pests and diseases and methods of controlling them.
- Design an integrated approach to solving plant problems.
- Demonstrate how to categorize insects as pests, beneficial or neutral, and describe their roles.
- Compare and contrast conventional, sustainable, and organic management methods to prevent or treat plant disease symptoms.
- Use integrated pest management to prevent, treat, and control plant disease symptoms (including conventional, sustainable, and organic management methods).
- Research how biotechnology can be used to manage pests.
- Locate, and adhere to, Material Safety Data Sheet (MSDS) instructions
- Recognize the elements of communication using a sender–receiver model.
- Demonstrate the use of appropriate tools and technology used in the Agriculture and Natural Resources sector.
- Explain the environmental influences on plumbing and irrigation system choices (e.g., filter systems, water disposal, drip vs. flood).
- Identify and ask significant questions that clarify various points of view to solve problems.
- Solve predictable and unpredictable work-related problems using various types of reasoning (inductive, deductive) as appropriate.
- Use systems thinking to analyze how various components interact with each other to produce outcomes in a complex work environment.
- Interpret information and draw conclusions, based on the best analysis, to make informed decisions.
- Understand photosynthesis and the roles of the sun, chlorophyll, sugar, oxygen, carbon dioxide, and water in the process.
- Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear

- fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.
- Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.
- Communicate scientific ideas about the way stars, over their life cycle, produce elements.
- Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.

RESEARCH METHODS IN AGRISCIENCE. Students will be able to:

- Identify and ask significant questions that clarify various points of view to solve problems.
- Design agricultural experiments using the scientific method.
- State the steps of the scientific method.
- Analyze an agricultural problem and devise a solution based on the scientific method.
- Understand the importance of maintaining and completing the California Agricultural Record Book.
- Identify and ask significant questions that clarify various points of view to solve problems.
- Design agricultural experiments using the scientific method.
- State the steps of the scientific method.
- Analyze an agricultural problem and devise a solution based on the scientific method.
- Use electronic reference materials to gather information and produce products and services
- Interpret and explain terminology and practices specific to the Agriculture and Natural Resources sector.
- Comply with the rules, regulations, and expectations of all aspects of the Agriculture and Natural Resources sector.

PLANT SYSTEMS. Students will be able to:

- Examine the interrelationship between agriculture and the environment.
- Communicate public concern for technological advancements in agriculture, such as genetically modified organisms.
- Research the laws and regulations concerning biotechnology.
- Integrate the use of technology when collecting and analyzing data.
- Develop and implement a plan for basic integrated pest management.
- Read and interpret pesticide labels and understand safe pesticide management practices.
- Identify common horticultural pests and diseases and methods of controlling them.
- Design an integrated approach to solving plant problems.
- Demonstrate how to categorize insects as pests, beneficial or neutral, and describe their roles.
- Compare and contrast conventional, sustainable, and organic management methods to prevent or treat plant disease symptoms.
- Use integrated pest management to prevent, treat, and control plant disease symptoms (including
- conventional, sustainable, and organic management methods).
- Research how biotechnology can be used to manage pests.
- Locate, and adhere to, Material Safety Data Sheet (MSDS) instructions

ANIMAL SYSTEMS. Students will be able to:

- Examine the interrelationship between livestock animals, their production and the environment.
- Communicate public concern for technological advancements in agriculture, such as genetically

modified organisms & feed used on livestock.

- Research the laws and regulations concerning biotechnology in agriculture.
- Integrate the use of technology when collecting and analyzing data relating to animal husbandry.
- Develop and implement a plan for basic disease & integrated pest management in the animal industry.
- Read and interpret feed labels & rations relating to nutritional needs for livestock production.
- Identify common diseases and methods of controlling them in animal/livestock production.
- Design an integrated approach to solving common animal health problems.
- Demonstrate how to categorize breeds of livestock, their uses both privately and commercially, and describe their roles.
- Compare and contrast conventional, sustainable, and organic management methods in the animal industry.
- Use proper methods of herd management to prevent, treat, and control animal disease symptoms (including conventional, sustainable, and organic management methods).
- Research how biotechnology can be used to manage domestic livestock animals.
- Locate, and adhere to, Material Safety Data Sheet (MSDS) instructions as applicable to our learning laboratory & school site.

NATURAL RESOURCES. Students will be able to:

- Recognize the elements of communication using a sender–receiver model.
- Demonstrate the use of appropriate tools and technology used in the Agriculture and Natural Resources sector.
- Explain the environmental influences on plumbing and irrigation system choices (e.g., filter systems, water disposal, drip vs. flood).
- Identify and ask significant questions that clarify various points of view to solve problems.
- Solve predictable and unpredictable work-related problems using various types of reasoning (inductive, deductive) as appropriate.
- Use systems thinking to analyze how various components interact with each other to produce outcomes in a complex work environment.
- Interpret information and draw conclusions, based on the best analysis, to make informed decisions.
- Understand photosynthesis and the roles of the sun, chlorophyll, sugar, oxygen, carbon dioxide, and water in the process.

SOLAR SYSTEM UNIT. Students will be able to:

- Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.
- Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.
- Communicate scientific ideas about the way stars, over their life cycle, produce elements.
- Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.

FOOD SYSTEMS. Student will be able to:

- Define and explain common foodborne disease and the role of food safety plays in the agricultural industry as it relates to animal processing facilities.
- Demonstrate appropriate food-handling protocols to reduce incidents of illness by understanding Osmosis in Food Preparation.
- Identifying key components to HACCP and how it relates to the agricultural industry.
- Determine potential disease-causing agents and identify specific pathogens within a commercial food production facility by generating a swab and culture test.
- Determine how chemical properties affect the preservation of food products. Ex: Reference commodities through their prior knowledge & how they contain pH, brix and water content.
- Collect and record data in charts that they design.
- Implementing Procedures and Practices by identifying areas of critical control, identifying scientific evidence used as expert advice to validate HACCP protocols identifying specific procedures and practices to implement protocol in the plant. (examples include: Three Circle Venn Diagram, Comparison Chart, Cause and Effect, Factors in the Cause or Sorting Organizer).
- Food Labeling through research to prepare an infographic, which will include symptoms, major food allergens, treatment/when to seek treatment.
- Identify the relationship of livestock antibiotic withdrawal periods and what must be included in origin labeling
- Create a comprehensive food safety product plan
- Engage in industry-standard testing protocols to assess the chemical profile of the food product (pH level, potential toxicity, etc.) as well as engage in a multi-interval microorganism testing protocol.
- Demonstrating prior knowledge to complete an agriscience research paper and display.

Writing Assignments (REQUIRED):
Give examples of the writing assignments and the use of critical analysis within the writing assignments.

Students will be required to perform various writing assignments:

- Lab Reports including all steps of the scientific method
- Short answer questions and responses relating to subject material
- Vocabulary descriptions
- Critical thinking prompts relating to current science research
- Reading and writing relating to science
- Note taking

INSTRUCTIONAL MATERIALS (REQUIRED)	
Textbook #1AGRISCIENCE: Fundamentals & Applications. *Author*: L. DeVere Burton *Version*: Most current. Agricultural lab supplies (already in use)	
Title: AGRISCIENCE: Fundamentals & Application	Edition: 5th Edition
Author: DeVere Burton, Elmer Cooper	ISBN: 9781435419667

Publisher: Cengage	Publication Date: 2010
Usage: ❑ Primary Text ❑ Read in entirety or near	
Textbook #2	
Title: Life Science	Edition:
Author:	ISBN:
Publisher:	Publication Date:
Usage: ❑ Primary Text ❑ Read in entirety or near	
Supplemental Instructional Materials ***Please include online, and open source resources if any.***	
Online resources via Google Classroom including notes & subject matter assignments. www.calaged.org www.ffa.org www.srffa.org	
Estimated costs for classroom materials and supplies (REQUIRED). ***Please describe in detail.*** If more space is needed than what is provided, please attach backup as applicable.	
Cost for class set of textbooks: $ 0	Description of Additional Costs: N/A
Additional costs:$0	
Total cost per class set of instructional materials:	$ 0

Key Assignments (REQUIRED):
Please provide a detailed description of the Key Assignments including tests, and quizzes, which should incorporate not only short answers but essay questions also. How do assignments incorporate topics? Include all major assessments that students will be required to complete
Through the SAE program students will engage in a hands-on experience project that involves something in the agricultural industry. **Students will also learn skills that will prepare them for potential careers.** **Students will learn basic record book skills through the use of the online AET**

(Agricultural Experience Tracker) system.

Students will participate in FFA extracurricular leadership activities.

Students will participate in Career Development Events hosted by local FFA chapters & programs.

Background Scholarly Research In this assignment, students begin the work of investigation into their project. Students will read and deconstruct scholarly journal articles to identify the key components of agriscience research. The manner in which this assignment is completed can be determined by the individual teacher. Examples of student outcomes of the journal assignment could be: graphic organizer, abstract, oral presentation, visual aids, etc.

This assignment models the expected outcomes of all projects in the coming units.

Facility Visits – In order to understand the interaction of parasite life cycles with livestock production, students will be taken to livestock production facilities to discover which type of facilities and feeding systems may have an impact on parasite infections. Additionally, students will collect fecal samples from the site to determine the presence of common pathogens and parasites in an upcoming lab. Interviews on site with producers and handlers will provide insight as to how housing and facilities will impact diseases and parasites, thereby dictating the management plans on their farms. Students will then develop a written or live recommendation to the producer regarding the management protocols and handling needs to mitigate the parasites or pathogens found a result of the experiments.

Survey – To foster professional contacts, students will complete a formal research survey (possibly using a Google Form Survey) which will require students to contact a variety of local facilities, producers, and veterinarians. Students will begin by engaging in secondary research to investigate major livestock conditions, diseases and parasites, with focus on the inherent biological and chemical conditions that precede or enhance the condition. Students will then use this background knowledge to develop the questions in order to examine the professional's role in diagnosing and resolving infections or conditions that may occur frequently in the local community. Students will synthesize and analyze their data to determine best practices gleaned from the survey responses.Students will select a research topic related to the results of their survey. Students will include the final results of this survey in their parasite management plan along with their research.

Technical Reading and Research – Taking direction from the results of their survey, students will analyze journal research and published studies and merge their survey data to create an infographic to be included in their final parasite management plan. An example of a topic could include; the use of crossbreeding in livestock to help a livestock

producer achieve greater natural resistance to some parasites, the natural selection and parasite resistance to medicines or specific veterinary applications of remedies.

Lab Experiment 1 – Fecal Egg Counts-Practice

Providing practical, agriscience research skills, students will use the Modified McMaster's Fecal Egg Counting Protocol to perform a fecal egg count on livestock. In this pathogen experimentation, the fecal egg counts will be compared to demonstrate how management affects internal parasite populations in livestock. Students will incorporate the scientific skills learned in the first unit in this laboratory experiment. A hypothesis will be constructed to predict the outcome of the research. A McMaster's fecal egg counting slide will allow students to quantify parasite infection through the egg counting and recording process. Students will produce a formal lab report and conclusion document which includes some suggested topics for further experimentation. These suggested topics will inform the selection of the Experimental Design Topic.

Lab Experiment 2 – Experimental Design

Using their experiences from the first experiment, students will design and conduct a related experiment in which they investigate a parasite topic of their choice related to the final capstone project.

Identifying Components to HACCP

Students will create a visual display that identifies the seven principles of a HACCP plan, which is a systematic approach to the identification, evaluation, and control of food safety hazards based on the following seven principles: Principle 1: Conduct a hazard analysis, Principle 2: Determine the critical control points (CCPs), Principle 3: Establish critical limits. Principle 4: Establish monitoring procedures, Principle 5: Establish corrective actions, Principle 6: Establish verification procedures, and Principle 7: Establish record-keeping and documentation procedures. Consequently each of these principles will be researched and applied through experimentation throughout the unit, to create a comprehensive food safety plan for the food product students design for their final unit project.

Swabbing Hazards

After learning basic HAACP procedures, students will visit a commercial food production facility (school cafeteria, restaurant, processing site) and conduct a hazard analysis (as a basis for learning to investigate Principle 1 & 5 of a HACCP plan), swab samples of various surfaces (including but not limited to hands, door handles, tables, cutting surfaces, food preparation tools), and prepare and grow culture plates. After a period of growth, students will determine if potential disease-causing agents are present, and if so, identify the specific pathogen. Students will record their findings in a written report. As a

result students will determine the critical control points for that location (Principle 2 of the HACCP plan) based on the data generated from the swabs. Students will apply this skill in the development of their product and food safety plan.

Chemical Properties in Preservation

Given the top 5 seasonally available commodities in a growing region, as well as common ingredients (granulated sugar, lemon, etc.) for preservation of those commodities, students will determine chemical properties of those commodities through their prior knowledge of pH, brix and water content. They will collect and record their data in a chart they design. Students will study the effects of pH on cut apple preservation (as a basis for learning to investigate Principle 3 & 4 of a HACCP plan). Each group will make a selection of a test solution based on scientific research. Students will gather data on bacterial colony counts that develop on swabs they take of samples from the cut apples. As a result groups will report to the class their findings and groups will evaluate the data. Groups will also brainstorm and determine other possible critical control limits for the sliced apple product. Students can employ several different possible methods of reporting their findings. (examples of reports include: oral presentation, visual aide, lab write up, etc)

Implementing Procedures and Practices

Students will begin by reviewing a locally obtained HACCP plan (as a basis for learning to investigate Principle 6 of a HACCP plan). From the plan students will annotate and 1) identify areas of critical control 2) identify scientific evidence used as expert advice to validate HACCP protocols 3) identify specific procedures and practices to implement protocol in the plant. Student findings will be recorded using a graphic organizer that will be included in their final food safety plan (examples include: Three Circle Venn Diagram, Comparison Chart, Cause and Effect, Factors in the Cause or Sorting Organizer). Upon gathering that information, students will conduct a primary research investigation to test the HAACP principles in a controlled environment using radiation and chemical methods. Though much of the scientific research they will have read shows that appropriate temperature and time kills microorganisms, there is also a significant body of evidence that dramatic pH alterations can inhibit microorganism growth. As such, students will conduct a second research protocol within the HAACP protocol that contrasts the radiation and chemical methods of microorganism prevention in order to determine the relative efficacy of each method. Students will combine their graphic organizer with their research conclusion and present their findings in a lab report, which will also be added to their final food safety plan.

Food Labeling

Students will wrap up their unit by developing an infographic that highlights food allergens and their role in food labeling. Students will research to prepare the infographic, which will include symptoms, major food allergens, treatment/when to seek treatment, the

relationship of livestock antibiotic withdrawal periods and what must be included in origin labeling. An analysis of several different allergen-causing foods should occur, with investigations conducted regarding the elemental makeup of each food and the chemical reactions that cause the allergic reaction, specifically drawing a relationship between the interactions of the chemical world and the microbiology of the human body. The final infographic should showcase their findings using technical nomenclature, pictures, and supporting statistics.

Food Safety Product and Plan

The final project for the unit will ask student to develop a physical food product such as a fruit jam, dried vegetable product, oil, herb or seasoning mix, citrus juice, etc. and create a comprehensive food safety plan for the product that includes the HAACP and labeling standards. Students will choose a commodity from their growing region and utilizing food safety principles preserve it following scientifically proven preservation methods. Students will also engage in industry-standard testing protocols to assess the chemical profile of the food product (pH level, potential toxicity, etc.) as well as engage in a multi-interval microorganism testing protocol. Students will follow FDA guidelines and use prior unit knowledge to develop an appropriate label for their food that follows legal standards as well as agricultural marketing practices. They will prepare a written and 3-5 minute visual presentation (students will choose the media) for a panel of industry professionals.

Agriscience Research Paper and Display

Throughout all units, students will gather knowledge through laboratory exercises to further develop and enhance their Agriscience Research programs. At the conclusion of the course, students will submit their research in a written paper, and it will include the following components: problem/purpose, background research, hypothesis, methodology, results/data, and discussion/ conclusion. The paper will be written using skills associated with technical and scientific writing, for example, refraining from the use of personal pronouns or keeping discussion limited to what the research and data suggest rather than personal opinion and bias. APA format will be utilized to reference and cite sources. Students will create a visual display board, using a digital format that mirrors the use of research posters in higher education, which will also include all of the components of the paper, but in a condensed form. The peer group that reviewed the original experimental design will review the final research paper. The project and its findings will be shared with the class in an oral presentation, with the research board on display to aid in communicating the results of the research.

Instructional Methods and/or Strategies (REQUIRED):

Please list specific instructional methods that will be use.

Assessment Methods and/or Tools (REQUIRED):
Please list different methods of assessments that will be used.
Written Exams Online, Quizzes Written and verbal assessment on public speaking assignments

COURSE PACING GUIDE AND OBJECTIVES (REQUIRED)				
	Semester 1			
Week 1	Week 1	August 10-August 12	Introduction	Table Tents, Farm Tour, Ag Knowledge
Week 2	Week 2	August 15-August 19	Notebook Set	Syllabus, Notebook, Costa's
Week 3	Week 3	August 22-August 26	SAE	SAE Proposal & Convo's
Week 4	Week 4	August 29-September 2	CDE's	Pre-test
Week 5	Week 5	September 6-September 9	CDE's	Vegetable, OH, Floral
Week 6	Week 6	September 12-September	CDE's	Vet, Natural Resources, Land
Week 7	Week 7	September 19-September	FFA	OC, FFA Organization
Week 8	Week 8	September 26-September	Fair Prep	Farm
Week 9	Week 9	October 3-October 7	FFA	Fair Week FFA Assignments
Week 1	Week 10	October 10-October 14	FFA	Emblem, Dress, Degrees, Creed
Week 1	Week 11	October 17-October 21	FFA	
Week 1	Week 12	October 24-October 28	iRecordbook	Timeline, Opportunities, Test
Week 1	Week 13	October 31-November 4	Agriculture	
Week 1	Week 14	November 7-November 10	Agriculture	Ag in Society, Developments in Ag
Week 1	Week 15	November 14- November	Agriculture	
Week 1	Week 16	November 28-December 2	Agriculture	CA Ag Commodities
Week 1	Week 17	December 5- December 9	Intntll Ag	CA Ag Production Regions. Riverside
Week 1	Week 18	December 12- December 1	Intntll Ag	Test
				World Hunger & Brochure
				Brochure & Postcard
	Semester 2			
Week 1	Week 1	January 9-January 13	SAE & AET	Model
Week 2	Week 2	January 17-January 20	Plant Cells	Planting

Week 3	Week 3	January 23-January 27	Asexual/Sexual	Dissection
Week 4	Week 4	January 30- February 3	Flowers	Leaf Color
Week 5	Week 5	February 6-February 10	Leafs	
Week 6	Week 6	February 13- February 17	Fair Prep	
Week 7	Week 7	February 27-March 3	Roots & Stems	Soil Profiles
Week 8	Week 8	March 6-March 9	Soil & Plant Te	Model
Week 9	Week 9	March 13-March 17	Animal Cells	
Week 1	Week 10	March 20-March 24	Swine	Playdough Model
Week 1	Week 11	March 27-March 31	Ruminants	
Week 1	Week 12	April 3- April 7	Cattle Breeds	
Week 1	Week 13	April 18-April 21	Sheep & Goats	
Week 1	Week 14	April 24-April 28	Horses	Showmanship
Week 1	Week 15	May 1- May 5	Rabbits	
Week 1	Week 16	May 8-May 12	Poultry	
Week 1	Week 17	May 15-May 19	Aquaculture	
Week 1	Week 18	May 22-May 25	Animal Science	
Week 1	Week 19	May June 2	Ag Careers	
Week 2	Week 20	June 5-June 8	Temple Grandi	

C. HONORS COURSES ONLY
Indicate how much this honors course is different from the standard course.
N/A

D. BACKGROUND INFORMATION
Context for course (optional)
N/A
History of Course Development (optional)