De Anza College
Change Report
08/01/2024

Summary of Changes

Section	Changed field
General Information	Faculty Initiator
General Information	Effective Term
General Information	Course Type (CB27)
General Information	Mode of Delivery
Faculty Requirements	Discipline 1
Faculty Requirements	FSA
Transferability & Gen. Ed. Options	GE Information
Specifications	Methods of Instruction
Specifications	Methods of Evaluation
Specifications	Essential Student Materials/Essential College Facilities
Specifications	Examples of Primary Texts and References
Specifications	Suggested Reading List
Learning Outcomes and Objectives	CSLOs
Curriculum Office	Banner Start Term (202122)
Curriculum Office	Banner Division
Curriculum Office	Catalog Term (21-22)
Curriculum Office	5 Year Revision Year (2021)
Curriculum Office	Effective Quarter
Curriculum Office	Effective Year (2021)
Curriculum Office	Course Status Code

Section	Changed field
Curriculum Office	Banner Department
Curriculum Office	Course Level
Curriculum Office	College Code
Curriculum Office	CTE Status
Curriculum Office	Emergency Approval
Curriculum Office	Repeat Status (N = Not Repeatable; T = Repeatable for Max Times Only; B = Repeatable for Max Times/Units; U = Repeatable for Max Units Only; Y = Yearly Repeatable Restriction)
Curriculum Office	Repeat Type (N = Non-repeatable Credit; A = Activity/Other Repeatable; F = Family Non-repeatable Credit; G = Family Activity/Other Repeatable; L = Legally Mandated Training)
Curriculum Office	Noncredit Enhanced Funding Indicator
Curriculum Office	In Service Indicator
Curriculum Office	Sports/Physical Education Course Indicator
Curriculum Office	COA Code
Curriculum Office	Fund Code
Curriculum Office	Organization Code
Curriculum Office	Account Code
Curriculum Office	Program Code
Curriculum Office	Percent
Curriculum Office	Print/No Print to Catalog
Summary of Revisions	Outline
B-Matrix Form	Objective 1: Analyze a variety of college-level texts with a focus predominantly on expository and argumentative writing.
B-Matrix Form	Objective 2: Develop analytical ideas and topics for essays.

Section	Changed field
B-Matrix Form	Objective 3: Compose and support thesis statements for analytical essays.
B-Matrix Form	Objective 5: Identify and practice writing for different audiences and purposes.
B-Matrix Form	Objective 8: Practice composing organized, developed, analytical essays that increase in complexity.
B-Matrix Form	Objective 9: Demonstrate appropriate grammar usage and mechanics.
F-Matrix Form	Objective 1: Develop, throughout the course as applicable, systematic problem solving methods.
F-Matrix Form	Objective 2: Solve problems involving arithmetic operations, including fractions, percents and decimals.
F-Matrix Form	Objective 3: Apply the order of operations to evaluate signed numerical expressions.
F-Matrix Form	Objective 4: Solve problems involving operations with signed numbers.
F-Matrix Form	Objective 5: Explore the characteristics and properties of real numbers.
F-Matrix Form	Objective 6: Use estimation to determine approximate solutions and to check the reasonableness of answers.
F-Matrix Form	Objective 7: Explore rates and ratios and use proportions to solve problems.
F-Matrix Form	Objective 8: Explore, as applicable throughout the course, the geometry of mathematical measurements and solve problems involving geometric figures and formulas.
F-Matrix Form	Objective 9: Explore the use of variables in expressions and evaluate algebraic expressions.
F-Matrix Form	Objective 10: Solve linear equations in one variable numerically and algebraically.
F-Matrix Form	Objective 11: Graph linear relationships on a Cartesian coordinate by plotting ordered pairs.

Section	Changed field
F-Matrix Form	Objective 12: Investigate, throughout the course as applicable, how mathematics has developed as a human activity around the world.
De Anza GE Form	Criteria 1: Present core concepts and scope that define the discipline. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
De Anza GE Form	Criteria 2: Foster oral and written communication and collaborative exercises. Note that this criteria has three separate pieces: oral communication, written communication, and collaborative exercises. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
De Anza GE Form	Criteria 3: Stimulate critical thinking. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
De Anza GE Form	Criteria 4: Include diverse perspectives and contributions in the discipline such as: gender, culture, values, and/or societal perspectives. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
De Anza GE Form	Criteria 5: Provide global and historical context. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
De Anza GE Form	Criteria 6: Use real-world or hands-on applications that will provide a context for the concepts being discussed. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
Comments	Stage 8: AVP - Instruction
Course Justification	Course Justification
Course Philosophy	Course Philosophy
Foothill Equivalency	Foothill Faculty Consultation Name
Foothill Equivalency	Foothill Course ID

Section	Changed field
Foothill Equivalency	Does the course have a Foothill equivalent?
CTE Course	Is this a CTE (Career Technical Education) course?
Honors/Non-honors Course	Is this an honors/non-honors course?
Mirrored Credit/Noncredit Course	Is this a mirrored credit/noncredit course?
Cross-listed Course	Is this a cross-listed course?

General Information

Changed	Field	Current Version	Proposed Version
❗	Faculty Initiator	• Bob Kalpin	• Caitlin Kepple • Cichanski, Marek
	Course ID (CB01A and CB01B)	ASTRD015L	ASTRD015L
	Course Control Number	CCC000534918	CCC000534918
	Course Title (CB02)	Astronomy Laboratory	Astronomy Laboratory
	Short Course Title	ASTRONOMY LAB	ASTRONOMY LAB
	TOP Code (CB03)	1911.00	1911.00 Astronomy
	CIP Code	Astronomy	40.0201 Astronomy
	Department	ASTR - Astronomy	ASTR - Astronomy
❗	Effective Term	Fall 2023	Fall ~~2023~~ 2025
	SAM Priority Code (CB09)	Non-Occupational	Non-Occupational

Changed	Field	Current Version	Proposed Version
	Course Description	Introductory astronomy lab in which students use astronomical techniques, data, and software to evaluate hypotheses about the physical universe. Areas of investigation include our solar system and the extrasolar planets, as well as stars, galaxies, and the evolution of the universe.	Introductory astronomy lab in which students use astronomical techniques, data, and software to evaluate hypotheses about the physical universe. Areas of investigation include our solar system and the extrasolar planets, as well as stars, galaxies, and the evolution of the universe.
❗	Course Type (CB27)	No value	• Lower Division
❗	Mode of Delivery	• NA	• Online

Faculty Requirements

Changed	Field	Current Version	Proposed Version
❗	Discipline 1	No value	• Astronomy
	Discipline 2	No value	No value
	Discipline 3	No value	No value
❗	FSA	No value	• Astronomy

Formerly Statement

Changed	Field	Current Version	Proposed Version
	Formerly Statement	No value	

Course Justification

Changed	Field	Current Version	Proposed Version
	Course Justification	This course meets a general education requirement for De Anza, CSUGE and IGETC. This course is transferable to CSU and UC. In this course, students learn about the methods of science by using those methods in an astronomical context.	This course meets a general education requirement for De Anza, CSUGE and ~~IGETC.~~ CALGETC. This course is transferable to CSU and UC. In this course, students learn about the methods of science by using those methods in an astronomical context.

Stand-Alone Statement

Changed	Field	Current Version	Proposed Version
	Stand-Alone Statement	No value	

Course Philosophy

Changed	Field	Current Version	Proposed Version
	Course Philosophy	Note on Mathematics: The goal of this course is for students to grasp and make use of the broad relationships between quantities, for the purpose of forming and evaluating hypotheses about the universe. To this end, basic mathematical concepts will be introduced and reviewed where necessary. Additionally, a variety of tools will obviate the need for students to perform higher-math operations as the students evaluate quantitative relationships. Such tools will include software to allow students to manipulate one quantity, and see how that affects another quantity, with the complex calculations being done `under the hood' by the software.	Note on Mathematics: The goal of this course is for students to grasp and make use of the broad relationships between quantities, for the purpose of forming and evaluating hypotheses about the universe. To this end, basic mathematical concepts will be introduced and reviewed where necessary. Additionally, a variety of tools will obviate the need for students to perform higher-math operations as the students evaluate quantitative relationships. Such tools will include software to allow students to manipulate one quantity, and see how that affects another quantity, with the complex calculations being done ~~`under~~ "under the ~~hood'~~ hood" by the software.

Foothill Equivalency

Changed	Field	Current Version	Proposed Version
	Foothill Faculty Consultation Name	No value	Geoff Mathews
	Foothill Course ID	No value	ASTR 10L
❗	**Does the course have a Foothill equivalent?**	No	~~No~~ Yes

CTE Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a CTE (Career Technical Education) course?**	No value	No

Honors/Non-honors Course

Changed	Field	Current Version	Proposed Version
❗	**Is this an honors/non-honors course?**	No value	No

Mirrored Credit/Noncredit Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a mirrored credit/noncredit course?**	No value	<u>No</u>

Cross-listed Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a cross-listed course?**	No value	<u>No</u>

More Options

Changed	Field	Current Version	Proposed Version
	Basic Skill Status (CB08)	Course is not a basic skills course.	Course is not a basic skills course.
	Course Prior To College Level	Not applicable.	Not applicable.
	Course Special Class Status (CB13)	Course is not a special class.	Course is not a special class.
	Course Support Status (CB26)	Course is not a support course	Course is not a support course
	Repeat Limit	0	0
	Grade Options	• Letter Grade • Pass/No Pass	• Letter Grade • Pass/No Pass
	Allow Students to Gain Credit by Exam/Challenge	☐	☐
	Repeatability Statement	No value	

Associated Programs

Changed	Field	Current Version	Proposed Version

Course is part of a program

Associated Program	CSU GE
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	CSU GE
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	CSU GE
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	CSU GE
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	CSU GE
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	CSU GE
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	IGETC
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	IGETC
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	IGETC
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	IGETC
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	IGETC
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	IGETC
Award Type	Certificate of Achievement-Advanced (COA-A)

Transferability & Gen. Ed. Options

Changed	Field	Current Version	Proposed Version
	Transfer Status (CB05)	Transferable to both UC and CSU	Transferable to both UC and CSU
	Course General Education Status (CB25)	Y	Y
	Transfer Status	Approved	Approved

Changed	Field	Current Version	Proposed Version
❗	**GE Information**		

System/Institution	De Anza GE
Area(s)	• 2GBX - Approved.
-	This is a stand-alone lab course that must be completed with or after the corresponding lecture course for GE credit.

System/Institution	De Anza GE
Area(s)	• 2GBX - Approved.
-	This is a stand-alone lab course that must be completed with or after the corresponding lecture course for GE credit.

System/Institution	IGETC
Area(s)	• IG5C - Approved.
-	No value

System/Institution	Cal-GETC
Area(s)	• CA5C - Approved.
-	No value

System/Institution	CSU GE
Area(s)	• CGB3 - Approved.
-	No value

Weekly Student Hours - Profile Name: Default Profile

Changed	Field	Current Version	Proposed Version
	Lecture Hours - In Class	0	0
	Lecture Hours - Out of Class	0	0

Changed	Field	Current Version	Proposed Version
	Laboratory Hours - In Class	3	3
	Laboratory Hours - Out of Class	0	0
	NA Hours - In Class	0	0
	NA Hours - Out of Class	0	0

Course Student Hours - Profile Name: Default Profile

Changed	Field	Current Version	Proposed Version
	Course Duration (Weeks)	12	12
	Hours per unit divisor	36	36
	Total Student Learning Hours	36	36
	Lecture Hours - Course In-Class (Contact) per Term	0	0
	Lecture Hours - Course Out-of-Class per Term	0	0
	Laboratory Hours - Course In-Class (Contact) per Term	36	36

Changed	Field	Current Version	Proposed Version
	Laboratory Hours - Course Out-of-Class per Term	0	0
	NA Hours - Course In-Class (Contact) per Term	0	0
	NA Hours - Course Out-of-Class per Term	0	0
	Total - Course In-Class (Contact) Hours	36	36
	Total - Course Out-of-Class Hours	0	0
	Total Credit Units - Minimum Credit Units	1	1
	Total Credit Units - Maximum Credit Units	1	1

Speciality Hours

Changed	Field	Current Version	Proposed Version
	Speciality Hours	No value	No value

Credit / Non-Credit Options

Changed	Field	Current Version	Proposed Version
	COURSE CLASSIFICATION STATUS	Credit Course.	Credit Course.
	Course Credit Status (CB04)	Credit - Degree Applicable	Credit - Degree Applicable
	Course Non Credit Category (CB22)	Credit Course.	Credit Course.
	Funding Agency Category (CB23)	Not Applicable.	Not Applicable.
	Cooperative Work Experience Education Status (CB10)	☐	☐
	Variable Credit Course	☐	☐

Credit Units

Changed	Field	Current Version	Proposed Version
	Course Duration (Weeks)	12	12
	Total Lecture Hours per Term	-	0
	Total Laboratory Hours per Term	36	36
	Total Contact Hours per Term	-	0
	Total Credit Units	1	1

Changed	Field	Current Version	Proposed Version
	Minimum Credit Units	1	1
	Maximum Credit Units	1	1

SKIP

Changed	Field	Current Version	Proposed Version
	SKIP	No Value	No Value

Specifications

Changed	Field	Current Version	Proposed Version
❗	**Methods of Instruction**	**Methods of Instruction**	**Methods of Instruction** Methods of Instruction
		Methods of Instruction Examination of visual aids In-class exploration of Internet sites Collaborative learning and small group exercises Discussion and problem solving performed in class Collaborative projects Laboratory discussion sessions and quizzes that evaluate laboratory exercises from previous weeks Quiz and examination review performed in class	**Methods of Instruction** Examination of visual aids In-class exploration of Internet sites Collaborative learning and small group exercises Discussion and problem solving performed in class Collaborative projects Laboratory discussion sessions and quizzes that evaluate laboratory exercises from previous weeks Quiz and examination review performed in class

Changed	Field	Current Version	Proposed Version

	Assignments	1. Required readings from the Laboratory Manual, which introduce concepts to be covered in the next laboratory exercise.
		2. Analysis and discussion of astronomical data, to develop critical thinking skills by testing hypotheses about the physical universe.
		3. Quantitative, analytical work products from lab exercises. Some examples:
		  1. Diagrams showing models of the solar system that students develop through examination and critical discussion of the apparent motions of the planets in the sky.
		  2. Diagrams, images, and physical models of simple telescopes, to evaluate the advantages and disadvantages of different telescope types.
		  3. Computer-processed images of astronomical objects, in which the collaboratively-made choices of processing methods are used to evaluate the composition, history, distance, etc. of the object(s) being studied.
			1. Required readings from the Laboratory Manual, which introduce concepts to be covered in the next laboratory exercise.
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Changed	Field	Current Version	Proposed Version
❗	Methods of Evaluation	**Methods of Evaluation**	**Methods of Evaluation** Methods of Evaluation

Changed	Field	Current Version		Proposed Version	
	Methods of Evaluation	1. Lab quizzes and final exam that appraise comprehension and require analysis, synthesis, and application of course material. 2. Participation in small-group and class discussions and analyses of astronomical data, so as to demonstrate an increasing ability to evaluate hypotheses about the nature and history of the physical universe. 3. Work products from laboratory exercises demonstrate proficiency in standard astronomical data-analysis techniques, as well as critical thinking regarding the choice of analytical methods.		**Methods of Evaluation**	1. Lab quizzes and final exam that appraise comprehension and require analysis, synthesis, and application of course material. 2. Participation in small-group and class discussions and analyses of astronomical data, so as to demonstrate an increasing ability to evaluate hypotheses about the nature and history of the physical universe. 3. Work products from laboratory exercises demonstrate proficiency in standard astronomical data-analysis techniques, as well as critical thinking regarding the choice of analytical methods.

Changed	Field	Current Version	Proposed Version
❗	**Essential Student Materials/Essential College Facilities**	**Essential Student Materials:** • None. **Essential College Facilities:** • Classroom with sufficient desktop space for laying out star charts, printed images, and laptop computers • Printer for printing new star charts, images, student-produced images, and ink and paper for the printer (we have this as of Fall 2017) • Simple hand-held spectroscopes for looking at glowing objects like lamps and sunlit surfaces (we have these spectroscopes as of Fall 2017) • Laptop computers with the necessary software for simulating astronomical processes and for processing astronomical image data (we have these computers and software as of Fall 2017)	**Essential Student Materials:** • None **Essential College Facilities:** • Classroom with sufficient desktop space for laying out star charts, printed images, and laptop computers • Printer for printing new star charts, images, student-produced images, and ink and paper for the printer (we have this as of Winter 2024) • Simple hand-held spectroscopes for looking at glowing objects like lamps and sunlit surfaces (we have these spectroscopes as of Winter 2024) • Laptop computers with the necessary software for simulating astronomical processes and for processing astronomical image data (we have these computers and software as of Winter 2024) • Access to campus Planetarium facilities for viewing a three dimensional view of the night sky during the laboratory classroom time

Changed	Field	Current Version		Proposed Version
❗	**Examples of Primary Texts and References**			No value
		Title	No value	
		Author	Astronomy 15L Laboratory Manual, to be written by De Anza Astronomy faculty and made available either as a website or as a printed manual through the De Anza bookstore.	
		Publisher	No value	
		Date/Edition	No value	
		ISBN	No value	
❗	**Suggested Reading List**			No value
		Reading List	Astronomy 4 and 10 Lecture textbook: Astronomy, by Andrew Fraknoi, David Morrison, Sidney Wolff, and contributors, OpenStax.org, 2016.	
		May include, but are not limited to	No value	

Learning Outcomes and Objectives

Changed	Field	Current Version	Proposed Version
	Course Objectives	- Describe the daily and seasonal apparent motions of the Sun and other celestial objects, using daytime observations of the Sun's motion, along with maps and software simulations of the sky. Use these descriptions to predict the future positions of objects in the sky, and to derive a model of the Earth's motion. - Distinguish between different types of astronomical objects by measuring their positions and designations on star charts, and by using publicly-available imagery from research observatories and the Hubble Space Telescope. Compare and contrast the different types of objects to assess their relative sizes, ages, and formation histories. - Develop a predictive model for the appearance of the Moon's phases, using images of the Moon as seen from Earth, along with software tools for simulating its orbit and phases. Relate the Moon's phase to its rising and setting times, and to its apparent motion across the sky. - Predict the positions and speeds of planets in their orbits using Kepler's laws of planetary motion. Formulate hypothetical pathways for spacecraft traveling between planets, to assess the most feasible and practical times for launching probes to planetary bodies. - Formulate interpretive histories of the atmospheres of planetary bodies in our solar system, based on data about their current atmospheric compositions and their gravitational strengths. Using	- Describe the daily and seasonal apparent motions of the Sun and other celestial objects, using daytime observations of the Sun's motion, along with maps and software simulations of the sky. Use these descriptions to predict the future positions of objects in the sky, and to derive a model of the Earth's motion. - Distinguish between different types of astronomical objects by measuring their positions and designations on star charts, and by using publicly-available imagery from research observatories and the Hubble Space Telescope. Compare and contrast the different types of objects to assess their relative sizes, ages, and formation histories. - Develop a predictive model for the appearance of the Moon's phases, using images of the Moon as seen from Earth, along with software tools for simulating its orbit and phases. Relate the Moon's phase to its rising and setting times, and to its apparent motion across the sky. - Predict the positions and speeds of planets in their orbits using Kepler's laws of planetary motion. Formulate hypothetical pathways for spacecraft traveling between planets, to assess the most feasible and practical times for launching probes to planetary bodies. - Formulate interpretive histories of the atmospheres of planetary bodies in our solar system, based on data about their current atmospheric compositions and their gravitational strengths. Using

Changed	Field	Current Version	Proposed Version
		simulations, develop hypotheses for the past and future compositions of planetary atmospheres. • Process astronomical image data, such as that collected by the Astronomy Department, by research observatories, or by the Hubble Space Telescope, to produce calibrated astronomical images that can be used to make measurements and assess hypotheses about the nature of astronomical objects. • Assess the effects of star temperature on a stars brightness and color, and use published data on star colors to formulate a system for deriving stellar temperatures from their brightnesses as seen through different-colored filters. • Relate the temperatures and colors of stars to their intrinsic brightnesses, to develop a Hertzsprung-Russell diagram on which changes in stellar parameters can be studied during the stars' lifetimes. Use the diagram and the positions of known stars on it to make predictions about the stellar population in the Sun's region of the Galaxy. • Assess the likelihood that planets exist around other stars, using real and simulated data from spectroscopic and photometric studies of candidate stars. • Apply the principle of parallax to derive the distances to planets and stars, as the first step in constructing a cosmic distance ladder. Formulate methods for determining the distances to astronomical objects using the concept of a `standard candle'	simulations, develop hypotheses for the past and future compositions of planetary atmospheres. • Process astronomical image data, such as that collected by the Astronomy Department, by research observatories, or by the Hubble Space Telescope, to produce calibrated astronomical images that can be used to make measurements and assess hypotheses about the nature of astronomical objects. • Assess the effects of star temperature on a stars brightness and color, and use published data on star colors to formulate a system for deriving stellar temperatures from their brightnesses as seen through different-colored filters. • Relate the temperatures and colors of stars to their intrinsic brightnesses, to develop a Hertzsprung-Russell diagram on which changes in stellar parameters can be studied during the stars' lifetimes. Use the diagram and the positions of known stars on it to make predictions about the stellar population in the Sun's region of the Galaxy. • Assess the likelihood that planets exist around other stars, using real and simulated data from spectroscopic and photometric studies of candidate stars. • Apply the principle of parallax to derive the distances to planets and stars, as the first step in constructing a cosmic distance ladder. Formulate methods for determining the distances to astronomical objects using the concept of a `standard candle'

Changed	Field	Current Version	Proposed Version

or a `standard ruler'. Relate these distances to the measured redshifts of galaxies, to formulate a basic model for the expanding universe.

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❗ CSLOs

CSLOs	Evaluate claims about the nature of the physical universe using the scientific method of hypothesis testing.
Expected SLO Performance	0.0

CSLOs	Evaluate claims about the nature of the physical universe using the scientific method of hypothesis testing.
Expected SLO Performance	0.0

CSLOs	Compare and contrast the histories of solar-system bodies (e.g. moons, planets, asteroids, comets, meteorites) by integrating data from spacecraft and Earth-based observatories.
Expected SLO Performance	0.0

CSLOs	Compare and contrast the histories and characteristics of astronomical (e.g., solar system and stellar) phenomena by integrating data from spacecraft and Earth-based observatories.
Expected SLO Performance	0.0

Course Outline

Changed	Field	Current Version	Proposed Version

	Course Content	1. Describe the daily and seasonal apparent motions of the Sun and other celestial objects, using daytime observations of the Sun's motion, along with maps and software simulations of the sky. Use these descriptions to predict the future positions of objects in the sky, and to derive a model of the Earth's motion.
		
		    1. Recognize and describe the apparent diurnal motion of the sky, by observing the Sun's motion during class, or by using software simulations on cloudy days.
		    2. Construct maps of the ground and sky, to compare and contrast the use of directions on ground maps and sky maps.
		    3. Simulate the sky at different times of night and different seasons of the year, to predict how the sky will appear to move, and use these predictions to compare ancient and modern models of the Earth's motion.
		
		2. Distinguish between different types of astronomical objects by measuring their positions and designations on star charts, and by using publicly-available imagery from research observatories and the Hubble Space Telescope. Compare and contrast the different types of objects to assess their relative sizes, ages, and formation histories.
			1. Describe the daily and seasonal apparent motions of the Sun and other celestial objects, using daytime observations of the Sun's motion, along with maps and software simulations of the sky. Use these descriptions to predict the future positions of objects in the sky, and to derive a model of the Earth's motion.
			
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			2. Distinguish between different types of astronomical objects by measuring their positions and designations on star charts, and by using publicly-available imagery from research observatories and the Hubble Space Telescope. Compare and contrast the different types of objects to assess their relative sizes, ages, and formation histories.

Changed	Field	Current Version	Proposed Version

		1. Use detailed star charts to measure the positions of celestial objects, and interpret symbols on the charts to determine the nature of each object in question.
		2. Obtain images of the objects in question, after assessing the quality and reliability of the online image sources.
		3. Compare and classify images of different object types in order to form hypotheses about how they form, and their genetic relationships to each other.
		3. Develop a predictive model for the appearance of the Moon's phases, using images of the Moon as seen from Earth, along with software tools for simulating its orbit and phases. Relate the Moon's phase to its rising and setting times, and to its apparent motion across the sky.
		  1. Compare images of the Moon as seen from the Earth at different times, to develop an ordering scheme that accurately represents the progression of Moon phases.
		  2. By making drawings and/or using software simulations, visualize the Earth-Moon-Sun system in three dimensions, predict the appearance of the Moon as seen from the Earth at different points in the Moon's orbit, and compare these
			1. Use detailed star charts to measure the positions of celestial objects, and interpret symbols on the charts to determine the nature of each object in question.
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			  1. Compare images of the Moon as seen from the Earth at different times, to develop an ordering scheme that accurately represents the progression of Moon phases.
			  2. By making drawings and/or using software simulations, visualize the Earth-Moon-Sun system in three dimensions, predict the appearance of the Moon as seen from the Earth at different points in the Moon's orbit, and compare these

predictions to the Moon's actual appearance.

3. Predict the rising, setting, and meridian-crossing times of the Moon during different Moon phases, by visualizing its orbital position (commonly using software simulations), and compare these predictions to the actual appearance of the Moon in the sky.

4. Predict the positions and speeds of planets in their orbits using Kepler's laws of planetary motion. Formulate hypothetical pathways for spacecraft traveling between planets, to assess the most feasible and practical times for launching probes to planetary bodies.

   1. Visualize the solar system as seen from above its plane, using software simulations, and compare the speeds, orbital distances, and orbital eccentricities of the solar system's planets.

   2. Formulate relationships between orbital quantities like distance and speed, using software tools that remove the need to perform calculations or solve equations, and assess the validity of these hypotheses through comparisons between planets.

   3. Simulate the paths taken by spacecraft between planets, to develop launch and landing scenarios for interplanetary missions,

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predictions to the Moon's actual appearance.

3. Predict the rising, setting, and meridian-crossing times of the Moon during different Moon phases, by visualizing its orbital position (commonly using software simulations), and compare these predictions to the actual appearance of the Moon in the sky.

4. Predict the positions and speeds of planets in their orbits using Kepler's laws of planetary motion. Formulate hypothetical pathways for spacecraft traveling between planets, to assess the most feasible and practical times for launching probes to planetary bodies.

   1. Visualize the solar system as seen from above its plane, using software simulations, and compare the speeds, orbital distances, and orbital eccentricities of the solar system's planets.

   2. Formulate relationships between orbital quantities like distance and speed, using software tools that remove the need to perform calculations or solve equations, and assess the validity of these hypotheses through comparisons between planets.

   3. Simulate the paths taken by spacecraft between planets, to develop launch and landing scenarios for interplanetary missions,

and use these results to assess the relative feasibilities of the scenarios.

5. Formulate interpretive histories of the atmospheres of planetary bodies in our solar system, based on data about their current atmospheric compositions and their gravitational strengths. Using simulations, develop hypotheses for the past and future compositions of planetary atmospheres.
    1. Using software tools that remove the need to perform complex calculations or to solve equations, determine and compare the escape speeds from the surfaces of various planetary bodies.
    2. Using software tools that remove the need to perform complex calculations or to solve equations, determine and compare the speeds of molecules in the atmospheres of planets in the solar system.
    3. Simulate the behaviors of planetary atmospheres by comparing rates of escape of various atmospheric gases, and use these simulations to develop plausible scenarios for how these atmospheres have changed through time, thus affecting planetary properties like potential habitability.
6. Process astronomical image data, such as that collected by

(Proposed Version column — identical text:)

and use these results to assess the relative feasibilities of the scenarios.

5. Formulate interpretive histories of the atmospheres of planetary bodies in our solar system, based on data about their current atmospheric compositions and their gravitational strengths. Using simulations, develop hypotheses for the past and future compositions of planetary atmospheres.
    1. Using software tools that remove the need to perform complex calculations or to solve equations, determine and compare the escape speeds from the surfaces of various planetary bodies.
    2. Using software tools that remove the need to perform complex calculations or to solve equations, determine and compare the speeds of molecules in the atmospheres of planets in the solar system.
    3. Simulate the behaviors of planetary atmospheres by comparing rates of escape of various atmospheric gases, and use these simulations to develop plausible scenarios for how these atmospheres have changed through time, thus affecting planetary properties like potential habitability.
6. Process astronomical image data, such as that collected by

the Astronomy Department, by research observatories, or by the Hubble Space Telescope, to produce calibrated astronomical images that can be used to make measurements and assess hypotheses about the nature of astronomical objects.

1. Compare visual representations of astronomical images with their numerical representations (i.e. compare pictures to grids of numbers), to formulate a relationship between numerical pixel value and local image brightness.
2. Examine and compare individual images in a set of astro-imaging data, to assess the sources of visual noise and the resultant measurement uncertainties, with the intent of devising strategies to minimize the effects that these sources have on a combined final image.
3. Using image-processing software, calibrate astronomical images and combine them to produce higher-quality final images, and assess the effects of this processing on astronomers' ability to measure and interpret the properties of the objects that were photographed.

7. Assess the effects of star temperature on a star's brightness and color, and use published data on star colors to formulate a system for deriving stellar temperatures from their

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the Astronomy Department, by research observatories, or by the Hubble Space Telescope, to produce calibrated astronomical images that can be used to make measurements and assess hypotheses about the nature of astronomical objects.

1. Compare visual representations of astronomical images with their numerical representations (i.e. compare pictures to grids of numbers), to formulate a relationship between numerical pixel value and local image brightness.
2. Examine and compare individual images in a set of astro-imaging data, to assess the sources of visual noise and the resultant measurement uncertainties, with the intent of devising strategies to minimize the effects that these sources have on a combined final image.
3. Using image-processing software, calibrate astronomical images and combine them to produce higher-quality final images, and assess the effects of this processing on astronomers' ability to measure and interpret the properties of the objects that were photographed.

7. Assess the effects of star temperature on a star's brightness and color, and use published data on star colors to formulate a system for deriving stellar temperatures from their

Changed	Field	Current Version	Proposed Version

		brightnesses as seen through different-colored filters.
		
		  1. Compare continuous spectra from incandescent objects (like lamps) to other types of spectra, using simple spectroscopes.
		  2. Using software simulations, assess the effect of increasing temperature on the intensity and shapes of continuous spectra, to develop a model of how hot objects (like stars) emit light of various colors.
		  3. Simulate the effects of different stellar temperatures on the brightnesses of stars as photographed through different-colored filters, to develop a `color index' classification system.
		  4. Compare the derived color-index system to the system of spectral classification developed by Annie Jump Cannon in the early 20th century, and assess the feasibility of both methods for measuring star temperatures.
		
		8. Relate the temperatures and colors of stars to their intrinsic brightnesses, to develop a Hertzsprung-Russell diagram on which changes in stellar parameters can be studied during the stars' lifetimes. Use the diagram and the positions of known stars on it to make predictions about the stellar population in the Sun's region of the Galaxy.
			brightnesses as seen through different-colored filters.
			
			  1. Compare continuous spectra from incandescent objects (like lamps) to other types of spectra, using simple spectroscopes.
			  2. Using software simulations, assess the effect of increasing temperature on the intensity and shapes of continuous spectra, to develop a model of how hot objects (like stars) emit light of various colors.
			  3. Simulate the effects of different stellar temperatures on the brightnesses of stars as photographed through different-colored filters, to develop a `color index' classification system.
			  4. Compare the derived color-index system to the system of spectral classification developed by Annie Jump Cannon in the early 20th century, and assess the feasibility of both methods for measuring star temperatures.
			
			8. Relate the temperatures and colors of stars to their intrinsic brightnesses, to develop a Hertzsprung-Russell diagram on which changes in stellar parameters can be studied during the stars' lifetimes. Use the diagram and the positions of known stars on it to make predictions about the stellar population in the Sun's region of the Galaxy.

Changed	Field	Current Version	Proposed Version

		1. Classify stars into different stellar populations by plotting them on a diagram of spectral type (or temperature or color) versus luminosity.
		2. Relate the positions of stars on the Hertzsprung-Russell diagram to their masses and sizes, and develop hypotheses about the relationship of stellar mass to the rate of energy generation and to their lifetimes.
		3. Predict the likelihood of being able to observe various stars from the Earth, given their position on the Hertzsprung-Russell diagram and the population of stars near the Sun.
		9. Assess the likelihood that planets exist around other stars, using real and simulated data from spectroscopic and photometric studies of candidate stars.
		    1. Relate the change in a star's observed wavelength (i.e. the Doppler shift of its light) to the star's velocity toward or away from the Earth, under the gravitational influence of an orbiting planet.
		    2. Compare real and simulated Doppler-shift data to predictions of stellar motion, and assess the likelihood of detecting planets in the face of the noise and uncertainty that
			1. Classify stars into different stellar populations by plotting them on a diagram of spectral type (or temperature or color) versus luminosity.
			2. Relate the positions of stars on the Hertzsprung-Russell diagram to their masses and sizes, and develop hypotheses about the relationship of stellar mass to the rate of energy generation and to their lifetimes.
			3. Predict the likelihood of being able to observe various stars from the Earth, given their position on the Hertzsprung-Russell diagram and the population of stars near the Sun.
			9. Assess the likelihood that planets exist around other stars, using real and simulated data from spectroscopic and photometric studies of candidate stars.
			    1. Relate the change in a star's observed wavelength (i.e. the Doppler shift of its light) to the star's velocity toward or away from the Earth, under the gravitational influence of an orbiting planet.
			    2. Compare real and simulated Doppler-shift data to predictions of stellar motion, and assess the likelihood of detecting planets in the face of the noise and uncertainty that

Changed	Field	Current Version	Proposed Version
		accompany real observations	accompany real observations
		3. Compare real and simulated stellar brightness measurements to predictions of a star's brightness when exoplanets pass in front of it, and assess the likelihood of detecting planets given the real-world constraints on `transit surveys' like these.	3. Compare real and simulated stellar brightness measurements to predictions of a star's brightness when exoplanets pass in front of it, and assess the likelihood of detecting planets given the real-world constraints on `transit surveys' like these.
		10. Apply the principle of parallax to derive the distances to planets and stars, as the first step in constructing a cosmic distance ladder. Formulate methods for determining the distances to astronomical objects using the concept of a `standard candle' or a `standard ruler'. Relate these distances to the measured redshifts of galaxies, to formulate a basic model for the expanding universe.	10. Apply the principle of parallax to derive the distances to planets and stars, as the first step in constructing a cosmic distance ladder. Formulate methods for determining the distances to astronomical objects using the concept of a `standard candle' or a `standard ruler'. Relate these distances to the measured redshifts of galaxies, to formulate a basic model for the expanding universe.
		1. Measure distances to real or simulated terrestrial objects by observing them from different positions, and develop an analogy between this operation and the measurement of stellar distances by parallax.	1. Measure distances to real or simulated terrestrial objects by observing them from different positions, and develop an analogy between this operation and the measurement of stellar distances by parallax.
		2. Use the period-luminosity relation for Cepheid variable stars, developed by Henrietta Leavitt in the early 20th century, to determine the distances to star clusters and galaxies.	2. Use the period-luminosity relation for Cepheid variable stars, developed by Henrietta Leavitt in the early 20th century, to determine the distances to star clusters and galaxies.
		3. Relate the redshifts of the spectra of galaxies to	3. Relate the redshifts of the spectra of galaxies to

Changed	Field	Current Version	Proposed Version
		their distances, to determine the expansion rate of the universe, and compare the resulting age of the universe to the calculated ages of objects in it.	their distances, to determine the expansion rate of the universe, and compare the resulting age of the universe to the calculated ages of objects in it.
	Lab Component in this Course	No	No
	Lab Outline	No value	No value

Req/Adv

Changed	Questions	Current Version	Proposed Version
	Prerequisite(s):	ASTR D004. or ASTR D010. (either course may be taken concurrently)	ASTR D004. or ASTR D010. (either course may be taken concurrently)
	Corequisite(s):	No Value	No Value
	Advisory(ies):	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. Pre-algebra or equivalent (or higher), or appropriate placement beyond pre-algebra	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. Pre-algebra or equivalent (or higher), or appropriate placement beyond pre-algebra
	Advisory(ies) - Other:	No Value	No Value
	Limitation(s) on Enrollment:	No Value	No Value
	Limitation(s) on Enrollment - Other:	No Value	No Value
	Entrance Skills(s):	No Value	No Value
	Entrance Skill(s) - Other:	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	General Course Statement(s):	(See general education pages for the requirements this course meets.)	(See general education pages for the requirements this course meets.)
	General Course Statement(s) - Other:	No Value	No Value

Curriculum Office

Changed	Questions	Current Version	Proposed Version
❗	Banner Start Term (202122)	202122	No Value
❗	Banner Division	2PS	No Value
❗	Catalog Term (21-22)	23-24	No Value
❗	5 Year Revision Year (2021)	2018	No Value
❗	Effective Quarter	Fall	No Value
❗	Effective Year (2021)	2023	No Value
	Sort ID (00 < 10; 0 < 100)	ASTR 015L	ASTR 015L
	Course Status	Non-substantial	Non-substantial
❗	Course Status Code	A	No Value
❗	Banner Department	ASTR	No Value
❗	Course Level	DU	No Value
❗	College Code	DA	No Value

Changed	Questions	Current Version	Proposed Version
	Course Characteristics	NA	NA
	Cross-Listed/Related Course Information	NA	NA
	Cross-Listed/Related Course ID's	No Value	No Value
❗	**CTE Status**	No	No Value
	DL Approval Date (MM/DD/YYYY)	No Value	No Value
	Hybrid Approval Date (MM/DD/YYYY)	No Value	No Value
❗	**Emergency Approval**	No	No Value
❗	**Repeat Status (N = Not Repeatable; T = Repeatable for Max Times Only; B = Repeatable for Max Times/Units; U = Repeatable for Max Units Only; Y = Yearly Repeatable Restriction)**	N	No Value

Changed	Questions	Current Version	Proposed Version
❗	**Repeat Type (N = Non-repeatable Credit; A = Activity/Other Repeatable; F = Family Non-repeatable Credit; G = Family Activity/Other Repeatable; L = Legally Mandated Training)**	N	No Value
❗	**Noncredit Enhanced Funding Indicator**	N	No Value
❗	**In Service Indicator**	N	No Value
❗	**Sports/Physical Education Course Indicator**	N	No Value
❗	**COA Code**	C	No Value
❗	**Fund Code**	114000	No Value
❗	**Organization Code**	235008	No Value
❗	**Account Code**	1320	No Value
❗	**Program Code**	191100	No Value
❗	**Percent**	100	No Value
	Curriculum Office Notes	• Requisite change appr. 1/17/23 (effect. F23).-cc	• Requisite change appr. 1/17/23 (effect. F23).-cc
❗	**Print/No Print to Catalog**	Yes	No Value
	Checklist	No Value	No Value

Summary of Revisions

Changed	Questions	Current Version	Proposed Version
	Basic Course Information	No Value	No Value
	Units and Hours	No Value	No Value
	Specifications	No Value	No Value
❗	**Outline**	No Value	SLO's update
	Other	No Value	No Value

Blue Form

Changed	Questions	Current Version	Proposed Version
	For changes to the units and hours tab; 1) Contact the Curriculum Office at curriculum@fhda.edu with the course information changes; and 2) address items 1-3 below. Please be aware that load factors and seat counts are assigned based on established, negotiated values.	No Value	No Value
	1. Is the unit(s) change required for articulation?	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	2. If the course is UC or CSU transferable, identify one UC or CSU campus with the same unit value requested and copy and paste the catalog description of the course.	No Value	No Value
	3. Identify the areas in the course outline of record that justify the unit(s) and/or hour(s) change.	No Value	No Value
	Office Use ONLY: For a REVISION, state the existing unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value
	Office Use ONLY: For a REVISION, state the new unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value
	Office Use ONLY: For NEW, state the unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value

A-Matrix Form

Changed	Questions	Current Version	Proposed Version
	EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Analyze college level texts and discourse that are culturally and rhetorically diverse.	No Value	No Value
	Objective 2: Compose essays drawn from personal experience and assigned texts.	No Value	No Value
	Objective 3: Utilize MLA guidelines to format essays, cite sources, and compile a works cited page.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 4: Create syntactically varied sentences that are free of mechanical errors.	No Value	No Value
	Objective 5: Distinguish, compare, and evaluate the multiplicity and ambiguity of perspectives.	No Value	No Value

B-Matrix Form

Changed	Questions	Current Version	Proposed Version
	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
❗	**Objective 1: Analyze a variety of college-level texts with a focus predominantly on expository and argumentative writing.**	No Value	Required readings from the Laboratory Manual, which introduce concepts to be covered in the next laboratory exercise.

Changed	Questions	Current Version	Proposed Version
❗	**Objective 2: Develop analytical ideas and topics for essays.**	No Value	E: Formulate interpretive histories of the atmospheres of planetary bodies in our solar system, based on data about their current atmospheric compositions and their gravitational strengths. Using simulations, develop hypotheses for the past and future compositions of planetary atmospheres
❗	**Objective 3: Compose and support thesis statements for analytical essays.**	No Value	A: Describe the daily and seasonal apparent motions of the Sun and other celestial objects, using daytime observations of the Sun's motion, along with maps and software simulations of the sky. Use these descriptions to predict the future positions of objects in the sky, and to derive a model of the Earth's motion.
	Objective 4: Develop clear sequential relationship between central argument/controlling idea and supporting ideas in writing.	No Value	No Value
❗	**Objective 5: Identify and practice writing for different audiences and purposes.**	No Value	A: Describe the daily and seasonal apparent motions of the Sun and other celestial objects, using daytime observations of the Sun's motion, along with maps and software simulations of the sky. Use these descriptions to predict the future positions of objects in the sky, and to derive a model of the Earth's motion.
	Objective 6: Develop and demonstrate a variety of rhetorical strategies to develop strong analysis in essays.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 7: Demonstrate writing as a multi-step process including attention to planning and revision.	No Value	No Value
❗	**Objective 8: Practice composing organized, developed, analytical essays that increase in complexity.**	No Value	Participation in small-group and class discussions and analyses of astronomical data, so as to demonstrate an increasing ability to evaluate hypotheses about the nature and history of the physical universe.
❗	**Objective 9: Demonstrate appropriate grammar usage and mechanics.**	No Value	Lab quizzes and final exam that appraise comprehension and require analysis, synthesis, and application of course material.

C-Matrix Form

Changed	Questions	Current Version	Proposed Version
	ESL D261. and ESL D265., or ESL D461. and ESL D465., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 1: Create compositions about fiction and non-fiction texts from many cultural and social perspectives in a variety of genres.	No Value	No Value
	Objective 2: Compose a focused, purposeful, developed paper of 500 words or more that engages with, responds to, or is inspired by written or visual texts.	No Value	No Value
	Objective 3: Produce written work using a cyclical process of multiples drafts and revisions.	No Value	No Value
	Objective 4: Demonstrate the ability to include a variety of sentence structures in writing.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 5: Edit compositions to correct errors in the major conventions of Standard Written English.	No Value	No Value

D-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Intermediate algebra or equivalent (or higher), or appropriate placement beyond intermediate algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 1: Plan, implement, and assess work cycles, at the problem, lesson, module, and course level, to develop self-efficacy through the practice of self-regulated learning.	No Value	No Value
	Objective 2: Investigate the use of mathematics in real world.	No Value	No Value
	Objective 3: Explore functions.	No Value	No Value
	Objective 4: Develop linear function models.	No Value	No Value
	Objective 5: Use systems of two linear equations to solve real world problems.	No Value	No Value
	Objective 6: Use linear inequalities in one variable to solve real world problems.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 7: Examine exponential expressions and develop exponential function models.	No Value	No Value
	Objective 8: Examine logarithmic expressions and develop logarithmic function models.	No Value	No Value
	Objective 9: Develop quadratic function models to solve problems.	No Value	No Value
	Objective 10: Investigate the characteristics of rational expressions.	No Value	No Value
	Objective 11: Develop skills to work with radical expressions.	No Value	No Value

E-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Elementary algebra or equivalent (or higher), or appropriate placement beyond elementary algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Develop, throughout the course as applicable, systematic problem-solving methods.	No Value	No Value
	Objective 2: Explore the function concept algebraically, numerically, verbally and graphically.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 3: Explore the graphical and numerical characteristics of linear relationships and describe their meaning in the context of a problem.	No Value	No Value
	Objective 4: Develop linear function models to solve problems.	No Value	No Value
	Objective 5: Use systems of two linear equations to solve real-world problems.	No Value	No Value
	Objective 6: Explore the graphical and numerical characteristics of quadratic relationships and describe their meaning in the context of a problem.	No Value	No Value
	Objective 7: Develop quadratic function models to solve problems.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 8: Use inequalities to solve real world problems.	No Value	No Value
	Objective 9: Explore arithmetic sequences and series.	No Value	No Value
	Objective 10: Investigate, throughout the course as applicable, how mathematics has developed as a human activity around the world.	No Value	No Value

F-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Pre-algebra or equivalent (or higher), or appropriate placement beyond pre-algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
❗	**Objective 1: Develop, throughout the course as applicable, systematic problem solving methods.**	No Value	Participation in small-group and class discussions and analyses of astronomical data, so as to demonstrate an increasing ability to evaluate hypotheses about the nature and history of the physical universe.
❗	**Objective 2: Solve problems involving arithmetic operations, including fractions, percents and decimals.**	No Value	J.1: Measure distances to real or simulated terrestrial objects by observing them from different positions, and develop an analogy between this operation and the measurement of stellar distances by parallax.
❗	**Objective 3: Apply the order of operations to evaluate signed numerical expressions.**	No Value	J.2: Use the period-luminosity relation for Cepheid variable stars, developed by Henrietta Leavitt in the early 20th century, to determine the distances to star clusters and galaxies.

Changed	Questions	Current Version	Proposed Version
❗	**Objective 4: Solve problems involving operations with signed numbers.**	No Value	I.1: Relate the change in a star's observed wavelength (i.e. the Doppler shift of its light) to the star's velocity toward or away from the Earth, under the gravitational influence of an orbiting planet.
❗	**Objective 5: Explore the characteristics and properties of real numbers.**	No Value	F.1: Compare visual representations of astronomical images with their numerical representations (i.e. compare pictures to grids of numbers), to formulate a relationship between numerical pixel value and local image brightness.
❗	**Objective 6: Use estimation to determine approximate solutions and to check the reasonableness of answers.**	No Value	H.3: Predict the likelihood of being able to observe various stars from the Earth, given their position on the Hertzsprung-Russell diagram and the population of stars near the Sun.
❗	**Objective 7: Explore rates and ratios and use proportions to solve problems.**	No Value	E.1: Using software tools that remove the need to perform complex calculations or to solve equations, determine and compare the escape speeds from the surfaces of various planetary bodies.
❗	**Objective 8: Explore, as applicable throughout the course, the geometry of mathematical measurements and solve problems involving geometric figures and formulas.**	No Value	D.3: Simulate the paths taken by spacecraft between planets, to develop launch and landing scenarios for interplanetary missions, and use these results to assess the relative feasibility of the scenarios.

Changed	Questions	Current Version	Proposed Version
❗	**Objective 9: Explore the use of variables in expressions and evaluate algebraic expressions.**	No Value	D.1: Visualize the solar system as seen from above its plane, using software simulations, and compare the speeds, orbital distances, and orbital eccentricities of the solar system's planets.
❗	**Objective 10: Solve linear equations in one variable numerically and algebraically.**	No Value	D.2: Formulate relationships between orbital quantities like distance and speed, using software tools that remove the need to perform calculations or solve equations, and assess the validity of these hypotheses through comparisons between planets.
❗	**Objective 11: Graph linear relationships on a Cartesian coordinate by plotting ordered pairs.**	No Value	H.1: Classify stars into different stellar populations by plotting them on a diagram of spectral type (or temperature or color) versus luminosity.
❗	**Objective 12: Investigate, throughout the course as applicable, how mathematics has developed as a human activity around the world.**	No Value	F.3: Using image-processing software, calibrate astronomical images and combine them to produce higher-quality final images, and assess the effects of this processing on astronomers' ability to measure and interpret the properties of the objects that were photographed.

G-Matrix Form

Changed	Questions	Current Version	Proposed Version
	If the requisite does not fall under an A-F Matrix, download the Content Review Matrix G from the Reference Materials, and follow the remaining instructions on the form. If a requisite falling under Matrix G is being removed, provide an explanation as to why.	No Value	No Value

H-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Objective 1: For entrance into a CTE program such as Nursing, AUTO, APRN, etc… list the prerequisite(s) to participate in the program.	No Value	No Value
	Objective 2: For Student Cohorts, such as Honors, Puente, performance groups, intercollegiate teams, Special Projects course, etc… list the prerequisite(s) to participate in the cohort.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 3: For Prerequisites based on Government/Licensing/Certification Regulations, or legal requirements, cite the regulation that mandates a prerequisite or attach a copy of it to this form.	No Value	No Value
	Objective 4: For Prerequisites based on Health and Safety, describe the specific skills, concepts, and information without which the students would create a hazard to themselves or those around them. Also describe how students will meet those skills, i.e. such as a course.	No Value	No Value

De Anza GE Form

Changed	Questions	Current Version	Proposed Version
❗	**Criteria 1: Present core concepts and scope that define the discipline. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	CLSOs: Evaluate claims about the nature of the physical universe using the scientific method of hypothesis testing.

Changed	Questions	Current Version	Proposed Version
❗	**Criteria 2: Foster oral and written communication and collaborative exercises. Note that this criteria has three separate pieces: oral communication, written communication, and collaborative exercises. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	Methods of Evaluation: A. Lab quizzes and final exam that appraise comprehension and require analysis, synthesis, and application of course material. B. Participation in small-group and class discussions and analyses of astronomical data, so as to demonstrate an increasing ability to evaluate hypotheses about the nature and history of the physical universe.
❗	**Criteria 3: Stimulate critical thinking. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	Methods of Evaluation: C. Work products from laboratory exercises demonstrate proficiency in standard astronomical data-analysis techniques, as well as critical thinking regarding the choice of analytical methods.

Changed	Questions	Current Version	Proposed Version
❗	**Criteria 4: Include diverse perspectives and contributions in the discipline such as: gender, culture, values, and/or societal perspectives. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	Course Outline: J (#2). Use the period-luminosity relation for Cepheid variable stars, developed by Henrietta Leavitt in the early 20th century, to determine the distances to star clusters and galaxies.
❗	**Criteria 5: Provide global and historical context. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	Course Outline: G(#4). Compare the derived color-index system to the system of spectral classification developed by Annie Jump Cannon in the early 20th century, and assess the feasibility of both methods for measuring star temperatures.

Changed	Questions	Current Version	Proposed Version
❗	**Criteria 6: Use real-world or hands-on applications that will provide a context for the concepts being discussed. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	Course Outline: B. Distinguish between different types of astronomical objects by measuring their positions and designations on star charts, and by using publicly-available imagery from research observatories and the Hubble Space Telescope

De Anza GE - ESGC Form

Changed	Questions	Current Version	Proposed Version
	Criteria 1: Explain the interconnectivity of economic prosperity, social equity and environmental quality.	No Value	No Value
❗	**Criteria 6: Use real-world or hands-on applications that will provide a context for**	No Value	Course Outline: B. Distinguish

Changed	Questions	Current Version	Proposed Version
	Criteria 2: Identify the most serious environmental, equity, and social justice problems globally and locally and explain their underlying causes and possible consequences.	No Value	No Value
	Criteria 3: Explain some significant ways students can make a difference in making a positive impact, locally, at a state level, or globally in making the world more environmentally sustainable and socially just.	No Value	No Value
	Criteria 4: Analyze how the well being of human society is dependent on sustainable social and ecological systems.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Criteria 5: Demonstrate an understanding of how the student's personal activities impact the environment and communities by participating in actions to create a more environmentally sustainable and equitable future.	No Value	No Value

Comments

Changed	Questions	Current Version	Proposed Version
	Stage 2: Department Chair	No Value	No Value
	Stage 3: Division Curriculum Representative	No Value	No Value
	Stage 4: Division Dean	No Value	No Value
	Stage 5: SLO Coordinator	No Value	No Value
	Stage 7: Content Review Matrix Liaison	No Value	No Value

Changed	Questions	Current Version	Proposed Version					
❗	**Stage 8: AVP - Instruction**	No Value	**Date**	**Name - Role OR Tab**	**Part - Field**	**Type of Edit**	**Edit**	**Initiator - Indicate "Y" When Completed**
			5/17/24	Gabriela Nocito for AVPI	Basic Information - Proposal Details - Attachments	Required	Please attach the newer Course Online Delivery Request form. Forms approved in 2022 are available within eLumen.	
	Stage 9: Articulation Officer	No Value	No Value					
	Stage 11: ESGC Faculty Coordinator	No Value	No Value					
	Stage 14: Curriculum Committee	No Value	No Value					

Course Administration Codes

Articulation occurs after course approval. The following fields will not show a Proposed Version.

Changed	Field	Current Version
	Curriculum ID	ASTRD015L
	Distance Education Approved	No

Changed	Field	Current Version
	Board of Trustees Approval Date	
	Curriculum Committee Approval Date	
	Time to Next Review	Sep 1, 2023 12:00:00 AM
	External Review Approval Date	Sep 1, 2018 12:00:00 AM
	Course Control Number	CCC000534918

Articulation

Changed	Field	Current Version
	Course Crosswalk CRS-DEPT-NAME	
	Course Crosswalk CRS-NUMBER	

Summary of Changes

Section	Changed field
General Information	Faculty Initiator
General Information	Effective Term
General Information	Course Type (CB27)
General Information	Mode of Delivery
Faculty Requirements	Discipline 1
Faculty Requirements	FSA
Specifications	Methods of Instruction
Specifications	Methods of Evaluation
Specifications	Examples of Primary Texts and References
Specifications	Suggested Reading List
Curriculum Office	Banner Start Term (202122)
Curriculum Office	Banner Division
Curriculum Office	Catalog Term (21-22)
Curriculum Office	5 Year Revision Year (2021)
Curriculum Office	Effective Quarter
Curriculum Office	Effective Year (2021)
Curriculum Office	Course Status Code
Curriculum Office	Banner Department
Curriculum Office	Course Level
Curriculum Office	College Code
Curriculum Office	CTE Status
Curriculum Office	Hybrid Approval Date (MM/DD/YYYY)
Curriculum Office	Emergency Approval
Curriculum Office	Repeat Status (N = Not Repeatable; T = Repeatable for Max Times Only; B = Repeatable for Max Times/Units; U = Repeatable for Max Units Only; Y = Yearly Repeatable Restriction)
Curriculum Office	Repeat Type (N = Non-repeatable Credit; A = Activity/Other Repeatable; F = Family Non-repeatable Credit; G = Family Activity/Other Repeatable; L = Legally Mandated Training)
Curriculum Office	Noncredit Enhanced Funding Indicator
Curriculum Office	In Service Indicator
Curriculum Office	Sports/Physical Education Course Indicator

Section	Changed field
Curriculum Office	COA Code
Curriculum Office	Fund Code
Curriculum Office	Organization Code
Curriculum Office	Account Code
Curriculum Office	Program Code
Curriculum Office	Percent
Curriculum Office	Print/No Print to Catalog
C-Matrix Form	Objective 1: Create compositions about fiction and non-fiction texts from many cultural and social perspectives in a variety of genres.
C-Matrix Form	Objective 3: Produce written work using a cyclical process of multiples drafts and revisions.
Comments	Stage 4: Division Dean
CTE Course	Is this a CTE (Career Technical Education) course?
Honors/Non-honors Course	Is this an honors/non-honors course?
Mirrored Credit/Noncredit Course	Is this a mirrored credit/noncredit course?
Cross-listed Course	Is this a cross-listed course?

General Information

Changed	Field	Current Version	Proposed Version
❗	Faculty Initiator	• Bob Kalpin	• Mary Pape
	Course ID (CB01A and CB01B)	CISD105.	CISD105.
	Course Control Number	CCC000592139	CCC000592139
	Course Title (CB02)	Cloud Security Fundamentals	Cloud Security Fundamentals
	Short Course Title	CLOUD SECURITY FUNDAMENTALS	CLOUD SECURITY FUNDAMENTALS
	TOP Code (CB03)	0708.00	0708.00 Computer Infrastructure and Support
	CIP Code	Computer and Information Systems Security/Information Assurance	11.1003 Computer and Information Systems Security/Information Assurance
	Department	CIS - Computer Sci & Info Systems	CIS - Computer Sci & Info Systems
❗	Effective Term	Fall 2023	Fall ~~2023~~ 2025
	SAM Priority Code (CB09)	Possibly Occupational	Possibly Occupational

Changed	Field	Current Version	Proposed Version
	Course Description	This course explores how to secure a cloud environment and provides the history of cloud computing and how cloud computing is being used today. Various cloud environments such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) and understanding both native and hybrid environments will also be explored. Topics including network security, host security, Identity and Access Management (IAM), cryptography and data protection, access controls, patch management, as well as credential and key management will be examined. Cloud security operations including logging, incident response in the cloud, as well as preventative and self-correcting security controls using labs exercises will be investigated. This hands-on course is designed to prepare students for modern-day infrastructure environments.	This course explores how to secure a cloud environment and provides the history of cloud computing and how cloud computing is being used today. Various cloud environments such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) and understanding both native and hybrid environments will also be explored. Topics including network security, host security, Identity and Access Management (IAM), cryptography and data protection, access controls, patch management, as well as credential and key management will be examined. Cloud security operations including logging, incident response in the cloud, as well as preventative and self-correcting security controls using labs exercises will be investigated. This hands-on course is designed to prepare students for modern-day infrastructure environments.
❗	**Course Type (CB27)**	No value	• Lower Division
❗	**Mode of Delivery**	• Hybrid	• Online • Hybrid

Faculty Requirements

Changed	Field	Current Version	Proposed Version
❗	**Discipline 1**	No value	• Computer Information Systems (Computer network installation, microcomputer technology, computer applications)
	Discipline 2	No value	No value
	Discipline 3	No value	No value
❗	**FSA**	No value	• FHDA FSA - CIS

Formerly Statement

Changed	Field	Current Version	Proposed Version
	Formerly Statement	No value	

Course Justification

Changed	Field	Current Version	Proposed Version
	Course Justification	This is a course in a CTE program that was developed based on state and national trends needing computer security professionals. This course belongs on the Enterprise Security Professional Certificates and A.A. degree. This course provides students with the foundation skills for computer security and supports professional employment in the Silicon Valley. This course addresses the issue of protecting computer systems in the Cloud.	This is a course in a CTE program that was developed based on state and national trends needing computer security professionals. This course belongs on the Enterprise Security Professional Certificates and A.A. degree. This course provides students with the foundation skills for computer security and supports professional employment in the Silicon Valley. This course addresses the issue of protecting computer systems in the Cloud.

Stand-Alone Statement

Changed	Field	Current Version	Proposed Version
	Stand-Alone Statement	No value	

Course Philosophy

Changed	Field	Current Version	Proposed Version
	Course Philosophy	No value	

Foothill Equivalency

Changed	Field	Current Version	Proposed Version
	Does the course have a Foothill equivalent?	No	No
	Foothill Faculty Consultation Name	No value	
	Foothill Course ID	No value	

CTE Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a CTE (Career Technical Education) course?**	No value	Yes

Honors/Non-honors Course

Changed	Field	Current Version	Proposed Version
❗	**Is this an honors/non-honors course?**	No value	No

Mirrored Credit/Noncredit Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a mirrored credit/noncredit course?**	No value	No

Cross-listed Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a cross-listed course?**	No value	No

More Options

Changed	Field	Current Version	Proposed Version
	Basic Skill Status (CB08)	Course is not a basic skills course.	Course is not a basic skills course.
	Course Prior To College Level	Not applicable.	Not applicable.
	Course Special Class Status (CB13)	Course is not a special class.	Course is not a special class.
	Course Support Status (CB26)	Course is not a support course	Course is not a support course
	Repeat Limit	0	0
	Grade Options	• Letter Grade • Pass/No Pass	• Letter Grade • Pass/No Pass
	Allow Students to Gain Credit by Exam/Challenge	☐	☐
	Repeatability Statement	No value	

Associated Programs

Changed	Field	Current Version	Proposed Version
	Course is part of a program		

	Associated Program	Cybersecurity		**Associated Program**	Cybersecurity
	Award Type	Certificate of Achievement-Advanced (COA-A)		**Award Type**	Certificate of Achievement-Advanced (COA-A)

	Associated Program	Cybersecurity		**Associated Program**	Cybersecurity
	Award Type	Certificate of Achievement-Advanced (COA-A)		**Award Type**	Certificate of Achievement-Advanced (COA-A)

	Associated Program	Cybersecurity		**Associated Program**	Cybersecurity
	Award Type	Associate in Arts (A.A.) Degree		**Award Type**	Associate in Arts (A.A.) Degree

	Associated Program	Cybersecurity		**Associated Program**	Cybersecurity
	Award Type	Associate in Arts (A.A.) Degree		**Award Type**	Associate in Arts (A.A.) Degree

Transferability & Gen. Ed. Options

Changed	Field	Current Version	Proposed Version
	Transfer Status (CB05)	Not transferable	Not transferable
	Course General Education Status (CB25)	Y	Y
	Transfer Status	Not transferable	Not transferable
	GE Information	No value	No value

Weekly Student Hours - Profile Name: Default Profile

Changed	Field	Current Version	Proposed Version
	Lecture Hours - In Class	4	4
	Lecture Hours - Out of Class	8	8
	Laboratory Hours - In Class	1.5	1.5
	Laboratory Hours - Out of Class	0	0
	NA Hours - In Class	0	0

Changed	Field	Current Version	Proposed Version
	NA Hours - Out of Class	0	0

Course Student Hours - Profile Name: Default Profile

Changed	Field	Current Version	Proposed Version
	Course Duration (Weeks)	12	12
	Hours per unit divisor	36	36
	Total Student Learning Hours	162	162
	Lecture Hours - Course In-Class (Contact) per Term	48	48
	Lecture Hours - Course Out-of-Class per Term	96	96
	Laboratory Hours - Course In-Class (Contact) per Term	18	18
	Laboratory Hours - Course Out-of-Class per Term	0	0
	NA Hours - Course In-Class (Contact) per Term	0	0
	NA Hours - Course Out-of-Class per Term	0	0
	Total - Course In-Class (Contact) Hours	66	66
	Total - Course Out-of-Class Hours	96	96
	Total Credit Units - Minimum Credit Units	4.5	4.5
	Total Credit Units - Maximum Credit Units	4.5	4.5

Speciality Hours

Changed	Field	Current Version	Proposed Version
	Speciality Hours	No value	No value

Credit / Non-Credit Options

Changed	Field	Current Version	Proposed Version
	COURSE CLASSIFICATION STATUS	Credit Course.	Credit Course.
	Course Credit Status (CB04)	Credit - Degree Applicable	Credit - Degree Applicable
	Course Non Credit Category (CB22)	Credit Course.	Credit Course.
	Funding Agency Category (CB23)	Not Applicable.	Not Applicable.
	Cooperative Work Experience Education Status (CB10)	☐	☐
	Variable Credit Course	☐	☐

Credit Units

Changed	Field	Current Version	Proposed Version
	Course Duration (Weeks)	12	12
	Total Lecture Hours per Term	144	144
	Total Laboratory Hours per Term	18	18
	Total Contact Hours per Term	-	0
	Total Credit Units	4.5	4.5
	Minimum Credit Units	4.5	4.5
	Maximum Credit Units	4.5	4.5

SKIP

Changed	Field	Current Version	Proposed Version
	SKIP	No Value	No Value

Specifications

Changed	Field	Current Version	Proposed Version

Methods of Instruction (⊖)

Methods of Instruction	
Methods of Instruction	Lecture and visual aids Discussion of assigned reading Discussion and problem solving performed in class Quiz and examination review performed in class Homework and extended projects Collaborative projects Collaborative learning and small group exercises Laboratory discussion sessions and quizzes that evaluate the proceedings weekly laboratory exercises Individual projects

Methods of Instruction	Methods of Instruction
Methods of Instruction	Lecture and visual aids Discussion of assigned reading Discussion and problem solving performed in class Quiz and examination review performed in class Homework and extended projects Collaborative projects Collaborative learning and small group exercises Laboratory discussion sessions and quizzes that evaluate the proceedings weekly laboratory exercises Individual projects

Assignments

Current Version:
1. Reading assignments
2. Lab assignments

Proposed Version:
1. Reading assignments
2. Lab assignments

Methods of Evaluation (⊖)

Methods of Evaluation	
Methods of Evaluation	1. Quizzes and/or midterm and a final exam to evaluate comprehension and mastery of key terms and concepts as well as application of skills related to analysis and synthesis of computer concepts. 2. Participation in lab skills exercises that demonstrate ability to critically evaluate and implement security and minimize risk in a cloud environment.

Methods of Evaluation	Methods of Evaluation
Methods of Evaluation	1. Quizzes and/or midterm and a final exam to evaluate comprehension and mastery of key terms and concepts as well as application of skills related to analysis and synthesis of computer concepts. 2. Participation in lab skills exercises that demonstrate ability to critically evaluate and implement security and minimize risk in a cloud environment.

Essential Student Materials/Essential College Facilities

Current Version:

Essential Student Materials:
- AWS Free Tier Account

Essential College Facilities:
- Computer laboratory

Proposed Version:

Essential Student Materials:
- AWS Free Tier Account

Essential College Facilities:
- Computer laboratory

Changed	Field	Current Version	Proposed Version
❗	**Examples of Primary Texts and References**		

Title	No value
Author	AWS Online Documentation https://aws.amazon.com/documentation/
Publisher	No value
Date/Edition	No value
ISBN	No value

Title	No value
Author	AWS Online Documentation https://aws.amazon.com/documentation/
Publisher	No value
Date/Edition	No value
ISBN	No value

Title	No value
Author	Azure Online Documentation https://docs.microsoft.com/en-us/azure/
Publisher	No value
Date/Edition	No value
ISBN	No value

Title	No value
Author	Azure Online Documentation https://docs.microsoft.com/en-us/azure/
Publisher	No value
Date/Edition	No value
ISBN	No value

Title	No value
Author	AWS Cloud Security Resources https://aws.amazon.com/security/security-resources/
Publisher	No value
Date/Edition	No value
ISBN	No value

Title	No value
Author	AWS Cloud Security Resources https://aws.amazon.com/security/security-resources/
Publisher	No value
Date/Edition	No value
ISBN	No value

Title	No value
Author	Samani, Raj; Reavis, Jim; Honan, Brian. "CSA Guide to Cloud Computing: Implementing Cloud Privacy and Security." Syngress; 1 edition (October 8, 2014)
Publisher	No value
Date/Edition	No value
ISBN	No value

Title	Practical Cloud Security: A Guide for Secure Design and Deployment
Author	Chris Dotson
Publisher	O'Reilly Media
Date/Edition	November 14, 2023/2nd
ISBN	978-1098148171

Changed	Field	Current Version	Proposed Version
❗	**Suggested Reading List**		No value

Reading List	Netsec subreddit: https://www.reddit.com/r/netsec/
May include, but are not limited to	No value

Reading List	SANS Daily Stormcast: https://isc.sans.edu/podcast.html
May include, but are not limited to	No value

Reading List	Schneier on Security: https://www.schneier.com/
May include, but are not limited to	No value

Reading List	http://www.irongeek.com/
May include, but are not limited to	No value

Learning Outcomes and Objectives

Changed	Field	Current Version	Proposed Version
	Course Objectives	- Investigate cloud environments - Explore security fundamentals - Explore Identity and Access Management - Explore cloud security architectures - Investigate resiliency and availability in the cloud - Utilize data security and protection - Explore utilizing and securing SAAS technologies - Explore cloud incident response process	- Investigate cloud environments - Explore security fundamentals - Explore Identity and Access Management - Explore cloud security architectures - Investigate resiliency and availability in the cloud - Utilize data security and protection - Explore utilizing and securing SAAS technologies - Explore cloud incident response process

Changed	Field	Current Version	Proposed Version

CSLOs

CSLOs	Identify the risks in utilizing cloud services.
Expected SLO Performance	0.0

CSLOs	Identify the risks in utilizing cloud services.
Expected SLO Performance	0.0

CSLOs	Identify the steps required to secure a cloud environment.
Expected SLO Performance	0.0

CSLOs	Identify the steps required to secure a cloud environment.
Expected SLO Performance	0.0

Course Outline

Changed	Field	Current Version	Proposed Version

❗	**Course Content**	1. Investigate cloud environments
		  1. History of cloud computing
		  2. Types of cloud computing
		    1. Infrastructure as a Service (IaaS)
		    2. Platform as a service (PaaS)
		    3. Software as a service (SaaS)
		  3. Legacy security controls
		  4. Benefits of cloud computing vs traditional infrastructure
		  5. Limitations of cloud computing
		  6. Mapping traditional infrastructure to cloud infrastructure
		  7. Cloud computing in organizations
		    1. Infrastructure as code
		    2. DevOps
		    3. Tooling
		2. Explore security fundamentals
		  1. CIA triad
		  2. Detective, Corrective, and Preventative Controls
		  3. Policy, governance, risk, and compliance
		  4. Network security
		  5. Disaster recovery and availability
		  6. Security operations
		3. Explore Identity and Access Management
		  1. Key management
		  2. Users, Groups, Roles
		  3. Federation
		  4. Access controls and permission
		  5. Policies
		4. Explore cloud security architectures
		  1. Detective controls
		  2. Corrective controls
		  3. Preventative controls
		  4. Load balancing
		  5. Logging
		  6. 3rd party tools and integration
		  7. DIY tool development
		5. Investigate resiliency and availability in the cloud
		  1. Disaster recovery
		  2. Infrastructure availability
		  3. Application resilience and availability
		  4. Monitoring
		6. Utilize data security and protection
		  1. Cryptography
		  2. Key and credential management
		  3. HSMs
		  4. PKI
		  5. Cloud vs DIY
		7. Explore utilizing and securing SAAS technologies
		  1. Access controls
		  2. Authorization controls
		  3. 3rd party data access and authorization
		  4. Logging
		  5. APIs
		8. Explore cloud incident response process
		  1. Incident response policy
		  2. Incident response planning
		  3. Incident response procedures
			1. Investigate cloud environments
			  1. History of cloud computing
			  2. Types of cloud computing
			    1. Infrastructure as a Service (IaaS)
			    2. Platform as a service (PaaS)
			    3. Software as a service (SaaS)
			  3. Legacy security controls
			  4. Benefits of cloud computing vs traditional infrastructure
			  5. Limitations of cloud computing
			  6. Mapping traditional infrastructure to cloud infrastructure
			  7. Sharing security responsibilities in a company using a cloud vendor
			  8. Cloud computing in organizations
			    1. Infrastructure as code
			    2. DevOps
			    3. Tooling
			2. Explore security fundamentals
			  1. CIA triad
			  2. Detective, Corrective, and Preventative Controls
			  3. Policy, governance, risk, and compliance
			  4. Network security
			  5. Disaster recovery and availability
			  6. Security operations
			3. Explore Identity and Access Management
			  1. Key management
			  2. Users, Groups, Roles
			  3. Federation
			  4. Access controls and permission
			  5. Policies
			4. Explore cloud security architectures
			  1. Detective controls
			  2. Corrective controls
			  3. Preventative controls
			  4. Load balancing
			  5. Logging
			  6. 3rd party tools and integration
			  7. DIY tool development
			5. Investigate resiliency and availability in the cloud
			  1. Disaster recovery
			  2. Infrastructure availability
			  3. Application resilience and availability
			  4. Monitoring
			6. Utilize data security and protection
			  1. Cryptography
			  2. Key and credential management
			  3. HSMs
			  4. PKI
			  5. Cloud vs DIY
			7. Explore utilizing and securing SAAS technologies
			  1. Access controls
			  2. Authorization controls
			  3. 3rd party data access and authorization
			  4. Logging
			  5. APIs
			8. Explore cloud incident response process
			  1. Incident response policy
			  2. Incident response planning
			  3. Incident response procedures

	Lab Component in this Course	Yes	Yes

Changed	Field	Current Version	Proposed Version
	Lab Outline	1. Setup your cloud environment 2. Create users, groups, roles, and policies 3. Create networks, subnets, and instances 4. Implement network security 5. Implement logging and auditing 6. Choose and setup a monitoring and alerting platform 7. Setup load balancing and resiliency 8. Conduct forensics in the cloud 9. Implement corrective controls 10. Create SAAS environment 11. Setup SSO for your environment 12. Utilize the API 13. Create a simple script for automation 14. Using tools to assess cloud environments	1. Setup your cloud environment 2. Create users, groups, roles, and policies 3. Create networks, subnets, and instances 4. Implement network security 5. Implement logging and auditing 6. Choose and setup a monitoring and alerting platform 7. Setup load balancing and resiliency 8. Conduct forensics in the cloud 9. Implement corrective controls 10. Create SAAS environment 11. Setup SSO for your environment 12. Utilize the API 13. Create a simple script for automation 14. Using tools to assess cloud environments

Req/Adv

Changed	Questions	Current Version	Proposed Version
	Prerequisite(s):	No Value	No Value
	Corequisite(s):	No Value	No Value
	Advisory(ies):	ESL D261. and ESL D265., or ESL D461. and ESL D465., or eligibility for EWRT D001A or EWRT D01AH or ESL D005.	ESL D261. and ESL D265., or ESL D461. and ESL D465., or eligibility for EWRT D001A or EWRT D01AH or ESL D005.
	Advisory(ies) - Other:	CIS D046.	CIS D046.
	Limitation(s) on Enrollment:	No Value	No Value
	Limitation(s) on Enrollment - Other:	No Value	No Value
	Entrance Skills(s):	No Value	No Value
	Entrance Skill(s) - Other:	No Value	No Value
	General Course Statement(s):	No Value	No Value
	General Course Statement(s) - Other:	No Value	No Value

Curriculum Office

Changed	Questions	Current Version	Proposed Version
❗	Banner Start Term (202122)	202322	No Value
❗	Banner Division	2CB	No Value
❗	Catalog Term (21-22)	23-24	No Value
❗	5 Year Revision Year (2021)	2018	No Value

Changed	Questions	Current Version	Proposed Version
❗	**Effective Quarter**	Fall	No Value
❗	**Effective Year (2021)**	2023	No Value
	Sort ID (00 < 10; 0 < 100)	CIS 105	CIS 105
	Course Status	Non-substantial	Non-substantial
❗	**Course Status Code**	A	No Value
❗	**Banner Department**	CIS	No Value
❗	**Course Level**	DU	No Value
❗	**College Code**	DA	No Value
	Course Characteristics	CTE	CTE
	Cross-Listed/Related Course Information	NA	NA
	Cross-Listed/Related Course ID's	No Value	No Value
❗	**CTE Status**	Yes	No Value
	DL Approval Date (MM/DD/YYYY)	No Value	No Value
❗	**Hybrid Approval Date (MM/DD/YYYY)**	05/23/2017	No Value
❗	**Emergency Approval**	No	No Value
❗	**Repeat Status (N = Not Repeatable; T = Repeatable for Max Times Only; B = Repeatable for Max Times/Units; U = Repeatable for Max Units Only; Y = Yearly Repeatable Restriction)**	N	No Value
❗	**Repeat Type (N = Non-repeatable Credit; A = Activity/Other Repeatable; F = Family Non-repeatable Credit; G = Family Activity/Other Repeatable; L = Legally Mandated Training)**	N	No Value
❗	**Noncredit Enhanced Funding Indicator**	N	No Value
❗	**In Service Indicator**	N	No Value
❗	**Sports/Physical Education Course Indicator**	N	No Value

Changed	Questions	Current Version	Proposed Version
❗	COA Code	C	No Value
❗	Fund Code	114000	No Value
❗	Organization Code	233003	No Value
❗	Account Code	1320	No Value
❗	Program Code	070100	No Value
❗	Percent	100	No Value
	Curriculum Office Notes	• Tech. change to req/adv to add noncredit ESL course, appr. 6/15/21 (effect. F22).-mkct • Tech. change to req/adv due to CIS course number change, appr. 10/26/21 (effect. F22).-mkct • Requisite change appr. 1/17/23 (effect. F23).-cc	• Tech. change to req/adv to add noncredit ESL course, appr. 6/15/21 (effect. F22).-mkct • Tech. change to req/adv due to CIS course number change, appr. 10/26/21 (effect. F22).-mkct • Requisite change appr. 1/17/23 (effect. F23).-cc
❗	Print/No Print to Catalog	Yes	No Value
	Checklist	No Value	No Value

Summary of Revisions

Changed	Questions	Current Version	Proposed Version
	Basic Course Information	No Value	No Value
	Units and Hours	No Value	No Value
	Specifications	No Value	No Value
	Outline	No Value	No Value
	Other	No Value	No Value

Blue Form

Changed	Questions	Current Version	Proposed Version
	For changes to the units and hours tab; 1) Contact the Curriculum Office at curriculum@fhda.edu with the course information changes; and 2) address items 1-3 below. Please be aware that load factors and seat counts are assigned based on established, negotiated values.	No Value	No Value
	1. Is the unit(s) change required for articulation?	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	2. If the course is UC or CSU transferable, identify one UC or CSU campus with the same unit value requested and copy and paste the catalog description of the course.	No Value	No Value
	3. Identify the areas in the course outline of record that justify the unit(s) and/or hour(s) change.	No Value	No Value
	Office Use ONLY: For a REVISION, state the existing unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value
	Office Use ONLY: For a REVISION, state the new unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value
	Office Use ONLY: For NEW, state the unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value

A-Matrix Form

Changed	Questions	Current Version	Proposed Version
	EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Analyze college level texts and discourse that are culturally and rhetorically diverse.	No Value	No Value
	Objective 2: Compose essays drawn from personal experience and assigned texts.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 3: Utilize MLA guidelines to format essays, cite sources, and compile a works cited page.	No Value	No Value
	Objective 4: Create syntactically varied sentences that are free of mechanical errors.	No Value	No Value
	Objective 5: Distinguish, compare, and evaluate the multiplicity and ambiguity of perspectives.	No Value	No Value

B-Matrix Form

Changed	Questions	Current Version	Proposed Version
	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Analyze a variety of college-level texts with a focus predominantly on expository and argumentative writing.	No Value	No Value
	Objective 2: Develop analytical ideas and topics for essays.	No Value	No Value
	Objective 3: Compose and support thesis statements for analytical essays.	No Value	No Value
	Objective 4: Develop clear sequential relationship between central argument/controlling idea and supporting ideas in writing.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 5: Identify and practice writing for different audiences and purposes.	No Value	No Value
	Objective 6: Develop and demonstrate a variety of rhetorical strategies to develop strong analysis in essays.	No Value	No Value
	Objective 7: Demonstrate writing as a multi-step process including attention to planning and revision.	No Value	No Value
	Objective 8: Practice composing organized, developed, analytical essays that increase in complexity.	No Value	No Value
	Objective 9: Demonstrate appropriate grammar usage and mechanics.	No Value	No Value

C-Matrix Form

Changed	Questions	Current Version	Proposed Version
	ESL D261. and ESL D265., or ESL D461. and ESL D465., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
❗	**Objective 1: Create compositions about fiction and non-fiction texts from many cultural and social perspectives in a variety of genres.**	No Value	Methods of Evaluation: Quizzes and/or midterm and a final exam to evaluate comprehension and mastery of key terms and concepts as well as application of skills related to analysis and synthesis of computer concepts.

Changed	Questions	Current Version	Proposed Version
	Objective 2: Compose a focused, purposeful, developed paper of 500 words or more that engages with, responds to, or is inspired by written or visual texts.	No Value	No Value
❗	**Objective 3: Produce written work using a cyclical process of multiples drafts and revisions.**	No Value	Method of Evaluation B: Participation in lab skills exercises that demonstrate ability to critically evaluate and implement security and minimize risk in a cloud environment.
	Objective 4: Demonstrate the ability to include a variety of sentence structures in writing.	No Value	No Value
	Objective 5: Edit compositions to correct errors in the major conventions of Standard Written English.	No Value	No Value

D-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Intermediate algebra or equivalent (or higher), or appropriate placement beyond intermediate algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Plan, implement, and assess work cycles, at the problem, lesson, module, and course level, to develop self-efficacy through the practice of self-regulated learning.	No Value	No Value
	Objective 2: Investigate the use of mathematics in real world.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 3: Explore functions.	No Value	No Value
	Objective 4: Develop linear function models.	No Value	No Value
	Objective 5: Use systems of two linear equations to solve real world problems.	No Value	No Value
	Objective 6: Use linear inequalities in one variable to solve real world problems.	No Value	No Value
	Objective 7: Examine exponential expressions and develop exponential function models.	No Value	No Value
	Objective 8: Examine logarithmic expressions and develop logarithmic function models.	No Value	No Value
	Objective 9: Develop quadratic function models to solve problems.	No Value	No Value
	Objective 10: Investigate the characteristics of rational expressions.	No Value	No Value
	Objective 11: Develop skills to work with radical expressions.	No Value	No Value

E-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Elementary algebra or equivalent (or higher), or appropriate placement beyond elementary algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 1: Develop, throughout the course as applicable, systematic problem-solving methods.	No Value	No Value
	Objective 2: Explore the function concept algebraically, numerically, verbally and graphically.	No Value	No Value
	Objective 3: Explore the graphical and numerical characteristics of linear relationships and describe their meaning in the context of a problem.	No Value	No Value
	Objective 4: Develop linear function models to solve problems.	No Value	No Value
	Objective 5: Use systems of two linear equations to solve real-world problems.	No Value	No Value
	Objective 6: Explore the graphical and numerical characteristics of quadratic relationships and describe their meaning in the context of a problem.	No Value	No Value
	Objective 7: Develop quadratic function models to solve problems.	No Value	No Value
	Objective 8: Use inequalities to solve real world problems.	No Value	No Value
	Objective 9: Explore arithmetic sequences and series.	No Value	No Value
	Objective 10: Investigate, throughout the course as applicable, how mathematics has developed as a human activity around the world.	No Value	No Value

F-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Pre-algebra or equivalent (or higher), or appropriate placement beyond pre-algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Develop, throughout the course as applicable, systematic problem solving methods.	No Value	No Value
	Objective 2: Solve problems involving arithmetic operations, including fractions, percents and decimals.	No Value	No Value
	Objective 3: Apply the order of operations to evaluate signed numerical expressions.	No Value	No Value
	Objective 4: Solve problems involving operations with signed numbers.	No Value	No Value
	Objective 5: Explore the characteristics and properties of real numbers.	No Value	No Value
	Objective 6: Use estimation to determine approximate solutions and to check the reasonableness of answers.	No Value	No Value
	Objective 7: Explore rates and ratios and use proportions to solve problems.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 8: Explore, as applicable throughout the course, the geometry of mathematical measurements and solve problems involving geometric figures and formulas.	No Value	No Value
	Objective 9: Explore the use of variables in expressions and evaluate algebraic expressions.	No Value	No Value
	Objective 10: Solve linear equations in one variable numerically and algebraically.	No Value	No Value
	Objective 11: Graph linear relationships on a Cartesian coordinate by plotting ordered pairs.	No Value	No Value
	Objective 12: Investigate, throughout the course as applicable, how mathematics has developed as a human activity around the world.	No Value	No Value

G-Matrix Form

Changed	Questions	Current Version	Proposed Version
	If the requisite does not fall under an A-F Matrix, download the Content Review Matrix G from the Reference Materials, and follow the remaining instructions on the form. If a requisite falling under Matrix G is being removed, provide an explanation as to why.	No Value	No Value

H-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Objective 1: For entrance into a CTE program such as Nursing, AUTO, APRN, etc… list the prerequisite(s) to participate in the program.	No Value	No Value
	Objective 2: For Student Cohorts, such as Honors, Puente, performance groups, intercollegiate teams, Special Projects course, etc… list the prerequisite(s) to participate in the cohort.	No Value	No Value
	Objective 3: For Prerequisites based on Government/Licensing/Certification Regulations, or legal requirements, cite the regulation that mandates a prerequisite or attach a copy of it to this form.	No Value	No Value
	Objective 4: For Prerequisites based on Health and Safety, describe the specific skills, concepts, and information without which the students would create a hazard to themselves or those around them. Also describe how students will meet those skills, i.e. such as a course.	No Value	No Value

De Anza GE Form

Changed	Questions	Current Version	Proposed Version
	Criteria 1: Present core concepts and scope that define the discipline. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Criteria 2: Foster oral and written communication and collaborative exercises. Note that this criteria has three separate pieces: oral communication, written communication, and collaborative exercises. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value
	Criteria 3: Stimulate critical thinking. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value
	Criteria 4: Include diverse perspectives and contributions in the discipline such as: gender, culture, values, and/or societal perspectives. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value
	Criteria 5: Provide global and historical context. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value
	Criteria 6: Use real-world or hands-on applications that will provide a context for the concepts being discussed. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value

De Anza GE - ESGC Form

Changed	Questions	Current Version	Proposed Version
	Criteria 1: Explain the interconnectivity of economic prosperity, social equity and environmental quality.	No Value	No Value
	Criteria 2: Identify the most serious environmental, equity, and social justice problems globally and locally and explain their underlying causes and possible consequences.	No Value	No Value
	Criteria 3: Explain some significant ways students can make a difference in making a positive impact, locally, at a state level, or globally in making the world more environmentally sustainable and socially just.	No Value	No Value
	Criteria 4: Analyze how the well being of human society is dependent on sustainable social and ecological systems.	No Value	No Value
	Criteria 5: Demonstrate an understanding of how the student's personal activities impact the environment and communities by participating in actions to create a more environmentally sustainable and equitable future.	No Value	No Value

Comments

Changed	Questions	Current Version	Proposed Version
	Stage 2: Department Chair	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Stage 3: Division Curriculum Representative	No Value	No Value
❗	**Stage 4: Division Dean**	No Value	Initiator would like make a minor change on the course outline tab.
	Stage 5: SLO Coordinator	No Value	No Value
	Stage 7: Content Review Matrix Liaison	No Value	No Value
	Stage 8: AVP - Instruction	No Value	No Value
	Stage 9: Articulation Officer	No Value	No Value
	Stage 11: ESGC Faculty Coordinator	No Value	No Value
	Stage 14: Curriculum Committee	No Value	No Value

Course Administration Codes

Articulation occurs after course approval. The following fields will not show a Proposed Version.

Changed	Field	Current Version
	Curriculum ID	CISD105.
	Distance Education Approved	Yes
	Board of Trustees Approval Date	
	Curriculum Committee Approval Date	Oct 26, 2021 12:00:00 AM
	Time to Next Review	Sep 1, 2023 12:00:00 AM
	External Review Approval Date	Sep 1, 2018 12:00:00 AM
	Course Control Number	CCC000592139

Articulation

Changed	Field	Current Version
	Course Crosswalk CRS-DEPT-NAME	
	Course Crosswalk CRS-NUMBER	

De Anza College
Change Report
09/20/2024

Summary of Changes

Section	Changed field
General Information	Faculty Initiator
General Information	Course Title (CB02)
General Information	Effective Term
General Information	Course Type (CB27)
General Information	Mode of Delivery
Faculty Requirements	Discipline 1
Faculty Requirements	FSA
Transferability & Gen. Ed. Options	GE Information
Specifications	Methods of Instruction
Specifications	Methods of Evaluation
Specifications	Examples of Primary Texts and References
Specifications	Suggested Reading List
Learning Outcomes and Objectives	CSLOs
Course Outline	Lab Outline
Curriculum Office	Banner Start Term (202122)
Curriculum Office	Banner Division
Curriculum Office	Catalog Term (21-22)
Curriculum Office	5 Year Revision Year (2021)
Curriculum Office	Effective Quarter
Curriculum Office	Effective Year (2021)
Curriculum Office	Course Status Code

Section	Changed field
Curriculum Office	Banner Department
Curriculum Office	Course Level
Curriculum Office	College Code
Curriculum Office	CTE Status
Curriculum Office	Emergency Approval
Curriculum Office	Repeat Status (N = Not Repeatable; T = Repeatable for Max Times Only; B = Repeatable for Max Times/Units; U = Repeatable for Max Units Only; Y = Yearly Repeatable Restriction)
Curriculum Office	Repeat Type (N = Non-repeatable Credit; A = Activity/Other Repeatable; F = Family Non-repeatable Credit; G = Family Activity/Other Repeatable; L = Legally Mandated Training)
Curriculum Office	Noncredit Enhanced Funding Indicator
Curriculum Office	In Service Indicator
Curriculum Office	Sports/Physical Education Course Indicator
Curriculum Office	COA Code
Curriculum Office	Fund Code
Curriculum Office	Organization Code
Curriculum Office	Account Code
Curriculum Office	Program Code
Curriculum Office	Percent
Curriculum Office	Print/No Print to Catalog
Summary of Revisions	Basic Course Information
Summary of Revisions	Specifications
Summary of Revisions	Outline
B-Matrix Form	Objective 1: Analyze a variety of college-level texts with a focus predominantly on expository and argumentative writing.

Section	Changed field
B-Matrix Form	Objective 2: Develop analytical ideas and topics for essays.
B-Matrix Form	Objective 3: Compose and support thesis statements for analytical essays.
B-Matrix Form	Objective 4: Develop clear sequential relationship between central argument/controlling idea and supporting ideas in writing.
De Anza GE Form	Criteria 1: Present core concepts and scope that define the discipline. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
De Anza GE Form	Criteria 2: Foster oral and written communication and collaborative exercises. Note that this criteria has three separate pieces: oral communication, written communication, and collaborative exercises. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
De Anza GE Form	Criteria 3: Stimulate critical thinking. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
De Anza GE Form	Criteria 4: Include diverse perspectives and contributions in the discipline such as: gender, culture, values, and/or societal perspectives. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
De Anza GE Form	Criteria 5: Provide global and historical context. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
De Anza GE Form	Criteria 6: Use real-world or hands-on applications that will provide a context for the concepts being discussed. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)
Comments	Stage 5: SLO Coordinator
Comments	Stage 7: Content Review Matrix Liaison

Section	Changed field
Course Justification	Course Justification
CTE Course	Is this a CTE (Career Technical Education) course?
Honors/Non-honors Course	Is this an honors/non-honors course?
Mirrored Credit/Noncredit Course	Is this a mirrored credit/noncredit course?
Cross-listed Course	Is this a cross-listed course?

General Information

Changed	Field	Current Version	Proposed Version
❗	**Faculty Initiator**	• Erik Woodbury	• Zuleyha Yuksek • Deming, Chris
	Course ID (CB01A and CB01B)	PHYSD002A	PHYSD002A
	Course Control Number	CCC000264424	CCC000264424
❗	**Course Title (CB02)**	General Introductory Physics	General ~~Introductory Physics~~ <u>Physics I</u>
	Short Course Title	GEN INTROD PHYSICS	GEN INTROD PHYSICS
	TOP Code (CB03)	1902.00	1902.00 Physics, General
	CIP Code	Physics, General	40.0801 Physics, General
	Department	PHYS - Physics	PHYS - Physics
❗	**Effective Term**	Fall 2023	Fall ~~2023~~ <u>2025</u>
	SAM Priority Code (CB09)	Non-Occupational	Non-Occupational

Changed	Field	Current Version	Proposed Version
	Course Description	An elementary study of the basic physical laws describing the motion of bodies. Includes the study of oscillations, waves, and sound. Applications to everyday physical phenomena in problem solving using verbal logic, critical thinking, and mathematics. In the laboratory, explore experimental scientific procedures by comparing theoretical models to classic experiments using standard measurement techniques, basic uncertainty analysis, and graphical interpretations of data.	An elementary study of the basic physical laws describing the motion of bodies. Includes the study of oscillations, waves, and sound. Applications to everyday physical phenomena in problem solving using verbal logic, critical thinking, and mathematics. In the laboratory, explore experimental scientific procedures by comparing theoretical models to classic experiments using standard measurement techniques, basic uncertainty analysis, and graphical interpretations of data.
❗	Course Type (CB27)	No value	• Lower Division
❗	Mode of Delivery	No value	• In person ONLY

Faculty Requirements

Changed	Field	Current Version	Proposed Version
❗	Discipline 1	No value	• Physics/Astronomy
	Discipline 2	No value	No value
	Discipline 3	No value	No value
❗	FSA	No value	• FHDA FSA - PHYSICS

Formerly Statement

Changed	Field	Current Version	Proposed Version
	Formerly Statement	No value	

Course Justification

Changed	Field	Current Version	Proposed Version
	Course Justification	This course satisfies the major requirements for biology, architecture, life science majors. It satisfies De Anza GE, CSUGE and IGETC. It satisfies the Liberal Arts A.A. Degree, Science, Math and Engineering Emphasis. It is UC and CSU transferable. PHYS D002A focuses on Classical Mechanics.	This course satisfies the ~~major requirements for biology, architecture, life science majors. It satisfies De Anza GE, CSUGE and IGETC. It satisfies the~~ Liberal Arts A.A. Degree, Science, Math and Engineering Emphasis. It is UC and CSU transferable. ~~PHYS D002A~~ <u>This course</u> focuses on Classical Mechanics.

Stand-Alone Statement

Changed	Field	Current Version	Proposed Version
	Stand-Alone Statement	No value	

Course Philosophy

Changed	Field	Current Version	Proposed Version
	Course Philosophy	No value	

Foothill Equivalency

Changed	Field	Current Version	Proposed Version
	Foothill Faculty Consultation Name	No value	
	Foothill Course ID	No value	

Changed	Field	Current Version	Proposed Version
	Does the course have a Foothill equivalent?	No	No

CTE Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a CTE (Career Technical Education) course?**	No value	<u>No</u>

Honors/Non-honors Course

Changed	Field	Current Version	Proposed Version
❗	**Is this an honors/non-honors course?**	No value	<u>No</u>

Mirrored Credit/Noncredit Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a mirrored credit/noncredit course?**	No value	<u>No</u>

Cross-listed Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a cross-listed course?**	No value	<u>No</u>

More Options

Changed	Field	Current Version	Proposed Version
	Basic Skill Status (CB08)	Course is not a basic skills course.	Course is not a basic skills course.
	Course Prior To College Level	Not applicable.	Not applicable.
	Course Special Class Status (CB13)	Course is not a special class.	Course is not a special class.
	Course Support Status (CB26)	Course is not a support course	Course is not a support course
	Repeat Limit	0	0
	Grade Options	• Letter Grade • Pass/No Pass	• Letter Grade • Pass/No Pass
	Allow Students to Gain Credit by Exam/Challenge	☐	☐
	Repeatability Statement	No value	

Associated Programs

Changed	Field	Current Version	Proposed Version
	Course is part of a program		

Associated Program	Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Environmental Science for Transfer (In Development)
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Environmental Science for Transfer (In Development)
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Associate in Science in Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Associate in Science in Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	CSU GE
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	CSU GE
Award Type	Certificate of Achievement-Advanced (COA-A)

Associated Program	CSU GE

Associated Program	CSU GE

Changed	Field	Current Version	Proposed Version

Award Type	Certificate of Achievement-Advanced (COA-A)	**Award Type**	Certificate of Achievement-Advanced (COA-A)

Associated Program	CSU GE	**Associated Program**	CSU GE
Award Type	Certificate of Achievement-Advanced (COA-A)	**Award Type**	Certificate of Achievement-Advanced (COA-A)

Associated Program	IGETC	**Associated Program**	IGETC
Award Type	Certificate of Achievement-Advanced (COA-A)	**Award Type**	Certificate of Achievement-Advanced (COA-A)

Associated Program	IGETC	**Associated Program**	IGETC
Award Type	Certificate of Achievement-Advanced (COA-A)	**Award Type**	Certificate of Achievement-Advanced (COA-A)

Associated Program	IGETC	**Associated Program**	IGETC
Award Type	Certificate of Achievement-Advanced (COA-A)	**Award Type**	Certificate of Achievement-Advanced (COA-A)

Associated Program	Biological Sciences	**Associated Program**	Biological Sciences
Award Type	Associate in Science (A.S.) Degree	**Award Type**	Associate in Science (A.S.) Degree

Associated Program	Biological Sciences	**Associated Program**	Biological Sciences

Changed	Field	Current Version	Proposed Version
	Award Type	Associate in Science (A.S.) Degree	**Award Type** Associate in Science (A.S.) Degree
	Associated Program	Liberal Arts (Science, Math and Engineering Emphasis)	**Associated Program** Liberal Arts (Science, Math and Engineering Emphasis)
	Award Type	Associate in Arts (A.A.) Degree	**Award Type** Associate in Arts (A.A.) Degree
	Associated Program	Liberal Arts (Science, Math and Engineering Emphasis)	**Associated Program** Liberal Arts (Science, Math and Engineering Emphasis)
	Award Type	Associate in Arts (A.A.) Degree	**Award Type** Associate in Arts (A.A.) Degree
	Associated Program	Liberal Arts (Science, Math and Engineering Emphasis)	**Associated Program** Liberal Arts (Science, Math and Engineering Emphasis)
	Award Type	Associate in Arts (A.A.) Degree	**Award Type** Associate in Arts (A.A.) Degree

Transferability & Gen. Ed. Options

Changed	Field	Current Version	Proposed Version
	Transfer Status (CB05)	Transferable to both UC and CSU	Transferable to both UC and CSU
	Course General Education Status (CB25)	Y	Y

Changed	Field	Current Version	Proposed Version
	Transfer Status	Approved	Approved
❗	**GE Information**		

System/Institution	De Anza GE
Area(s)	• 2GBX - Approved.
-	No value

System/Institution	De Anza GE
Area(s)	• 2GBX - Approved.
-	No value

System/Institution	C-ID
Area(s)	• PHYS - Approved.
-	PHYS D002A & PHYS D002B & PHYS D002C required for C-ID PHYS 100 S

System/Institution	C-ID
Area(s)	• PHYS - Approved.
-	PHYS D002A & PHYS D002B & PHYS D002C required for C-ID PHYS 100 S

System/Institution	IGETC
Area(s)	• IG5A - Approved. • IG5C - Approved.
-	No value

System/Institution	Cal-GETC
Area(s)	• CA5A - Approved. • CA5C - Approved.
-	No value

System/Institution	CSU GE
Area(s)	• CGB1 - Approved. • CGB3 - Approved.
-	No value

Weekly Student Hours - Profile Name: Default Profile

Changed	Field	Current Version	Proposed Version
	Lecture Hours - In Class	4	4
	Lecture Hours - Out of Class	8	8
	Laboratory Hours - In Class	3	3
	Laboratory Hours - Out of Class	0	0
	NA Hours - In Class	0	0
	NA Hours - Out of Class	0	0

Course Student Hours - Profile Name: Default Profile

Changed	Field	Current Version	Proposed Version
	Course Duration (Weeks)	12	12
	Hours per unit divisor	36	36
	Total Student Learning Hours	180	180
	Lecture Hours - Course In-Class (Contact) per Term	48	48

Changed	Field	Current Version	Proposed Version
	Lecture Hours - Course Out-of-Class per Term	96	96
	Laboratory Hours - Course In-Class (Contact) per Term	36	36
	Laboratory Hours - Course Out-of-Class per Term	0	0
	NA Hours - Course In-Class (Contact) per Term	0	0
	NA Hours - Course Out-of-Class per Term	0	0
	Total - Course In-Class (Contact) Hours	84	84
	Total - Course Out-of-Class Hours	96	96
	Total Credit Units - Minimum Credit Units	5	5
	Total Credit Units - Maximum Credit Units	5	5

Speciality Hours

Changed	Field	Current Version	Proposed Version
	Speciality Hours	No value	No value

Credit / Non-Credit Options

Changed	Field	Current Version	Proposed Version
	COURSE CLASSIFICATION STATUS	Credit Course.	Credit Course.
	Course Credit Status (CB04)	Credit - Degree Applicable	Credit - Degree Applicable
	Course Non Credit Category (CB22)	Credit Course.	Credit Course.
	Funding Agency Category (CB23)	Not Applicable.	Not Applicable.
	Cooperative Work Experience Education Status (CB10)	☐	☐
	Variable Credit Course	☐	☐

Credit Units

Changed	Field	Current Version	Proposed Version
	Course Duration (Weeks)	12	12
	Total Lecture Hours per Term	144	144

Changed	Field	Current Version	Proposed Version
	Total Laboratory Hours per Term	36	36
	Total Contact Hours per Term	-	0
	Total Credit Units	5	5
	Minimum Credit Units	5	5
	Maximum Credit Units	5	5

SKIP

Changed	Field	Current Version	Proposed Version
	SKIP	No Value	No Value

Specifications

Changed	Field	Current Version	Proposed Version

⊘ **Methods of Instruction**

Methods of Instruction		Methods of Instruction	
Methods of Instruction	Lecture and visual aids Discussion and problem solving performed in class Quiz and examination review performed in class Laboratory experience which involve students in formal exercises of data collection and analysis Laboratory discussion sessions and quizzes that evaluate the proceedings weekly laboratory exercises	Methods of Instruction	Lecture and visual aids Discussion and problem solving performed in class Quiz and examination review performed in class Laboratory experience which involve students in formal exercises of data collection and analysis Laboratory discussion sessions and quizzes that evaluate the proceedings weekly laboratory exercises

Assignments

Current Version	Proposed Version
1. Daily and weekly readings from the text 2. Weekly readings from the laboratory manual 3. Weekly written assignments from the text and lectures 4. Written laboratory records during each week of lab	1. Daily and weekly readings from the text 2. Weekly readings from the laboratory manual 3. Weekly written assignments from the text and lectures 4. Written laboratory records during each week of lab

Changed	Field	Current Version	Proposed Version
❗	Methods of Evaluation	**Methods of Evaluation**	**Methods of Evaluation** Methods of Evaluation

Changed	Field	Current Version		Proposed Version	
		Methods of Evaluation	1. The required readings and assignments will be evaluated through quantitative problem-solving style homework questions, hand-written verbal answers to quizzes involving lucid sentence constructions, and detailed,clearly explained mathematical solutions to exam problems. 2. Laboratory quantitative-style quizzes involving calculations from measurements taken and/or periodic review and critique of laboratory notebooks. 3. Exams are objective written tests to demonstrate the student's understanding of the course material. 4. A laboratory based final examination involving	**Methods of Evaluation**	1. The required readings and assignments will be evaluated through quantitative problem-solving style homework questions, hand-written verbal answers to quizzes involving lucid sentence constructions, and detailed,clearly explained mathematical solutions to exam problems. 2. Laboratory quantitative-style quizzes involving calculations from measurements taken and/or periodic review and critique of laboratory notebooks. 3. Exams are objective written tests to demonstrate the student's understanding of the course material. 4. A laboratory based final examination involving

Changed	Field	Current Version	Proposed Version
		"hands on" practical evaluations demonstrating the understanding of the learning outcomes listed in the student learning outcomes section. 5. A two hour comprehensive lecture final that includes the testing of verbal and conceptual understanding as well as mathematical and computational competency with respect to the theoretical basis and problem solving aspects of the class. The comprehensive final will test the overall understanding of the learning outcomes listed in the student learning outcomes section.	"hands on" practical evaluations demonstrating the understanding of the learning outcomes listed in the student learning outcomes section. 5. A two hour comprehensive lecture final that includes the testing of verbal and conceptual understanding as well as mathematical and computational competency with respect to the theoretical basis and problem solving aspects of the class. The comprehensive final will test the overall understanding of the learning outcomes listed in the student learning outcomes section.

Changed	Field	Current Version	Proposed Version

Essential Student Materials/Essential College Facilities

Essential Student Materials:
- Laboratory notebook, lab exercise book, ruler, scientific calculator

Essential College Facilities:
- Physics laboratory

Essential Student Materials:
- Laboratory notebook, lab exercise book, ruler, scientific calculator

Essential College Facilities:
- Physics laboratory

❗ **Examples of Primary Texts and References**

Current Version

Title	No value
Author	*Halliday, Resnick, and Walker, "Fundamentals of Physics", 10th edition, Wiley, 2013.
Publisher	No value
Date/Edition	No value
ISBN	No value

Title	No value
Author	Dickson/Newton., "Physics 2A Laboratory Exercises", De Anza Printing Services, 2010.
Publisher	No value
Date/Edition	No value
ISBN	No value

Proposed Version

Title	Fundamentals of Physics
Author	David Halliday, Robert Resnick, Jearl Walker
Publisher	Wiley
Date/Edition	2021 / 12th edition
ISBN	978-1-119-80112-2

Title	Physics 2A Laboratory Exercises
Author	Dickson / Newton
Publisher	De Anza Printing Services
Date/Edition	2010
ISBN	No value

Changed	Field	Current Version	Proposed Version
❗	**Suggested Reading List**		No value

Reading List	James S.Walker, "Physics", 4th edition, Pearson, 2009.
May include, but are not limited to	No value

Learning Outcomes and Objectives

Changed	Field	Current Version	Proposed Version
	Course Objectives	- Analyze physical situations and solve problems in one dimensional kinematics. - Examine vector methods as applicable to physical situations. - Analyze physical situations in two dimensions and solve kinematical problems associated with them. - Examine Newton's laws of motion and solve problems associated with them. - Explore the concepts of work, energy, and energy conservation. - Investigate momentum and momentum conservation. - Discuss rotational kinematics and dynamics - Analyze the equilibrium of rigid bodies. - Study and discuss vibrations and waves. - Explore the properties of sound. - Examine the success of mechanics from its European origins to its eventual global influence as a paradigm transcending any particular cultural perspective.	- Analyze physical situations and solve problems in one dimensional kinematics. - Examine vector methods as applicable to physical situations. - Analyze physical situations in two dimensions and solve kinematical problems associated with them. - Examine Newton's laws of motion and solve problems associated with them. - Explore the concepts of work, energy, and energy conservation. - Investigate momentum and momentum conservation. - Discuss rotational kinematics and dynamics - Analyze the equilibrium of rigid bodies. - Study and discuss vibrations and waves. - Explore the properties of sound. - Examine the success of mechanics from its European origins to its eventual global influence as a paradigm transcending any particular cultural perspective.

Changed	Field	Current Version	Proposed Version

| | **CSLOs** | | |

CSLOs	Critically examine new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of mechanics.
Expected SLO Performance	0.0

CSLOs	Examine critically new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of mechanics.
Expected SLO Performance	0.0

CSLOs	Gain confidence in taking precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories.
Expected SLO Performance	0.0

CSLOs	Take precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories.
Expected SLO Performance	0.0

Course Outline

Changed	Field	Current Version	Proposed Version

	Course Content	1. Analyze physical situations and solve problems in one dimensional kinematics.
		   1. Discuss the basic properties of motion.
		      1. Define and discuss displacement.
		      2. Define and discuss velocity.
		      3. Define and discuss acceleration.
		   2. Explain, derive, and apply the kinematical formulas to physical situations.
		2. Examine vector methods as applicable to physical situations.
		   1. Define the polar form and component forms of vectors.
		   2. Examine the addition and subtraction of vectors.
		3. Analyze physical situations in two dimensions and solve kinematical problems associated with them.
		   1. Apply vectors to problem solving for relative velocity.
		   2. Apply vectors to problem solving for projectile motion problems.
		4. Examine Newton's laws of motion and solve problems associated with them.
		   1. Define mass and inertia.
		   2. Examine and discuss force.
		   3. Discuss and examine Newton's three laws of motion.
		   4. Apply Newton's laws to problem solving.
		5. Explore the concepts of work, energy, and energy conservation.
		   1. Define and discuss work.
		   2. Define and discuss the forms of energy.
			1. Analyze physical situations and solve problems in one dimensional kinematics.
			   1. Discuss the basic properties of motion.
			      1. Define and discuss displacement.
			      2. Define and discuss velocity.
			      3. Define and discuss acceleration.
			   2. Explain, derive, and apply the kinematical formulas to physical situations.
			2. Examine vector methods as applicable to physical situations.
			   1. Define the polar form and component forms of vectors.
			   2. Examine the addition and subtraction of vectors.
			3. Analyze physical situations in two dimensions and solve kinematical problems associated with them.
			   1. Apply vectors to problem solving for relative velocity.
			   2. Apply vectors to problem solving for projectile motion problems.
			4. Examine Newton's laws of motion and solve problems associated with them.
			   1. Define mass and inertia.
			   2. Examine and discuss force.
			   3. Discuss and examine Newton's three laws of motion.
			   4. Apply Newton's laws to problem solving.
			5. Explore the concepts of work, energy, and energy conservation.
			   1. Define and discuss work.
			   2. Define and discuss the forms of energy.

Changed	Field	Current Version	Proposed Version

		3. Discuss the work energy theorem and apply it to problem solving.
		6. Investigate momentum and momentum conservation.
		  1. Define and discuss momentum.
		  2. Define and discuss Newton's second law in momentum form.
		    1. Examine the conservation of momentum.
		    2. Analyze the use of impluse in problem solving.
		  3. Apply momentum theory to problems involving collisions.
		7. Discuss rotational kinematics and dynamics
		  1. Define the rotational motion parameters of angular velocity and angular acceleration.
		  2. Examine and discuss the rotational kinematical formulas.
		  3. Assess rotational dynamics.
		    1. Define torque.
		    2. Examine Newton's second law for rotation.
		    3. Apply the conservation of angular momentum to problem solving.
		8. Analyze the equilibrium of rigid bodies.
		  1. Define and discuss the center of mass.
		  2. Examine the equilibrium of rigid and statics applications in problem solving.
		9. Study and discuss vibrations and waves.
			3. Discuss the work energy theorem and apply it to problem solving.
			6. Investigate momentum and momentum conservation.
			  1. Define and discuss momentum.
			  2. Define and discuss Newton's second law in momentum form.
			    1. Examine the conservation of momentum.
			    2. Analyze the use of impluse in problem solving.
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			  1. Define the rotational motion parameters of angular velocity and angular acceleration.
			  2. Examine and discuss the rotational kinematical formulas.
			  3. Assess rotational dynamics.
			    1. Define torque.
			    2. Examine Newton's second law for rotation.
			    3. Apply the conservation of angular momentum to problem solving.
			8. Analyze the equilibrium of rigid bodies.
			  1. Define and discuss the center of mass.
			  2. Examine the equilibrium of rigid and statics applications in problem solving.
			9. Study and discuss vibrations and waves.

Changed	Field	Current Version	Proposed Version

		1. Examine and discuss the defining characteristics of oscillating systems.
		2. Analyze the dynamics of simple harmonic motion.
		3. Analyze and discuss the energy properties of simple harmonic motions.
		4. Examine wave motion and the types of waves.
		10. Explore the properties of sound.
		  1. Discuss and define the sources of sound waves.
		  2. Define wave refraction.
		  3. Examine interference and diffraction.
		  4. Discuss the Doppler effect.
		11. Examine the success of mechanics from its European origins to its eventual global influence as a paradigm transcending any particular cultural perspective.
		  1. Address contributions to physics from people from diverse cultural backgrounds including, as appropriate, women's contributions to the field and non-European contributions.
		  2. Analyze the failure of the Aristotelian model of the physical world
		  3. Appraise the conflict between Galileo's insights and the Italian Inquisition's opposition to them
		  4. Assess the failure of the Ptolemaic model and its replacement by the Copernican model
			1. Examine and discuss the defining characteristics of oscillating systems.
			2. Analyze the dynamics of simple harmonic motion.
			3. Analyze and discuss the energy properties of simple harmonic motions.
			4. Examine wave motion and the types of waves.
			10. Explore the properties of sound.
			  1. Discuss and define the sources of sound waves.
			  2. Define wave refraction.
			  3. Examine interference and diffraction.
			  4. Discuss the Doppler effect.
			11. Examine the success of mechanics from its European origins to its eventual global influence as a paradigm transcending any particular cultural perspective.
			  1. Address contributions to physics from people from diverse cultural backgrounds including, as appropriate, women's contributions to the field and non-European contributions.
			  2. Analyze the failure of the Aristotelian model of the physical world
			  3. Appraise the conflict between Galileo's insights and the Italian Inquisition's opposition to them
			  4. Assess the failure of the Ptolemaic model and its replacement by the Copernican model

Changed	Field	Current Version	Proposed Version
	Lab Component in this Course	Yes	Yes

❗	**Lab Outline**	1. Measurement and Uncertainties
		2. Density
		3. Projectile motion
		4. Friction
		5. The Atwood's machine
		6. Centripetal acceleration
		7. The slingshot
		8. Ballistic pendulum
		9. The pendulum
		10. Oscillations and the mass on a spring
		11. Analyze data in the laboratory using graphical, statistical, and computer based techniques.
		    1. Take accurate measurements with confidence and understand the uncertainties associated with them.
		    2. Analyze data to induce scientific conclusions.
		    3. Collaborate with others as a team to produce collective results.
			1. Measurement and Uncertainties
			2. Density
			3. Projectile motion
			4. Friction
			5. The Atwood's machine
			6. Centripetal acceleration
			7. The slingshot
			8. Ballistic pendulum
			9. The pendulum
			10. Oscillations and the mass on a spring
			11. Analyze data in the laboratory using graphical, statistical, and computer based techniques.
			    1. Take accurate measurements with confidence and understand the uncertainties associated with them.
			    2. Analyze data to induce scientific conclusions.
			    3. Collaborate with others as a team to produce collective results.
			    4. Discuss and analyze results with the lab group

Req/Adv

Changed	Questions	Current Version	Proposed Version
	Prerequisite(s):	MATH D001A or MATH D01AH (may be taken concurrently)	MATH D001A or MATH D01AH (may be taken concurrently)
	Corequisite(s):	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Advisory(ies):	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005.	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005.
	Advisory(ies) - Other:	PHYS D050.	PHYS D050.
	Limitation(s) on Enrollment:	No Value	No Value
	Limitation(s) on Enrollment - Other:	No Value	No Value
	Entrance Skills(s):	No Value	No Value
	Entrance Skill(s) - Other:	No Value	No Value
	General Course Statement(s):	(See general education pages for the requirements this course meets.)	(See general education pages for the requirements this course meets.)
	General Course Statement(s) - Other:	No Value	No Value

Curriculum Office

Changed	Questions	Current Version	Proposed Version
❗	**Banner Start Term (202122)**	202122	No Value
❗	**Banner Division**	2PS	No Value
❗	**Catalog Term (21-22)**	23-24	No Value
❗	**5 Year Revision Year (2021)**	2018	No Value

Changed	Questions	Current Version	Proposed Version
❗	**Effective Quarter**	Fall	No Value
❗	**Effective Year (2021)**	2023	No Value
	Sort ID (00 < 10; 0 < 100)	PHYS 002A	PHYS 002A
	Course Status	Non-substantial	Non-substantial
❗	**Course Status Code**	A	No Value
❗	**Banner Department**	PHYS	No Value
❗	**Course Level**	DU	No Value
❗	**College Code**	DA	No Value
	Course Characteristics	NA	NA
	Cross-Listed/Related Course Information	NA	NA
	Cross-Listed/Related Course ID's	No Value	No Value
❗	**CTE Status**	No	No Value
	DL Approval Date (MM/DD/YYYY)	No Value	No Value
	Hybrid Approval Date (MM/DD/YYYY)	No Value	No Value
❗	**Emergency Approval**	No	No Value

Changed	Questions	Current Version	Proposed Version
❗	**Repeat Status (N = Not Repeatable; T = Repeatable for Max Times Only; B = Repeatable for Max Times/Units; U = Repeatable for Max Units Only; Y = Yearly Repeatable Restriction)**	N	No Value
❗	**Repeat Type (N = Non-repeatable Credit; A = Activity/Other Repeatable; F = Family Non-repeatable Credit; G = Family Activity/Other Repeatable; L = Legally Mandated Training)**	N	No Value
❗	**Noncredit Enhanced Funding Indicator**	N	No Value
❗	**In Service Indicator**	N	No Value
❗	**Sports/Physical Education Course Indicator**	N	No Value
❗	**COA Code**	C	No Value
❗	**Fund Code**	114000	No Value

Changed	Questions	Current Version	Proposed Version
❗	**Organization Code**	235003	No Value
❗	**Account Code**	1320	No Value
❗	**Program Code**	190200	No Value
❗	**Percent**	100	No Value
	Curriculum Office Notes	• Requisite change appr. 1/17/23 (effect. F23).-cc	• Requisite change appr. 1/17/23 (effect. F23).-cc
❗	**Print/No Print to Catalog**	Yes	No Value
	Checklist	No Value	No Value

Summary of Revisions

Changed	Questions	Current Version	Proposed Version
❗	**Basic Course Information**	No Value	Course justification update
	Units and Hours	No Value	No Value
❗	**Specifications**	No Value	Updated textbooks and references to reflect current publications
❗	**Outline**	No Value	Added lab topic(s)
	Other	No Value	No Value

Blue Form

Changed	Questions	Current Version	Proposed Version
	For changes to the units and hours tab; 1) Contact the Curriculum Office at curriculum@fhda.edu with the course information changes; and 2) address items 1-3 below. Please be aware that load factors and seat counts are assigned based on established, negotiated values.	No Value	No Value
	1. Is the unit(s) change required for articulation?	No Value	No Value
	2. If the course is UC or CSU transferable, identify one UC or CSU campus with the same unit value requested and copy and paste the catalog description of the course.	No Value	No Value
	3. Identify the areas in the course outline of record that justify the unit(s) and/or hour(s) change.	No Value	No Value
	Office Use ONLY: For a REVISION, state the existing unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Office Use ONLY: For a REVISION, state the new unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value
	Office Use ONLY: For NEW, state the unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value

A-Matrix Form

Changed	Questions	Current Version	Proposed Version
	EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Analyze college level texts and discourse that are culturally and rhetorically diverse.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 2: Compose essays drawn from personal experience and assigned texts.	No Value	No Value
	Objective 3: Utilize MLA guidelines to format essays, cite sources, and compile a works cited page.	No Value	No Value
	Objective 4: Create syntactically varied sentences that are free of mechanical errors.	No Value	No Value
	Objective 5: Distinguish, compare, and evaluate the multiplicity and ambiguity of perspectives.	No Value	No Value

B-Matrix Form

Changed	Questions	Current Version	Proposed Version
	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
❗	**Objective 1: Analyze a variety of college-level texts with a focus predominantly on expository and argumentative writing.**	No Value	Course Objective K1-K4 : Examine the success of mechanics from its European origins to its eventual global influence as a paradigm transcending any particular cultural perspective.
❗	**Objective 2: Develop analytical ideas and topics for essays.**	No Value	Assignment A : Daily and weekly readings from the text Assignment B: Weekly readings from the laboratory manual
❗	**Objective 3: Compose and support thesis statements for analytical essays.**	No Value	Method of Evaluation B: Laboratory quantitative-style quizzes involving calculations from measurements taken and/or periodic review and critique of laboratory notebooks.
❗	**Objective 4: Develop clear sequential relationship between central argument/controlling idea and supporting ideas in writing.**	No Value	Assignment C: Weekly written assignments from the text and lectures
	Objective 5: Identify and practice writing for different audiences and purposes.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 6: Develop and demonstrate a variety of rhetorical strategies to develop strong analysis in essays.	No Value	No Value
	Objective 7: Demonstrate writing as a multi-step process including attention to planning and revision.	No Value	No Value
	Objective 8: Practice composing organized, developed, analytical essays that increase in complexity.	No Value	No Value
	Objective 9: Demonstrate appropriate grammar usage and mechanics.	No Value	No Value

C-Matrix Form

Changed	Questions	Current Version	Proposed Version
	ESL D261. and ESL D265., or ESL D461. and ESL D465., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Create compositions about fiction and non-fiction texts from many cultural and social perspectives in a variety of genres.	No Value	No Value
	Objective 2: Compose a focused, purposeful, developed paper of 500 words or more that engages with, responds to, or is inspired by written or visual texts.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 3: Produce written work using a cyclical process of multiples drafts and revisions.	No Value	No Value
	Objective 4: Demonstrate the ability to include a variety of sentence structures in writing.	No Value	No Value
	Objective 5: Edit compositions to correct errors in the major conventions of Standard Written English.	No Value	No Value

D-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Intermediate algebra or equivalent (or higher), or appropriate placement beyond intermediate algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Plan, implement, and assess work cycles, at the problem, lesson, module, and course level, to develop self-efficacy through the practice of self-regulated learning.	No Value	No Value
	Objective 2: Investigate the use of mathematics in real world.	No Value	No Value
	Objective 3: Explore functions.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 4: Develop linear function models.	No Value	No Value
	Objective 5: Use systems of two linear equations to solve real world problems.	No Value	No Value
	Objective 6: Use linear inequalities in one variable to solve real world problems.	No Value	No Value
	Objective 7: Examine exponential expressions and develop exponential function models.	No Value	No Value
	Objective 8: Examine logarithmic expressions and develop logarithmic function models.	No Value	No Value
	Objective 9: Develop quadratic function models to solve problems.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 10: Investigate the characteristics of rational expressions.	No Value	No Value
	Objective 11: Develop skills to work with radical expressions.	No Value	No Value

E-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Elementary algebra or equivalent (or higher), or appropriate placement beyond elementary algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 1: Develop, throughout the course as applicable, systematic problem-solving methods.	No Value	No Value
	Objective 2: Explore the function concept algebraically, numerically, verbally and graphically.	No Value	No Value
	Objective 3: Explore the graphical and numerical characteristics of linear relationships and describe their meaning in the context of a problem.	No Value	No Value
	Objective 4: Develop linear function models to solve problems.	No Value	No Value
	Objective 5: Use systems of two linear equations to solve real-world problems.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 6: Explore the graphical and numerical characteristics of quadratic relationships and describe their meaning in the context of a problem.	No Value	No Value
	Objective 7: Develop quadratic function models to solve problems.	No Value	No Value
	Objective 8: Use inequalities to solve real world problems.	No Value	No Value
	Objective 9: Explore arithmetic sequences and series.	No Value	No Value
	Objective 10: Investigate, throughout the course as applicable, how mathematics has developed as a human activity around the world.	No Value	No Value

F-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Pre-algebra or equivalent (or higher), or appropriate placement beyond pre-algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Develop, throughout the course as applicable, systematic problem solving methods.	No Value	No Value
	Objective 2: Solve problems involving arithmetic operations, including fractions, percents and decimals.	No Value	No Value
	Objective 3: Apply the order of operations to evaluate signed numerical expressions.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 4: Solve problems involving operations with signed numbers.	No Value	No Value
	Objective 5: Explore the characteristics and properties of real numbers.	No Value	No Value
	Objective 6: Use estimation to determine approximate solutions and to check the reasonableness of answers.	No Value	No Value
	Objective 7: Explore rates and ratios and use proportions to solve problems.	No Value	No Value
	Objective 8: Explore, as applicable throughout the course, the geometry of mathematical measurements and solve problems involving geometric figures and formulas.	No Value	No Value
Changed	**Questions**	**Current Version**	**Proposed Version**

Changed	Questions	Current Version	Proposed Version
	Objective 9: Explore the use of variables in expressions and evaluate algebraic expressions.	No Value	No Value
	Objective 10: Solve linear equations in one variable numerically and algebraically.	No Value	No Value
	Objective 11: Graph linear relationships on a Cartesian coordinate by plotting ordered pairs.	No Value	No Value
	Objective 12: Investigate, throughout the course as applicable, how mathematics has developed as a human activity around the world.	No Value	No Value

G-Matrix Form

Changed	Questions	Current Version	Proposed Version
	If the requisite does not fall under an A-F Matrix, download the Content Review Matrix G from the Reference Materials, and follow the remaining instructions on the form. If a requisite falling under Matrix G is being removed, provide an explanation as to why.	No Value	No Value

H-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Objective 1: For entrance into a CTE program such as Nursing, AUTO, APRN, etc… list the prerequisite(s) to participate in the program.	No Value	No Value
	Objective 2: For Student Cohorts, such as Honors, Puente, performance groups, intercollegiate teams, Special Projects course, etc… list the prerequisite(s) to participate in the cohort.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 3: For Prerequisites based on Government/Licensing/Certification Regulations, or legal requirements, cite the regulation that mandates a prerequisite or attach a copy of it to this form.	No Value	No Value
	Objective 4: For Prerequisites based on Health and Safety, describe the specific skills, concepts, and information without which the students would create a hazard to themselves or those around them. Also describe how students will meet those skills, i.e. such as a course.	No Value	No Value

De Anza GE Form

Changed	Questions	Current Version	Proposed Version
❗	**Criteria 1: Present core concepts and scope that define the discipline. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	Course Outline A1-A2 : Analyze physical situations and solve problems in one dimensional kinematics. Course Outline C1-C2 : Analyze physical situations in two dimensions and solve kinematical problems associated with them. Course Outline D1- D4 : Examine Newton's laws of motion and solve problems associated with them. Course Outline E1-E3: Explore the concepts of work, energy, and energy conservation. Course Outline G1-G3: Discuss rotational kinematics and dynamics

Changed	Questions	Current Version	Proposed Version
❗	**Criteria 2: Foster oral and written communication and collaborative exercises. Note that this criteria has three separate pieces: oral communication, written communication, and collaborative exercises. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	Lab Course Outline K4: Discuss and analyze results with the lab group Method of Evaluation E - A two hour comprehensive lecture final that includes the testing of verbal and conceptual understanding as well as mathematical and computational competency with respect to the theoretical basis and problem solving aspects of the class. The comprehensive final will test the overall understanding of the learning outcomes listed in the student learning outcomes section. Assignment C - Weekly written assignments from the text and lectures Method of Evaluation A - The required readings and assignments will be evaluated through quantitative problem-solving style homework questions, hand-written verbal answers to quizzes involving lucid sentence constructions, and detailed, clearly explained mathematical solutions to exam problems. Lab Course Outline K3: Collaborate with others as a team to produce collective results.
❗	**Criteria 3: Stimulate critical thinking. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	Method of Evaluation B - Laboratory quantitative-style quizzes involving calculations from measurements taken and/or periodic review and critique of laboratory notebooks. Assignment D - Written laboratory records during each week of lab Method of Evaluation A - The required readings and assignments will be evaluated through quantitative problem-solving style homework questions, hand-written verbal answers to quizzes involving lucid sentence constructions, and detailed, clearly explained mathematical solutions to exam problems.

Changed	Questions	Current Version	Proposed Version
❗	**Criteria 4: Include diverse perspectives and contributions in the discipline such as: gender, culture, values, and/or societal perspectives. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	Course Outline K2-K4 : Examine the success of mechanics from its European origins to its eventual global influence as a paradigm transcending any particular cultural perspective. Course Outline K1: Address contributions to physics from people from diverse cultural backgrounds including, as appropriate, women's contributions to the field and non-European contributions.
❗	**Criteria 5: Provide global and historical context. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	Course Outline K1-K4 : Examine the success of mechanics from its European origins to its eventual global influence as a paradigm transcending any particular cultural perspective.

Changed	Questions	Current Version	Proposed Version
❗	**Criteria 6: Use real-world or hands-on applications that will provide a context for the concepts being discussed. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)**	No Value	Method of Evaluation D - A laboratory based final examination involving "hands on" practical evaluations demonstrating the understanding of the learning outcomes listed in the student learning outcomes section.

De Anza GE - ESGC Form

Changed	Questions	Current Version	Proposed Version
	Criteria 1: Explain the interconnectivity of economic prosperity, social equity and environmental quality.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Criteria 2: Identify the most serious environmental, equity, and social justice problems globally and locally and explain their underlying causes and possible consequences.	No Value	No Value
	Criteria 3: Explain some significant ways students can make a difference in making a positive impact, locally, at a state level, or globally in making the world more environmentally sustainable and socially just.	No Value	No Value
	Criteria 4: Analyze how the well being of human society is dependent on sustainable social and ecological systems.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Criteria 5: Demonstrate an understanding of how the student's personal activities impact the environment and communities by participating in actions to create a more environmentally sustainable and equitable future.	No Value	No Value

Comments

Changed	Questions	Current Version	Proposed Version
	Stage 2: Department Chair	No Value	No Value
	Stage 3: Division Curriculum Representative	No Value	No Value
	Stage 4: Division Dean	No Value	No Value

Changed	Questions	Current Version	Proposed Version				
❗	**Stage 5: SLO Coordinator**	No Value	**Date**	**Name - Role OR Tab**	**Part - Type of Field Edit**	**Edit**	**Initiator - Indicate "Y" When Completed**
			5/14/2024	Mary Pape - SLO Outcome	CSLO #2 Required	"Gain confidence in ..." is not assessible. Reword. Suggestion: "Take precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories."	

Changed	Questions	Current Version	Proposed Version					

Changed	Questions	Current Version	Date	Tab	Part - Field	Type of Edit	Edit	Initiator - Indicate "Y" When Completed
❗	**Stage 7: Content Review Matrix Liaison**	No Value	**6/24/24**	Matrix G or Req/Adv		Required	Clarify whether or not Math 1A can be taken concurrently (as stated in your Req/Adv tab) or must be taken prior to (as stated in your Matrix G)	Math 1A is prerequisite in both Req/Adv tab and Matrix G. But, Math 1AH is taken concurrently as stated in Req/Adv tab. Please let me know how to update it. Thanks
			6/26/24	Matrix G or Req/Adv		Required	For an OR requisite statement the requisite must be the same for this courses. This means that both Math 1A and Math 1AH must be listed as a prerequisite (must be taken prior) or Math 1A and Math 1AH must be listed as a prerequisite (may be taken concurrently). If you have additional questions, please feel free to email me.	Y
	Stage 8: AVP - Instruction	No Value	No Value					
	Stage 9: Articulation Officer	No Value	No Value					

Changed	Questions	Current Version	Proposed Version
	Stage 11: ESGC Faculty Coordinator	No Value	No Value
	Stage 14: Curriculum Committee	No Value	No Value

Course Administration Codes

Articulation occurs after course approval. The following fields will not show a Proposed Version.

Changed	Field	Current Version
	Curriculum ID	PHYSD002A
	Distance Education Approved	No
	Board of Trustees Approval Date	
	Curriculum Committee Approval Date	
	Time to Next Review	Sep 1, 2023 12:00:00 AM
	External Review Approval Date	Sep 1, 2018 12:00:00 AM
	Course Control Number	CCC000264424

Articulation

Changed	Field	Current Version

Changed	Field	Current Version
	Course Crosswalk CRS-DEPT-NAME	
	Course Crosswalk CRS-NUMBER	

Summary of Changes

Section	Changed field
General Information	Faculty Initiator
General Information	Course Title (CB02)
General Information	Effective Term
General Information	Course Type (CB27)
General Information	Mode of Delivery
Faculty Requirements	Discipline 1
Faculty Requirements	FSA
Specifications	Methods of Instruction
Specifications	Methods of Evaluation
Specifications	Examples of Primary Texts and References
Specifications	Suggested Reading List
Learning Outcomes and Objectives	CSLOs
Curriculum Office	Banner Start Term (202122)
Curriculum Office	Banner Division
Curriculum Office	Catalog Term (21-22)
Curriculum Office	5 Year Revision Year (2021)
Curriculum Office	Effective Quarter
Curriculum Office	Effective Year (2021)
Curriculum Office	Course Status Code
Curriculum Office	Banner Department
Curriculum Office	Course Level
Curriculum Office	College Code
Curriculum Office	CTE Status
Curriculum Office	Emergency Approval
Curriculum Office	Repeat Status (N = Not Repeatable; T = Repeatable for Max Times Only; B = Repeatable for Max Times/Units; U = Repeatable for Max Units Only; Y = Yearly Repeatable Restriction)

Section	Changed field
Curriculum Office	Repeat Type (N = Non-repeatable Credit; A = Activity/Other Repeatable; F = Family Non-repeatable Credit; G = Family Activity/Other Repeatable; L = Legally Mandated Training)
Curriculum Office	Noncredit Enhanced Funding Indicator
Curriculum Office	In Service Indicator
Curriculum Office	Sports/Physical Education Course Indicator
Curriculum Office	COA Code
Curriculum Office	Fund Code
Curriculum Office	Organization Code
Curriculum Office	Account Code
Curriculum Office	Program Code
Curriculum Office	Percent
Curriculum Office	Print/No Print to Catalog
Summary of Revisions	Specifications
B-Matrix Form	Objective 1: Analyze a variety of college-level texts with a focus predominantly on expository and argumentative writing.
B-Matrix Form	Objective 2: Develop analytical ideas and topics for essays.
B-Matrix Form	Objective 3: Compose and support thesis statements for analytical essays.
B-Matrix Form	Objective 4: Develop clear sequential relationship between central argument/controlling idea and supporting ideas in writing.
Comments	Stage 5: SLO Coordinator
Comments	Stage 7: Content Review Matrix Liaison
CTE Course	Is this a CTE (Career Technical Education) course?
Honors/Non-honors Course	Is this an honors/non-honors course?
Mirrored Credit/Noncredit Course	Is this a mirrored credit/noncredit course?
Cross-listed Course	Is this a cross-listed course?

General Information

Changed	Field	Current Version	Proposed Version
❗	**Faculty Initiator**	• Erik Woodbury	• Zuleyha Yuksek • Deming, Chris
	Course ID (CB01A and CB01B)	PHYSD002B	PHYSD002B

Changed	Field	Current Version	Proposed Version
	Course Control Number	CCC000013978	CCC000013978
❗	Course Title (CB02)	General Introductory Physics	General ~~Introductory Physics~~ <u>Physics II</u>
	Short Course Title	GEN INTROD PHYSICS	GEN INTROD PHYSICS
	TOP Code (CB03)	1902.00	1902.00 Physics, General
	CIP Code	Physics, General	40.0801 Physics, General
	Department	PHYS - Physics	PHYS - Physics
❗	Effective Term	Fall 2023	Fall ~~2023~~ <u>2025</u>
	SAM Priority Code (CB09)	Non-Occupational	Non-Occupational
	Course Description	The laws of mechanics applied to those of electricity and magnetism. An introduction to the physical properties of that fundamental quantity called charge. Includes the study of DC and AC circuits and their elementary applications. Concludes with electromagnetic waves. In the laboratory, learn to construct elementary circuits, measure and analyze their properties with electronic equipment including the oscilloscope, and study the behavior of moving charge in magnetic fields.	The laws of mechanics applied to those of electricity and magnetism. An introduction to the physical properties of that fundamental quantity called charge. Includes the study of DC and AC circuits and their elementary applications. Concludes with electromagnetic waves. In the laboratory, learn to construct elementary circuits, measure and analyze their properties with electronic equipment including the oscilloscope, and study the behavior of moving charge in magnetic fields.
❗	Course Type (CB27)	No value	• Lower Division
❗	Mode of Delivery	No value	• In person ONLY

Faculty Requirements

Changed	Field	Current Version	Proposed Version
❗	Discipline 1	No value	• Physics/Astronomy
	Discipline 2	No value	No value
	Discipline 3	No value	No value
❗	FSA	No value	• FHDA FSA - PHYSICS

Formerly Statement

Changed	Field	Current Version	Proposed Version
	Formerly Statement	No value	

Course Justification

Changed	Field	Current Version	Proposed Version
	Course Justification	This course satisfies the major requirements for biology, architecture and life science majors for at least one CSU or UC. It satisfies the Liberal Arts A.A. Degree, Science, Math and Engineering Emphasis. PHYS D002B focuses on Electricity and Magnetism.	This course satisfies the major requirements for biology, architecture and life science majors for at least one CSU or UC. It satisfies the Liberal Arts A.A. Degree, Science, Math and Engineering Emphasis. PHYS D002B focuses on Electricity and Magnetism.

Stand-Alone Statement

Changed	Field	Current Version	Proposed Version
	Stand-Alone Statement	No value	

Course Philosophy

Changed	Field	Current Version	Proposed Version
	Course Philosophy	No value	

Foothill Equivalency

Changed	Field	Current Version	Proposed Version
	Foothill Faculty Consultation Name	No value	
	Foothill Course ID	No value	
	Does the course have a Foothill equivalent?	No	No

CTE Course

Changed	Field	Current Version	Proposed Version
❗	Is this a CTE (Career Technical Education) course?	No value	No

Honors/Non-honors Course

Changed	Field	Current Version	Proposed Version
❗	**Is this an honors/non-honors course?**	No value	<u>No</u>

Mirrored Credit/Noncredit Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a mirrored credit/noncredit course?**	No value	<u>No</u>

Cross-listed Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a cross-listed course?**	No value	<u>No</u>

More Options

Changed	Field	Current Version	Proposed Version
	Basic Skill Status (CB08)	Course is not a basic skills course.	Course is not a basic skills course.
	Course Prior To College Level	Not applicable.	Not applicable.
	Course Special Class Status (CB13)	Course is not a special class.	Course is not a special class.
	Course Support Status (CB26)	Course is not a support course	Course is not a support course
	Repeat Limit	0	0
	Grade Options	• Letter Grade • Pass/No Pass	• Letter Grade • Pass/No Pass
	Allow Students to Gain Credit by Exam/Challenge	☐	☐
	Repeatability Statement	No value	

Associated Programs

Changed	Field	Current Version	Proposed Version
	Course is part of a program	**Associated Program** Biology for Transfer **Award Type** Associate in Science for Transfer (A.S.-T.) Degree	**Associated Program** Biology for Transfer **Award Type** Associate in Science for Transfer (A.S.-T.) Degree
		Associated Program Biology for Transfer **Award Type** Associate in Science for Transfer (A.S.-T.) Degree	**Associated Program** Biology for Transfer **Award Type** Associate in Science for Transfer (A.S.-T.) Degree
		Associated Program Environmental Science for Transfer (In Development) **Award Type** Associate in Science for Transfer (A.S.-T.) Degree	**Associated Program** Environmental Science for Transfer (In Development) **Award Type** Associate in Science for Transfer (A.S.-T.) Degree
		Associated Program Associate in Science in Biology for Transfer **Award Type** Associate in Science for Transfer (A.S.-T.) Degree	**Associated Program** Associate in Science in Biology for Transfer **Award Type** Associate in Science for Transfer (A.S.-T.) Degree
		Associated Program Liberal Arts (Science, Math and Engineering Emphasis) **Award Type** Associate in Arts (A.A.) Degree	**Associated Program** Liberal Arts (Science, Math and Engineering Emphasis) **Award Type** Associate in Arts (A.A.) Degree
		Associated Program Liberal Arts (Science, Math and Engineering Emphasis) **Award Type** Associate in Arts (A.A.) Degree	**Associated Program** Liberal Arts (Science, Math and Engineering Emphasis) **Award Type** Associate in Arts (A.A.) Degree
		Associated Program Liberal Arts (Science, Math and Engineering Emphasis) **Award Type** Associate in Arts (A.A.) Degree	**Associated Program** Liberal Arts (Science, Math and Engineering Emphasis) **Award Type** Associate in Arts (A.A.) Degree
		Associated Program Biological Sciences **Award Type** Associate in Science (A.S.) Degree	**Associated Program** Biological Sciences **Award Type** Associate in Science (A.S.) Degree
		Associated Program Biological Sciences	**Associated Program** Biological Sciences

Changed	Field	Current Version	Proposed Version
	Award Type	Associate in Science (A.S.) Degree	Award Type	Associate in Science (A.S.) Degree

Transferability & Gen. Ed. Options

Changed	Field	Current Version	Proposed Version
	Transfer Status (CB05)	Transferable to both UC and CSU	Transferable to both UC and CSU
	Course General Education Status (CB25)	Y	Y
	Transfer Status	Approved	Approved
	GE Information		

System/Institution	C-ID
Area(s)	• PHYS - Approved.
-	PHYS D002A & PHYS D002B & PHYS D002C required for C-ID PHYS 100 S

System/Institution	C-ID
Area(s)	• PHYS - Approved.
-	PHYS D002A & PHYS D002B & PHYS D002C required for C-ID PHYS 100 S

Weekly Student Hours - Profile Name: Default Profile

Changed	Field	Current Version	Proposed Version
	Lecture Hours - In Class	4	4
	Lecture Hours - Out of Class	8	8
	Laboratory Hours - In Class	3	3
	Laboratory Hours - Out of Class	0	0
	NA Hours - In Class	0	0
	NA Hours - Out of Class	0	0

Course Student Hours - Profile Name: Default Profile

Changed	Field	Current Version	Proposed Version
	Course Duration (Weeks)	12	12
	Hours per unit divisor	36	36
	Total Student Learning Hours	180	180
	Lecture Hours - Course In-Class (Contact) per Term	48	48
	Lecture Hours - Course Out-of-Class per Term	96	96
	Laboratory Hours - Course In-Class (Contact) per Term	36	36
	Laboratory Hours - Course Out-of-Class per Term	0	0
	NA Hours - Course In-Class (Contact) per Term	0	0
	NA Hours - Course Out-of-Class per Term	0	0
	Total - Course In-Class (Contact) Hours	84	84
	Total - Course Out-of-Class Hours	96	96
	Total Credit Units - Minimum Credit Units	5	5
	Total Credit Units - Maximum Credit Units	5	5

Speciality Hours

Changed	Field	Current Version	Proposed Version
	Speciality Hours	No value	No value

Credit / Non-Credit Options

Changed	Field	Current Version	Proposed Version
	COURSE CLASSIFICATION STATUS	Credit Course.	Credit Course.
	Course Credit Status (CB04)	Credit - Degree Applicable	Credit - Degree Applicable
	Course Non Credit Category (CB22)	Credit Course.	Credit Course.
	Funding Agency Category (CB23)	Not Applicable.	Not Applicable.
	Cooperative Work Experience Education Status (CB10)	☐	☐
	Variable Credit Course	☐	☐

Credit Units

Changed	Field	Current Version	Proposed Version
	Course Duration (Weeks)	12	12
	Total Lecture Hours per Term	144	144
	Total Laboratory Hours per Term	36	36
	Total Contact Hours per Term	-	0
	Total Credit Units	5	5
	Minimum Credit Units	5	5
	Maximum Credit Units	5	5

SKIP

Changed	Field	Current Version	Proposed Version
	SKIP	No Value	No Value

Specifications

Changed	Field	Current Version	Proposed Version

Methods of Instruction

Methods of Instruction	
Methods of Instruction	Lecture and visual aids Discussion and problem solving performed in class Quiz and examination review performed in class Laboratory experience which involve students in formal exercises of data collection and analysis Laboratory discussion sessions and quizzes that evaluate the proceedings weekly laboratory exercises

Methods of Instruction	Methods of Instruction
Methods of Instruction	Lecture and visual aids Discussion and problem solving performed in class Quiz and examination review performed in class Laboratory experience which involve students in formal exercises of data collection and analysis Laboratory discussion sessions and quizzes that evaluate the proceedings weekly laboratory exercises

Assignments

Current Version:
1. Daily and weekly readings from the text
2. Weekly readings from the laboratory manual
3. Weekly written assignments from the text and lectures
4. Written laboratory records during each week of lab

Proposed Version:
1. Daily and weekly readings from the text
2. Weekly readings from the laboratory manual
3. Weekly written assignments from the text and lectures
4. Written laboratory records during each week of lab

Changed	Field	Current Version	Proposed Version
❗	**Methods of Evaluation**	**Methods of Evaluation**	**Methods of Evaluation** Methods of Evaluation

| **Methods of Evaluation** | 1. The required readings and assignments will be evaluated through quantitative problem-solving style homework questions, written verbal answers to quizzes involving lucid sentence constructions, and detailed, clearly explained mathematical solutions to exam problems.
2. Laboratory quantitative-style quizzes involving calculations from measurements taken and/or periodic review and critique of lab books.
3. Exams are objective written tests to demonstrate the student's understanding of the course material.
4. A laboratory based final examination involving "hands on" practical evaluations demonstrating the understanding of the learning outcomes listed in the student learning outcomes section.
5. A two hour comprehensive lecture final that includes the testing of verbal and conceptual understanding as well as mathematical and computational competency with respect to the theoretical basis and problem solving aspects of the class. The comprehensive final will test the overall understanding of the learning outcomes listed in the student learning outcomes section. | **Methods of Evaluation** | 1. The required readings and assignments will be evaluated through quantitative problem-solving style homework questions, written verbal answers to quizzes involving lucid sentence constructions, and detailed, clearly explained mathematical solutions to exam problems.
2. Laboratory quantitative-style quizzes involving calculations from measurements taken and/or periodic review and critique of lab books.
3. Exams are objective written tests to demonstrate the student's understanding of the course material.
4. A laboratory based final examination involving "hands on" practical evaluations demonstrating the understanding of the learning outcomes listed in the student learning outcomes section.
5. A two hour comprehensive lecture final that includes the testing of verbal and conceptual understanding as well as mathematical and computational competency with respect to the theoretical basis and problem solving aspects of the class. The comprehensive final will test the overall understanding of the learning outcomes listed in the student learning outcomes section. |

Changed	Field	Current Version	Proposed Version
	Essential Student Materials/Essential College Facilities	**Essential Student Materials:** • Laboratory notebook, ruler, scientific calculator **Essential College Facilities:** • Physics Laboratory	**Essential Student Materials:** • Laboratory notebook, ruler, scientific calculator **Essential College Facilities:** • Physics Laboratory
❗	**Examples of Primary Texts and References**		

Title	No value
Author	*Halliday, Resnick, and Walker, "Fundamentals of Physics", 10th edition, Wiley, 2013.
Publisher	No value
Date/Edition	No value
ISBN	No value

Title	No value
Author	Newton, D. "Physics 2B Laboratory Exercises". De Anza Printing Services, 2010.
Publisher	No value
Date/Edition	No value
ISBN	No value

Title	Fundamentals of Physics
Author	David Halliday, Robert Resnick, and Jearl Walker
Publisher	Wiley
Date/Edition	2021 / 12th edition
ISBN	978-1-119-80112-2

Title	Physics 2B Laboratory Exercises
Author	David Newton
Publisher	De Anza Printing Services
Date/Edition	2010
ISBN	No value

❗ **Suggested Reading List**

No value

Reading List	James S. Walker, "PHYSICS", 4th edition, Addison-Wesley, 2009.
May include, but are not limited to	No value

Learning Outcomes and Objectives

Changed	Field	Current Version	Proposed Version
	Course Objectives	• Analyze and apply the relevant principles of mechanices to solve problems involving charge and the electric force. • Examine electric potential and capacitance to solve problems. • Define and study DC and AC electric circuit theory and apply it to solve problems. • Apply the principles of magnetism to problem solving. • Analyze and examine electromagnetic induction. • Assess and examine electromagnetic (EM) waves. • Analyze data in the laboratory using graphical, statistical, and computer based techniques.	• Analyze and apply the relevant principles of mechanices to solve problems involving charge and the electric force. • Examine electric potential and capacitance to solve problems. • Define and study DC and AC electric circuit theory and apply it to solve problems. • Apply the principles of magnetism to problem solving. • Analyze and examine electromagnetic induction. • Assess and examine electromagnetic (EM) waves. • Analyze data in the laboratory using graphical, statistical, and computer based techniques.
❗	**CSLOs**		

CSLOs	Critically examine new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of electricity and magnetism.
Expected SLO Performance	0.0

CSLOs	Examine critically new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of electricity and magnetism.
Expected SLO Performance	0.0

CSLOs	Gain confidence in taking precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories.
Expected SLO Performance	0.0

CSLOs	Demonstrate ability to take precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories.
Expected SLO Performance	0.0

Course Outline

Changed	Field	Current Version	Proposed Version

	Course Content	1. Analyze and apply the relevant principles of mechanics to solve problems involving charge and the electric force.
		  1. Define electric charge and discuss its properties.
		  2. Examine Coulomb's force law.
		  3. Discuss the electric field.
		2. Examine electric potential and capacitance to solve problems.
		  1. Define electric potential and voltage.
		  2. Analyze and discuss equipotential lines.
		  3. Define capacitance.
		3. Define and study DC and AC electric circuit theory and apply it to solve problems.
		  1. Examine the electric battery.
		  2. Define and examine current.
		  3. Define Ohm's Law.
		  4. Study resistors in series and in parallel.
		  5. Define and examine Kirchhoff's rules.
		4. Apply the principles of magnetism to problem solving.
		  1. Define the magnetic field.
		  2. Explore the sources of magnetism.
		  3. Explore the force on an electric current in a magnetic field.
		  4. Define and discuss the force on an electric charge moving in a magnetic field.
		5. Analyze and examine electromagnetic induction.
		  1. Define magnetic flux and the concept of induced EMF.
		  2. Introduce and examine Faraday's law of induction and Lenz's Law.
		  3. Analyze "motional EMF".
		6. Assess and examine electromagnetic (EM) waves.
		  1. Examine the causes and production of EM waves.
		  2. Discuss and analyze light as an electromagnetic wave and the electromagnetic spectrum.
		  3. Analyze energy and EM waves.
		7. Analyze data in the laboratory using graphical, statistical, and computer based techniques.
		  1. Take accurate measurements with confidence and understand the uncertainties associated with them as pertaining to the use of electrical measuring instruments including multimeters and oscilloscopes.
		  2. Analyze data to induce scientific conclusions.
		  3. Collaborate with others as a team to produce collective results.
			1. Analyze and apply the relevant principles of mechanics to solve problems involving charge and the electric force.
			  1. Define electric charge and discuss its properties.
			  2. Examine Coulomb's force law.
			  3. Discuss the electric field.
			2. Examine electric potential and capacitance to solve problems.
			  1. Define electric potential and voltage.
			  2. Analyze and discuss equipotential lines.
			  3. Define capacitance.
			3. Define and study DC and AC electric circuit theory and apply it to solve problems.
			  1. Examine the electric battery.
			  2. Define and examine current.
			  3. Define Ohm's Law.
			  4. Study resistors in series and in parallel.
			  5. Define and examine Kirchhoff's rules.
			4. Apply the principles of magnetism to problem solving.
			  1. Define the magnetic field.
			  2. Explore the sources of magnetism.
			  3. Explore the force on an electric current in a magnetic field.
			  4. Define and discuss the force on an electric charge moving in a magnetic field.
			5. Analyze and examine electromagnetic induction.
			  1. Define magnetic flux and the concept of induced EMF.
			  2. Introduce and examine Faraday's law of induction and Lenz's Law.
			  3. Analyze "motional EMF".
			6. Assess and examine electromagnetic (EM) waves.
			  1. Examine the causes and production of EM waves.
			  2. Discuss and analyze light as an electromagnetic wave and the electromagnetic spectrum.
			  3. Analyze energy and EM waves.
			7. Analyze data in the laboratory using graphical, statistical, and computer based techniques.
			  1. Take accurate measurements with confidence and understand the uncertainties associated with them as pertaining to the use of electrical measuring instruments including multimeters and oscilloscopes.
			  2. Analyze data to induce scientific conclusions.
			  3. Collaborate with others as a team to produce collective results.

Changed	Field	Current Version	Proposed Version
	Lab Component in this Course	Yes	Yes
	Lab Outline	1. Measuring resistance. 2. Construct a capacitor. 3. Measure current and voltages. 4. Learn how to use the oscilloscope. 5. Construct an RC circuit. 6. Study the magnetic force on a current. 7. Take accurate measurements with confidence and understand the uncertainties associated with them. 8. Analyze data using graphical, statistical, and computer based techniques. 9. Analyze data to induce scientific conclusions. 10. Collaborate with others as a team to produce collective results.	1. Measuring resistance. 2. Construct a capacitor. 3. Measure current and voltages. 4. Learn how to use the oscilloscope. 5. Construct an RC circuit. 6. Study the magnetic force on a current. 7. Take accurate measurements with confidence and understand the uncertainties associated with them. 8. Analyze data using graphical, statistical, and computer based techniques. 9. Analyze data to induce scientific conclusions. 10. Collaborate with others as a team to produce collective results.

Req/Adv

Changed	Questions	Current Version	Proposed Version
	Prerequisite(s):	PHYS D002A	PHYS D002A
	Corequisite(s):	No Value	No Value
	Advisory(ies):	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005.	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005.
	Advisory(ies) - Other:	No Value	No Value
	Limitation(s) on Enrollment:	No Value	No Value
	Limitation(s) on Enrollment - Other:	No Value	No Value
	Entrance Skills(s):	No Value	No Value
	Entrance Skill(s) - Other:	No Value	No Value
	General Course Statement(s):	No Value	No Value
	General Course Statement(s) - Other:	No Value	No Value

Curriculum Office

Changed	Questions	Current Version	Proposed Version
❗	**Banner Start Term (202122)**	202122	No Value
❗	**Banner Division**	2PS	No Value
❗	**Catalog Term (21-22)**	23-24	No Value
❗	**5 Year Revision Year (2021)**	2018	No Value
❗	**Effective Quarter**	Fall	No Value
❗	**Effective Year (2021)**	2023	No Value
	Sort ID (00 < 10; 0 < 100)	PHYS 002B	PHYS 002B
	Course Status	Non-substantial	Non-substantial
❗	**Course Status Code**	A	No Value
❗	**Banner Department**	PHYS	No Value
❗	**Course Level**	DU	No Value
❗	**College Code**	DA	No Value
	Course Characteristics	NA	NA
	Cross-Listed/Related Course Information	NA	NA
	Cross-Listed/Related Course ID's	No Value	No Value
❗	**CTE Status**	No	No Value
	DL Approval Date (MM/DD/YYYY)	No Value	No Value
	Hybrid Approval Date (MM/DD/YYYY)	No Value	No Value
❗	**Emergency Approval**	No	No Value

Changed	Questions	Current Version	Proposed Version
❗	Repeat Status (N = Not Repeatable; T = Repeatable for Max Times Only; B = Repeatable for Max Times/Units; U = Repeatable for Max Units Only; Y = Yearly Repeatable Restriction)	N	No Value
❗	Repeat Type (N = Non-repeatable Credit; A = Activity/Other Repeatable; F = Family Non-repeatable Credit; G = Family Activity/Other Repeatable; L = Legally Mandated Training)	N	No Value
❗	Noncredit Enhanced Funding Indicator	N	No Value
❗	In Service Indicator	N	No Value
❗	Sports/Physical Education Course Indicator	N	No Value
❗	COA Code	C	No Value
❗	Fund Code	114000	No Value
❗	Organization Code	235003	No Value
❗	Account Code	1320	No Value
❗	Program Code	190200	No Value
❗	Percent	100	No Value
	Curriculum Office Notes	• Requisite change appr. 1/17/23 (effect. F23).-cc	• Requisite change appr. 1/17/23 (effect. F23).-cc
❗	Print/No Print to Catalog	Yes	No Value
	Checklist	No Value	No Value

Summary of Revisions

Changed	Questions	Current Version	Proposed Version
	Basic Course Information	No Value	No Value
	Units and Hours	No Value	No Value
❗	**Specifications**	No Value	Updated textbooks and references to reflect current publications
	Outline	No Value	No Value
	Other	No Value	No Value

Blue Form

Changed	Questions	Current Version	Proposed Version
	For changes to the units and hours tab; 1) Contact the Curriculum Office at curriculum@fhda.edu with the course information changes; and 2) address items 1-3 below. Please be aware that load factors and seat counts are assigned based on established, negotiated values.	No Value	No Value
	1. Is the unit(s) change required for articulation?	No Value	No Value
	2. If the course is UC or CSU transferable, identify one UC or CSU campus with the same unit value requested and copy and paste the catalog description of the course.	No Value	No Value
	3. Identify the areas in the course outline of record that justify the unit(s) and/or hour(s) change.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Office Use ONLY: For a REVISION, state the existing unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value
	Office Use ONLY: For a REVISION, state the new unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value
	Office Use ONLY: For NEW, state the unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value

A-Matrix Form

Changed	Questions	Current Version	Proposed Version
	EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Analyze college level texts and discourse that are culturally and rhetorically diverse.	No Value	No Value
	Objective 2: Compose essays drawn from personal experience and assigned texts.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 3: Utilize MLA guidelines to format essays, cite sources, and compile a works cited page.	No Value	No Value
	Objective 4: Create syntactically varied sentences that are free of mechanical errors.	No Value	No Value
	Objective 5: Distinguish, compare, and evaluate the multiplicity and ambiguity of perspectives.	No Value	No Value

B-Matrix Form

Changed	Questions	Current Version	Proposed Version
	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
❗	**Objective 1: Analyze a variety of college-level texts with a focus predominantly on expository and argumentative writing.**	No Value	Course Objective C1-C5 : Define and study DC and AC electric circuit theory and apply it to solve problems. Course Objective G1-G3 : Analyze data in the laboratory using graphical, statistical, and computer based techniques. Method of Evaluation A: The required readings and assignments will be evaluated through quantitative problem-solving style homework questions, written verbal answers to quizzes involving lucid sentence constructions, and detailed, clearly explained mathematical solutions to exam problems.
❗	**Objective 2: Develop analytical ideas and topics for essays.**	No Value	Assignment A : Daily and weekly readings from the text Assignment B: Weekly readings from the laboratory manual

Changed	Questions	Current Version	Proposed Version
❗	**Objective 3: Compose and support thesis statements for analytical essays.**	No Value	Method of Evaluation B: Laboratory quantitative-style quizzes involving calculations from measurements taken and/or periodic review and critique of laboratory notebooks.
❗	**Objective 4: Develop clear sequential relationship between central argument/controlling idea and supporting ideas in writing.**	No Value	Assignment C: Weekly written assignments from the text and lectures
	Objective 5: Identify and practice writing for different audiences and purposes.	No Value	No Value
	Objective 6: Develop and demonstrate a variety of rhetorical strategies to develop strong analysis in essays.	No Value	No Value
	Objective 7: Demonstrate writing as a multi-step process including attention to planning and revision.	No Value	No Value
	Objective 8: Practice composing organized, developed, analytical essays that increase in complexity.	No Value	No Value
	Objective 9: Demonstrate appropriate grammar usage and mechanics.	No Value	No Value

C-Matrix Form

Changed	Questions	Current Version	Proposed Version
	ESL D261. and ESL D265., or ESL D461. and ESL D465., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Create compositions about fiction and non-fiction texts from many cultural and social perspectives in a variety of genres.	No Value	No Value
	Objective 2: Compose a focused, purposeful, developed paper of 500 words or more that engages with, responds to, or is inspired by written or visual texts.	No Value	No Value
	Objective 3: Produce written work using a cyclical process of multiples drafts and revisions.	No Value	No Value
	Objective 4: Demonstrate the ability to include a variety of sentence structures in writing.	No Value	No Value
	Objective 5: Edit compositions to correct errors in the major conventions of Standard Written English.	No Value	No Value

D-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Intermediate algebra or equivalent (or higher), or appropriate placement beyond intermediate algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Plan, implement, and assess work cycles, at the problem, lesson, module, and course level, to develop self-efficacy through the practice of self-regulated learning.	No Value	No Value
	Objective 2: Investigate the use of mathematics in real world.	No Value	No Value
	Objective 3: Explore functions.	No Value	No Value
	Objective 4: Develop linear function models.	No Value	No Value
	Objective 5: Use systems of two linear equations to solve real world problems.	No Value	No Value
	Objective 6: Use linear inequalities in one variable to solve real world problems.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 7: Examine exponential expressions and develop exponential function models.	No Value	No Value
	Objective 8: Examine logarithmic expressions and develop logarithmic function models.	No Value	No Value
	Objective 9: Develop quadratic function models to solve problems.	No Value	No Value
	Objective 10: Investigate the characteristics of rational expressions.	No Value	No Value
	Objective 11: Develop skills to work with radical expressions.	No Value	No Value

E-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Elementary algebra or equivalent (or higher), or appropriate placement beyond elementary algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 1: Develop, throughout the course as applicable, systematic problem-solving methods.	No Value	No Value
	Objective 2: Explore the function concept algebraically, numerically, verbally and graphically.	No Value	No Value
	Objective 3: Explore the graphical and numerical characteristics of linear relationships and describe their meaning in the context of a problem.	No Value	No Value
	Objective 4: Develop linear function models to solve problems.	No Value	No Value
	Objective 5: Use systems of two linear equations to solve real-world problems.	No Value	No Value
	Objective 6: Explore the graphical and numerical characteristics of quadratic relationships and describe their meaning in the context of a problem.	No Value	No Value
	Objective 7: Develop quadratic function models to solve problems.	No Value	No Value
	Objective 8: Use inequalities to solve real world problems.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 9: Explore arithmetic sequences and series.	No Value	No Value
	Objective 10: Investigate, throughout the course as applicable, how mathematics has developed as a human activity around the world.	No Value	No Value

F-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Pre-algebra or equivalent (or higher), or appropriate placement beyond pre-algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Develop, throughout the course as applicable, systematic problem solving methods.	No Value	No Value
	Objective 2: Solve problems involving arithmetic operations, including fractions, percents and decimals.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 3: Apply the order of operations to evaluate signed numerical expressions.	No Value	No Value
	Objective 4: Solve problems involving operations with signed numbers.	No Value	No Value
	Objective 5: Explore the characteristics and properties of real numbers.	No Value	No Value
	Objective 6: Use estimation to determine approximate solutions and to check the reasonableness of answers.	No Value	No Value
	Objective 7: Explore rates and ratios and use proportions to solve problems.	No Value	No Value
	Objective 8: Explore, as applicable throughout the course, the geometry of mathematical measurements and solve problems involving geometric figures and formulas.	No Value	No Value
	Objective 9: Explore the use of variables in expressions and evaluate algebraic expressions.	No Value	No Value
	Objective 10: Solve linear equations in one variable numerically and algebraically.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 11: Graph linear relationships on a Cartesian coordinate by plotting ordered pairs.	No Value	No Value
	Objective 12: Investigate, throughout the course as applicable, how mathematics has developed as a human activity around the world.	No Value	No Value

G-Matrix Form

Changed	Questions	Current Version	Proposed Version
	If the requisite does not fall under an A-F Matrix, download the Content Review Matrix G from the Reference Materials, and follow the remaining instructions on the form. If a requisite falling under Matrix G is being removed, provide an explanation as to why.	No Value	No Value

H-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Objective 1: For entrance into a CTE program such as Nursing, AUTO, APRN, etc… list the prerequisite(s) to participate in the program.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 2: For Student Cohorts, such as Honors, Puente, performance groups, intercollegiate teams, Special Projects course, etc… list the prerequisite(s) to participate in the cohort.	No Value	No Value
	Objective 3: For Prerequisites based on Government/Licensing/Certification Regulations, or legal requirements, cite the regulation that mandates a prerequisite or attach a copy of it to this form.	No Value	No Value
	Objective 4: For Prerequisites based on Health and Safety, describe the specific skills, concepts, and information without which the students would create a hazard to themselves or those around them. Also describe how students will meet those skills, i.e. such as a course.	No Value	No Value

De Anza GE Form

Changed	Questions	Current Version	Proposed Version
	Criteria 1: Present core concepts and scope that define the discipline. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Criteria 2: Foster oral and written communication and collaborative exercises. Note that this criteria has three separate pieces: oral communication, written communication, and collaborative exercises. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value
	Criteria 3: Stimulate critical thinking. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value
	Criteria 4: Include diverse perspectives and contributions in the discipline such as: gender, culture, values, and/or societal perspectives. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Criteria 5: Provide global and historical context. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value
	Criteria 6: Use real-world or hands-on applications that will provide a context for the concepts being discussed. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value

De Anza GE - ESGC Form

Changed	Questions	Current Version	Proposed Version
	Criteria 1: Explain the interconnectivity of economic prosperity, social equity and environmental quality.	No Value	No Value
	Criteria 2: Identify the most serious environmental, equity, and social justice problems globally and locally and explain their underlying causes and possible consequences.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Criteria 3: Explain some significant ways students can make a difference in making a positive impact, locally, at a state level, or globally in making the world more environmentally sustainable and socially just.	No Value	No Value
	Criteria 4: Analyze how the well being of human society is dependent on sustainable social and ecological systems.	No Value	No Value
	Criteria 5: Demonstrate an understanding of how the student's personal activities impact the environment and communities by participating in actions to create a more environmentally sustainable and equitable future.	No Value	No Value

Comments

Changed	Questions	Current Version	Proposed Version
	Stage 2: Department Chair	No Value	No Value
	Stage 3: Division Curriculum Representative	No Value	No Value
	Stage 4: Division Dean	No Value	No Value

Changed	Questions	Current Version	Proposed Version

Changed	Questions	Current Version	Proposed Version
❗	Stage 5: SLO Coordinator	No Value	*(see tables below)*

Date	Name - Role OR Tab	Part - Field	Type of Edit	Edit	Initiator - Indicate "Y" When Completed
5/14/2024	Mary Pape – SLO Coordinator	CSLO #2	Required	"Gain confidence in . . ." is not assessable. Suggestion: "Take precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories."	

DATE	Name - Role OR Tab	Part - Field	Type of Edit	Edit	Initiator - Indicate "Y" When Completed
6/20/2024	Mary Pape – SLO Coordinator	Learning Outcomes – CSLO #2	Required	Begin outcome sentences with a Bloom's Taxonomy verb (http://dilbert.fhda.edu/curriculum/ (http://dilbert.fhda.edu/curriculum/). Suggestion: "Demonstrate ability to take precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories."	Y

Changed	Questions	Current Version	Proposed Version
❗	Stage 7: Content Review Matrix Liaison	No Value	*(see table below)*

Date	Tab	Part - Field	Type of Edit	Edit	Initiator - Indicate "Y" When Completed
6/26/24	Matrix B		Required	Please redo Matrix B using information from this course	Y

Changed	Questions	Current Version	Proposed Version
	Stage 8: AVP - Instruction	No Value	No Value
	Stage 9: Articulation Officer	No Value	No Value
	Stage 11: ESGC Faculty Coordinator	No Value	No Value
	Stage 14: Curriculum Committee	No Value	No Value

Course Administration Codes

Articulation occurs after course approval. The following fields will not show a Proposed Version.

Changed	Field	Current Version

Changed	Field	Current Version
	Curriculum ID	PHYSD002B
	Distance Education Approved	No
	Board of Trustees Approval Date	
	Curriculum Committee Approval Date	
	Time to Next Review	Sep 1, 2023 12:00:00 AM
	External Review Approval Date	Sep 1, 2018 12:00:00 AM
	Course Control Number	CCC000013978

Articulation

Changed	Field	Current Version
	Course Crosswalk CRS-DEPT-NAME	
	Course Crosswalk CRS-NUMBER	

Change Report

Summary of Changes

Section	Changed field
General Information	Faculty Initiator
General Information	Course Title (CB02)
General Information	Effective Term
General Information	Course Type (CB27)
General Information	Mode of Delivery
Faculty Requirements	Discipline 1
Faculty Requirements	FSA
Specifications	Methods of Instruction
Specifications	Methods of Evaluation
Specifications	Examples of Primary Texts and References
Specifications	Suggested Reading List
Learning Outcomes and Objectives	CSLOs
Curriculum Office	Banner Start Term (202122)
Curriculum Office	Banner Division
Curriculum Office	Catalog Term (21-22)
Curriculum Office	5 Year Revision Year (2021)
Curriculum Office	Effective Quarter
Curriculum Office	Effective Year (2021)
Curriculum Office	Course Status Code
Curriculum Office	Banner Department
Curriculum Office	Course Level
Curriculum Office	College Code
Curriculum Office	CTE Status
Curriculum Office	Emergency Approval
Curriculum Office	Repeat Status (N = Not Repeatable; T = Repeatable for Max Times Only; B = Repeatable for Max Times/Units; U = Repeatable for Max Units Only; Y = Yearly Repeatable Restriction)

Section	Changed field
Curriculum Office	Repeat Type (N = Non-repeatable Credit; A = Activity/Other Repeatable; F = Family Non-repeatable Credit; G = Family Activity/Other Repeatable; L = Legally Mandated Training)
Curriculum Office	Noncredit Enhanced Funding Indicator
Curriculum Office	In Service Indicator
Curriculum Office	Sports/Physical Education Course Indicator
Curriculum Office	COA Code
Curriculum Office	Fund Code
Curriculum Office	Organization Code
Curriculum Office	Account Code
Curriculum Office	Program Code
Curriculum Office	Percent
Curriculum Office	Print/No Print to Catalog
Summary of Revisions	Specifications
B-Matrix Form	Objective 1: Analyze a variety of college-level texts with a focus predominantly on expository and argumentative writing.
B-Matrix Form	Objective 2: Develop analytical ideas and topics for essays.
B-Matrix Form	Objective 3: Compose and support thesis statements for analytical essays.
B-Matrix Form	Objective 4: Develop clear sequential relationship between central argument/controlling idea and supporting ideas in writing.
Comments	Stage 5: SLO Coordinator
Comments	Stage 7: Content Review Matrix Liaison
CTE Course	Is this a CTE (Career Technical Education) course?
Honors/Non-honors Course	Is this an honors/non-honors course?
Mirrored Credit/Noncredit Course	Is this a mirrored credit/noncredit course?
Cross-listed Course	Is this a cross-listed course?

General Information

Changed	Field	Current Version	Proposed Version
❗	Faculty Initiator	• Erik Woodbury	• Zuleyha Yuksek • Deming, Chris
	Course ID (CB01A and CB01B)	PHYSD002C	PHYSD002C

Changed	Field	Current Version	Proposed Version
	Course Control Number	CCC000234469	CCC000234469
❗	**Course Title (CB02)**	General Introductory Physics	General ~~Introductory Physics~~ <u>Physics III</u>
	Short Course Title	GEN INTROD PHYSICS	GEN INTROD PHYSICS
	TOP Code (CB03)	1902.00	1902.00 Physics, General
	CIP Code	Physics, General	40.0801 Physics, General
	Department	PHYS - Physics	PHYS - Physics
❗	**Effective Term**	Fall 2023	Fall ~~2023~~ <u>2025</u>
	SAM Priority Code (CB09)	Non-Occupational	Non-Occupational
	Course Description	Study fluids, optics, thermodynamics, and modern physics. In the laboratory, continue to deepen an understanding of scientific procedure by applying theoretical models to classic experiments.	Study fluids, optics, thermodynamics, and modern physics. In the laboratory, continue to deepen an understanding of scientific procedure by applying theoretical models to classic experiments.
❗	**Course Type (CB27)**	No value	• Lower Division
❗	**Mode of Delivery**	No value	• In person ONLY

Faculty Requirements

Changed	Field	Current Version	Proposed Version
❗	**Discipline 1**	No value	• Physics/Astronomy
	Discipline 2	No value	No value
	Discipline 3	No value	No value
❗	**FSA**	No value	• FHDA FSA - PHYSICS

Formerly Statement

Changed	Field	Current Version	Proposed Version
	Formerly Statement	No value	

Course Justification

Changed	Field	Current Version	Proposed Version
	Course Justification	This course satisfies the major requirements for biology, architecture, and life science majors for at least one CSU or UC. It satisfies the Liberal Arts A.A. Degree, Science, Math and Engineering emphasis. PHYS D002C focuses on Optics, Thermodynamics, and Modern Physics.	This course satisfies the major requirements for biology, architecture, and life science majors for at least one CSU or UC. It satisfies the Liberal Arts A.A. Degree, Science, Math and Engineering emphasis. PHYS D002C focuses on Optics, Thermodynamics, and Modern Physics.

Stand-Alone Statement

Changed	Field	Current Version	Proposed Version
	Stand-Alone Statement	No value	

Course Philosophy

Changed	Field	Current Version	Proposed Version
	Course Philosophy	No value	

Foothill Equivalency

Changed	Field	Current Version	Proposed Version
	Foothill Faculty Consultation Name	No value	
	Foothill Course ID	No value	
	Does the course have a Foothill equivalent?	No	No

CTE Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a CTE (Career Technical Education) course?**	No value	<u>No</u>

Honors/Non-honors Course

Changed	Field	Current Version	Proposed Version
❗	**Is this an honors/non-honors course?**	No value	<u>No</u>

Mirrored Credit/Noncredit Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a mirrored credit/noncredit course?**	No value	<u>No</u>

Cross-listed Course

Changed	Field	Current Version	Proposed Version
❗	**Is this a cross-listed course?**	No value	<u>No</u>

More Options

Changed	Field	Current Version	Proposed Version
	Basic Skill Status (CB08)	Course is not a basic skills course.	Course is not a basic skills course.
	Course Prior To College Level	Not applicable.	Not applicable.
	Course Special Class Status (CB13)	Course is not a special class.	Course is not a special class.
	Course Support Status (CB26)	Course is not a support course	Course is not a support course
	Repeat Limit	0	0
	Grade Options	• Letter Grade • Pass/No Pass	• Letter Grade • Pass/No Pass
	Allow Students to Gain Credit by Exam/Challenge	☐	☐
	Repeatability Statement	No value	

Associated Programs

Changed	Field	Current Version	Proposed Version

Course is part of a program

Associated Program	Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Environmental Science for Transfer (In Development)
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Environmental Science for Transfer (In Development)
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Associate in Science in Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Associate in Science in Biology for Transfer
Award Type	Associate in Science for Transfer (A.S.-T.) Degree

Associated Program	Liberal Arts (Science, Math and Engineering Emphasis)
Award Type	Associate in Arts (A.A.) Degree

Associated Program	Liberal Arts (Science, Math and Engineering Emphasis)
Award Type	Associate in Arts (A.A.) Degree

Associated Program	Liberal Arts (Science, Math and Engineering Emphasis)
Award Type	Associate in Arts (A.A.) Degree

Associated Program	Liberal Arts (Science, Math and Engineering Emphasis)
Award Type	Associate in Arts (A.A.) Degree

Associated Program	Liberal Arts (Science, Math and Engineering Emphasis)
Award Type	Associate in Arts (A.A.) Degree

Associated Program	Liberal Arts (Science, Math and Engineering Emphasis)
Award Type	Associate in Arts (A.A.) Degree

Associated Program	Biological Sciences
Award Type	Associate in Science (A.S.) Degree

Associated Program	Biological Sciences
Award Type	Associate in Science (A.S.) Degree

Associated Program	Biological Sciences

Associated Program	Biological Sciences

Changed	Field	Current Version	Proposed Version
		Award Type Associate in Science (A.S.) Degree	**Award Type** Associate in Science (A.S.) Degree

Transferability & Gen. Ed. Options

Changed	Field	Current Version	Proposed Version
	Transfer Status (CB05)	Transferable to both UC and CSU	Transferable to both UC and CSU
	Course General Education Status (CB25)	Y	Y
	Transfer Status	Approved	Approved
	GE Information		

System/Institution	C-ID
Area(s)	• PHYS - Approved.
-	PHYS D002A & PHYS D002B & PHYS D002C required for C-ID PHYS 100 S

System/Institution	C-ID
Area(s)	• PHYS - Approved.
-	PHYS D002A & PHYS D002B & PHYS D002C required for C-ID PHYS 100 S

Weekly Student Hours - Profile Name: Default Profile

Changed	Field	Current Version	Proposed Version
	Lecture Hours - In Class	4	4
	Lecture Hours - Out of Class	8	8
	Laboratory Hours - In Class	3	3
	Laboratory Hours - Out of Class	0	0
	NA Hours - In Class	0	0
	NA Hours - Out of Class	0	0

Course Student Hours - Profile Name: Default Profile

Changed	Field	Current Version	Proposed Version
	Course Duration (Weeks)	12	12
	Hours per unit divisor	36	36
	Total Student Learning Hours	180	180
	Lecture Hours - Course In-Class (Contact) per Term	48	48
	Lecture Hours - Course Out-of-Class per Term	96	96
	Laboratory Hours - Course In-Class (Contact) per Term	36	36
	Laboratory Hours - Course Out-of-Class per Term	0	0
	NA Hours - Course In-Class (Contact) per Term	0	0
	NA Hours - Course Out-of-Class per Term	0	0
	Total - Course In-Class (Contact) Hours	84	84
	Total - Course Out-of-Class Hours	96	96
	Total Credit Units - Minimum Credit Units	5	5
	Total Credit Units - Maximum Credit Units	5	5

Speciality Hours

Changed	Field	Current Version	Proposed Version
	Speciality Hours	No value	No value

Credit / Non-Credit Options

Changed	Field	Current Version	Proposed Version
	COURSE CLASSIFICATION STATUS	Credit Course.	Credit Course.
	Course Credit Status (CB04)	Credit - Degree Applicable	Credit - Degree Applicable
	Course Non Credit Category (CB22)	Credit Course.	Credit Course.
	Funding Agency Category (CB23)	Not Applicable.	Not Applicable.
	Cooperative Work Experience Education Status (CB10)	☐	☐
	Variable Credit Course	☐	☐

Credit Units

Changed	Field	Current Version	Proposed Version
	Course Duration (Weeks)	12	12
	Total Lecture Hours per Term	144	144
	Total Laboratory Hours per Term	36	36
	Total Contact Hours per Term	-	0
	Total Credit Units	5	5
	Minimum Credit Units	5	5
	Maximum Credit Units	5	5

SKIP

Changed	Field	Current Version	Proposed Version
	SKIP	No Value	No Value

Specifications

Changed	Field	Current Version	Proposed Version
❗	Methods of Instruction	**Methods of Instruction**	**Methods of Instruction** Methods of Instruction
		Methods of Instruction Lecture and visual aids Discussion and problem solving performed in class Quiz and examination review performed in class Laboratory experience which involve students in formal exercises of data collection and analysis Laboratory discussion sessions and quizzes that evaluate the proceedings weekly laboratory exercises	**Methods of Instruction** Lecture and visual aids Discussion and problem solving performed in class Quiz and examination review performed in class Laboratory experience which involve students in formal exercises of data collection and analysis Laboratory discussion sessions and quizzes that evaluate the proceedings weekly laboratory exercises
	Assignments	1. Daily and weekly readings from the text 2. Weekly readings from the laboratory manual 3. Weekly written assignments from the text and lectures 4. Written laboratory records during each week of lab	1. Daily and weekly readings from the text 2. Weekly readings from the laboratory manual 3. Weekly written assignments from the text and lectures 4. Written laboratory records during each week of lab

Changed	Field	Current Version	Proposed Version

Methods of Evaluation

Methods of Evaluation

Methods of Evaluation

| **Methods of Evaluation** | 1. The required readings and assignments will be evaluated through quantitative problem-solving style homework questions, hand written verbal answers to quizzes involving lucid sentence constructions, and detailed, clearly explained mathematical solutions to exam problems.
2. Laboratory quantitative-style quizzes involving calculations from measurements taken and/or periodic review and critique of lab books.
3. Exams are objective written tests to demonstrate the student's understanding of the course material.
4. A laboratory based final examination involving "hands on" practical evaluations demonstrating the understanding of the learning outcomes listed in the student learning outcomes section.
5. A two hour comprehensive lecture final that includes the testing of verbal and conceptual understanding as well as mathematical and computational competency with respect to the theoretical basis and problem solving aspects of the class. The comprehensive final will test the overall understanding of the learning outcomes listed in the student learning outcomes section. |

Methods of Evaluation   Methods of Evaluation

| **Methods of Evaluation** | 1. The required readings and assignments will be evaluated through quantitative problem-solving style homework questions, hand written verbal answers to quizzes involving lucid sentence constructions, and detailed, clearly explained mathematical solutions to exam problems.
2. Laboratory quantitative-style quizzes involving calculations from measurements taken and/or periodic review and critique of lab books.
3. Exams are objective written tests to demonstrate the student's understanding of the course material.
4. A laboratory based final examination involving "hands on" practical evaluations demonstrating the understanding of the learning outcomes listed in the student learning outcomes section.
5. A two hour comprehensive lecture final that includes the testing of verbal and conceptual understanding as well as mathematical and computational competency with respect to the theoretical basis and problem solving aspects of the class. The comprehensive final will test the overall understanding of the learning outcomes listed in the student learning outcomes section. |

Changed	Field	Current Version	Proposed Version

| | **Essential Student Materials/Essential College Facilities** | **Essential Student Materials:**
• Laboratory notebook, ruler, scientific calculator

Essential College Facilities:
• Physics Laboratory | **Essential Student Materials:**
• Laboratory notebook, ruler, scientific calculator

Essential College Facilities:
• Physics Laboratory |

❗ Examples of Primary Texts and References

Current Version:

Title	No value
Author	*Halliday, Resnick, and Walker, "Fundamentals of Physics", 10th edition, Wiley, 2013.
Publisher	No value
Date/Edition	No value
ISBN	No value

Title	No value
Author	Newton, D., "Physics 2C Laboratory Exercises". De Anza Printing Services, 2010.
Publisher	No value
Date/Edition	No value
ISBN	No value

Proposed Version:

Title	Fundamentals of Physics
Author	David Halliday, Robert Resnick, and Jearl Walker
Publisher	Wiley
Date/Edition	2021 / 12th Edition
ISBN	978-1-119-80112-2

Title	Physics 2C Laboratory Exercises
Author	David Newton
Publisher	De Anza Printing Services
Date/Edition	2010
ISBN	No value

❗ Suggested Reading List

Proposed Version: No value

Current Version:

Reading List	James S. Walker, "PHYSICS", 4th edition, Addison-Wesley, 2009.
May include, but are not limited to	No value

Learning Outcomes and Objectives

Changed	Field	Current Version	Proposed Version
	Course Objectives	• Analyze the properites of fluids. • Investigate the field of optics. • Explore thermal physics. • Assess special relativity. • Appraise quantum theory. • Analyze data in the laboratory using graphical, statistical, and computer based techniques.	• Analyze the properites of fluids. • Investigate the field of optics. • Explore thermal physics. • Assess special relativity. • Appraise quantum theory. • Analyze data in the laboratory using graphical, statistical, and computer based techniques.
🛈	CSLOs		

CSLOs	Critically examine new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of optics, thermodynamics, fluids, and modern physics.
Expected SLO Performance	0.0

CSLOs	Examine critically new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of optics, thermodynamics, fluids, and modern physics.
Expected SLO Performance	0.0

CSLOs	Gain confidence in taking precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories.
Expected SLO Performance	0.0

CSLOs	Demonstrate ability to take precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories.
Expected SLO Performance	0.0

Course Outline

Changed	Field	Current Version	Proposed Version

	Course Content	1. Analyze the properites of fluids.
		   1. Define density.
		   2. Investigate pressure in fluids.
		   3. Discuss atmospheric pressure.
		   4. Examine Pascal's principle.
		   5. Examine Archimedes' principle.
		   6. Discuss Bernoulli's equation.
		2. Investigate the field of optics.
		   1. Define and discuss geometric optics.
		      1. Discuss the ray model of light.
		      2. Define the index of refraction.
		      3. Discuss and define reflection and refraction.
		      4. Analyze the lens equation.
		   2. Define and discuss wave optics.
		      1. Discuss Huygen's principle.
		      2. Define and discuss interference.
		      3. Define and discuss diffraction.
		      4. Analyze polarization.
		3. Explore thermal physics.
		   1. Examine temperature and heat
		   2. Define the internal energy of a system.
		   3. Analyze calorimetry problems.
		   4. Discuss the laws of thermodynamics.
		4. Assess special relativity.
		   1. Examine the postulates of the special theory.
		   2. Define and discuss simlutaneity.
		   3. Define and discuss time dilation and length contraction.
		   4. Discuss mass-energy equivalance.
		5. Appraise quantum theory.
		   1. Discuss Planck's quantum hypothesis.
		   2. Discuss the photon theory of light.
		   3. Examine the wave nature of matter.
		   4. Examine the Heisenberg uncertainty relation.
		   5. Examine the Schrodinger equation and its application to atomic structure.
		6. Analyze data in the laboratory using graphical, statistical, and computer based techniques.
		   1. Take accurate measurements with confidence and understand the uncertainties associated with them.
		   2. Synthesize the analysis of data to induce scientific conclusions.
		   3. Collaborate with others as a team to produce collective results.
			1. Analyze the properites of fluids.
			   1. Define density.
			   2. Investigate pressure in fluids.
			   3. Discuss atmospheric pressure.
			   4. Examine Pascal's principle.
			   5. Examine Archimedes' principle.
			   6. Discuss Bernoulli's equation.
			2. Investigate the field of optics.
			   1. Define and discuss geometric optics.
			      1. Discuss the ray model of light.
			      2. Define the index of refraction.
			      3. Discuss and define reflection and refraction.
			      4. Analyze the lens equation.
			   2. Define and discuss wave optics.
			      1. Discuss Huygen's principle.
			      2. Define and discuss interference.
			      3. Define and discuss diffraction.
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			   5. Examine the Schrodinger equation and its application to atomic structure.
			6. Analyze data in the laboratory using graphical, statistical, and computer based techniques.
			   1. Take accurate measurements with confidence and understand the uncertainties associated with them.
			   2. Synthesize the analysis of data to induce scientific conclusions.
			   3. Collaborate with others as a team to produce collective results.

	Lab Component in this Course	Yes	Yes

Changed	Field	Current Version	Proposed Version
	Lab Outline	1. Density, the buoyant force, and Archimede's Principle. 2. Geometric Optics 3. Wave Optics (single slit diffraction) 4. Wave Optics (double slit interference) 5. Microwave Optics (single slit) 6. Microwave Optics with Bragg diffraction 7. Atomic spectra 8. The E/M experiment.	1. Density, the buoyant force, and Archimede's Principle. 2. Geometric Optics 3. Wave Optics (single slit diffraction) 4. Wave Optics (double slit interference) 5. Microwave Optics (single slit) 6. Microwave Optics with Bragg diffraction 7. Atomic spectra 8. The E/M experiment.

Req/Adv

Changed	Questions	Current Version	Proposed Version
	Prerequisite(s):	PHYS D002B	PHYS D002B
	Corequisite(s):	No Value	No Value
	Advisory(ies):	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005.	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005.
	Advisory(ies) - Other:	No Value	No Value
	Limitation(s) on Enrollment:	No Value	No Value
	Limitation(s) on Enrollment - Other:	No Value	No Value
	Entrance Skills(s):	No Value	No Value
	Entrance Skill(s) - Other:	No Value	No Value
	General Course Statement(s):	No Value	No Value
	General Course Statement(s) - Other:	No Value	No Value

Curriculum Office

Changed	Questions	Current Version	Proposed Version
❗	Banner Start Term (202122)	202122	No Value
❗	Banner Division	2PS	No Value
❗	Catalog Term (21-22)	23-24	No Value

Changed	Questions	Current Version	Proposed Version
❗	5 Year Revision Year (2021)	2018	No Value
❗	Effective Quarter	Fall	No Value
❗	Effective Year (2021)	2023	No Value
	Sort ID (00 < 10; 0 < 100)	PHYS 002C	PHYS 002C
	Course Status	Non-substantial	Non-substantial
❗	Course Status Code	A	No Value
❗	Banner Department	PHYS	No Value
❗	Course Level	DU	No Value
❗	College Code	DA	No Value
	Course Characteristics	NA	NA
	Cross-Listed/Related Course Information	NA	NA
	Cross-Listed/Related Course ID's	No Value	No Value
❗	CTE Status	No	No Value
	DL Approval Date (MM/DD/YYYY)	No Value	No Value
	Hybrid Approval Date (MM/DD/YYYY)	No Value	No Value
❗	Emergency Approval	No	No Value
❗	Repeat Status (N = Not Repeatable; T = Repeatable for Max Times Only; B = Repeatable for Max Times/Units; U = Repeatable for Max Units Only; Y = Yearly Repeatable Restriction)	N	No Value

Changed	Questions	Current Version	Proposed Version
❗	Repeat Type (N = Non-repeatable Credit; A = Activity/Other Repeatable; F = Family Non-repeatable Credit; G = Family Activity/Other Repeatable; L = Legally Mandated Training)	N	No Value
❗	Noncredit Enhanced Funding Indicator	N	No Value
❗	In Service Indicator	N	No Value
❗	Sports/Physical Education Course Indicator	N	No Value
❗	COA Code	C	No Value
❗	Fund Code	114000	No Value
❗	Organization Code	235003	No Value
❗	Account Code	1320	No Value
❗	Program Code	190200	No Value
❗	Percent	100	No Value
	Curriculum Office Notes	• Requisite change appr. 1/17/23 (effect. F23).-cc	• Requisite change appr. 1/17/23 (effect. F23).-cc
❗	Print/No Print to Catalog	Yes	No Value
	Checklist	No Value	No Value

Summary of Revisions

Changed	Questions	Current Version	Proposed Version
	Basic Course Information	No Value	No Value
	Units and Hours	No Value	No Value
❗	Specifications	No Value	Updated textbooks and references to reflect current publications
	Outline	No Value	No Value
	Other	No Value	No Value

Blue Form

Changed	Questions	Current Version	Proposed Version
	For changes to the units and hours tab; 1) Contact the Curriculum Office at curriculum@fhda.edu with the course information changes; and 2) address items 1-3 below. Please be aware that load factors and seat counts are assigned based on established, negotiated values.	No Value	No Value
	1. Is the unit(s) change required for articulation?	No Value	No Value
	2. If the course is UC or CSU transferable, identify one UC or CSU campus with the same unit value requested and copy and paste the catalog description of the course.	No Value	No Value
	3. Identify the areas in the course outline of record that justify the unit(s) and/or hour(s) change.	No Value	No Value
	Office Use ONLY: For a REVISION, state the existing unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value
	Office Use ONLY: For a REVISION, state the new unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Office Use ONLY: For NEW, state the unit(s); lec hour(s) and load; lab hour(s) and load; and seat count.	No Value	No Value

A-Matrix Form

Changed	Questions	Current Version	Proposed Version
	EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Analyze college level texts and discourse that are culturally and rhetorically diverse.	No Value	No Value
	Objective 2: Compose essays drawn from personal experience and assigned texts.	No Value	No Value
	Objective 3: Utilize MLA guidelines to format essays, cite sources, and compile a works cited page.	No Value	No Value
	Objective 4: Create syntactically varied sentences that are free of mechanical errors.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 5: Distinguish, compare, and evaluate the multiplicity and ambiguity of perspectives.	No Value	No Value

B-Matrix Form

Changed	Questions	Current Version	Proposed Version
	ESL D272. and ESL D273., or ESL D472. and ESL D473., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
❗	**Objective 1: Analyze a variety of college-level texts with a focus predominantly on expository and argumentative writing.**	No Value	Course Objective A1-A6 : Analyze the properties of fluids. Course Objective D1-D4 : Assess special relativity. Course Objective F1-F3 : Analyze data in the laboratory using graphical, statistical, and computer based techniques. Method of Evaluation A: The required readings and assignments will be evaluated through quantitative problem-solving style homework questions, written verbal answers to quizzes involving lucid sentence constructions, and detailed, clearly explained mathematical solutions to exam problems. Assignment C: Weekly written assignments from the text and lectures
❗	**Objective 2: Develop analytical ideas and topics for essays.**	No Value	Assignment A : Daily and weekly readings from the text Assignment B: Weekly readings from the laboratory manual
❗	**Objective 3: Compose and support thesis statements for analytical essays.**	No Value	Method of Evaluation B: Laboratory quantitative-style quizzes involving calculations from measurements taken and/or periodic review and critique of laboratory notebooks.

Changed	Questions	Current Version	Proposed Version
❗	**Objective 4: Develop clear sequential relationship between central argument/controlling idea and supporting ideas in writing.**	No Value	Assignment C: Weekly written assignments from the text and lectures
	Objective 5: Identify and practice writing for different audiences and purposes.	No Value	No Value
	Objective 6: Develop and demonstrate a variety of rhetorical strategies to develop strong analysis in essays.	No Value	No Value
	Objective 7: Demonstrate writing as a multi-step process including attention to planning and revision.	No Value	No Value
	Objective 8: Practice composing organized, developed, analytical essays that increase in complexity.	No Value	No Value
	Objective 9: Demonstrate appropriate grammar usage and mechanics.	No Value	No Value

C-Matrix Form

Changed	Questions	Current Version	Proposed Version
	ESL D261. and ESL D265., or ESL D461. and ESL D465., or eligibility for EWRT D001A or EWRT D01AH or ESL D005. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Create compositions about fiction and non-fiction texts from many cultural and social perspectives in a variety of genres.	No Value	No Value
	Objective 2: Compose a focused, purposeful, developed paper of 500 words or more that engages with, responds to, or is inspired by written or visual texts.	No Value	No Value
	Objective 3: Produce written work using a cyclical process of multiples drafts and revisions.	No Value	No Value
	Objective 4: Demonstrate the ability to include a variety of sentence structures in writing.	No Value	No Value
	Objective 5: Edit compositions to correct errors in the major conventions of Standard Written English.	No Value	No Value

D-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Intermediate algebra or equivalent (or higher), or appropriate placement beyond intermediate algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Plan, implement, and assess work cycles, at the problem, lesson, module, and course level, to develop self-efficacy through the practice of self-regulated learning.	No Value	No Value
	Objective 2: Investigate the use of mathematics in real world.	No Value	No Value
	Objective 3: Explore functions.	No Value	No Value
	Objective 4: Develop linear function models.	No Value	No Value
	Objective 5: Use systems of two linear equations to solve real world problems.	No Value	No Value
	Objective 6: Use linear inequalities in one variable to solve real world problems.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 7: Examine exponential expressions and develop exponential function models.	No Value	No Value
	Objective 8: Examine logarithmic expressions and develop logarithmic function models.	No Value	No Value
	Objective 9: Develop quadratic function models to solve problems.	No Value	No Value
	Objective 10: Investigate the characteristics of rational expressions.	No Value	No Value
	Objective 11: Develop skills to work with radical expressions.	No Value	No Value

E-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Elementary algebra or equivalent (or higher), or appropriate placement beyond elementary algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 1: Develop, throughout the course as applicable, systematic problem-solving methods.	No Value	No Value
	Objective 2: Explore the function concept algebraically, numerically, verbally and graphically.	No Value	No Value
	Objective 3: Explore the graphical and numerical characteristics of linear relationships and describe their meaning in the context of a problem.	No Value	No Value
	Objective 4: Develop linear function models to solve problems.	No Value	No Value
	Objective 5: Use systems of two linear equations to solve real-world problems.	No Value	No Value
	Objective 6: Explore the graphical and numerical characteristics of quadratic relationships and describe their meaning in the context of a problem.	No Value	No Value
	Objective 7: Develop quadratic function models to solve problems.	No Value	No Value
	Objective 8: Use inequalities to solve real world problems.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 9: Explore arithmetic sequences and series.	No Value	No Value
	Objective 10: Investigate, throughout the course as applicable, how mathematics has developed as a human activity around the world.	No Value	No Value

F-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Pre-algebra or equivalent (or higher), or appropriate placement beyond pre-algebra. If this is the requisite for the course, complete the objective(s) below. If this requisite is being removed, provide an explanation as to why.	No Value	No Value
	Objective 1: Develop, throughout the course as applicable, systematic problem solving methods.	No Value	No Value
	Objective 2: Solve problems involving arithmetic operations, including fractions, percents and decimals.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 3: Apply the order of operations to evaluate signed numerical expressions.	No Value	No Value
	Objective 4: Solve problems involving operations with signed numbers.	No Value	No Value
	Objective 5: Explore the characteristics and properties of real numbers.	No Value	No Value
	Objective 6: Use estimation to determine approximate solutions and to check the reasonableness of answers.	No Value	No Value
	Objective 7: Explore rates and ratios and use proportions to solve problems.	No Value	No Value
	Objective 8: Explore, as applicable throughout the course, the geometry of mathematical measurements and solve problems involving geometric figures and formulas.	No Value	No Value
	Objective 9: Explore the use of variables in expressions and evaluate algebraic expressions.	No Value	No Value
	Objective 10: Solve linear equations in one variable numerically and algebraically.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 11: Graph linear relationships on a Cartesian coordinate by plotting ordered pairs.	No Value	No Value
	Objective 12: Investigate, throughout the course as applicable, how mathematics has developed as a human activity around the world.	No Value	No Value

G-Matrix Form

Changed	Questions	Current Version	Proposed Version
	If the requisite does not fall under an A-F Matrix, download the Content Review Matrix G from the Reference Materials, and follow the remaining instructions on the form. If a requisite falling under Matrix G is being removed, provide an explanation as to why.	No Value	No Value

H-Matrix Form

Changed	Questions	Current Version	Proposed Version
	Objective 1: For entrance into a CTE program such as Nursing, AUTO, APRN, etc… list the prerequisite(s) to participate in the program.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Objective 2: For Student Cohorts, such as Honors, Puente, performance groups, intercollegiate teams, Special Projects course, etc… list the prerequisite(s) to participate in the cohort.	No Value	No Value
	Objective 3: For Prerequisites based on Government/Licensing/Certification Regulations, or legal requirements, cite the regulation that mandates a prerequisite or attach a copy of it to this form.	No Value	No Value
	Objective 4: For Prerequisites based on Health and Safety, describe the specific skills, concepts, and information without which the students would create a hazard to themselves or those around them. Also describe how students will meet those skills, i.e. such as a course.	No Value	No Value

De Anza GE Form

Changed	Questions	Current Version	Proposed Version
	Criteria 1: Present core concepts and scope that define the discipline. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Criteria 2: Foster oral and written communication and collaborative exercises. Note that this criteria has three separate pieces: oral communication, written communication, and collaborative exercises. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value
	Criteria 3: Stimulate critical thinking. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value
	Criteria 4: Include diverse perspectives and contributions in the discipline such as: gender, culture, values, and/or societal perspectives. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Criteria 5: Provide global and historical context. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value
	Criteria 6: Use real-world or hands-on applications that will provide a context for the concepts being discussed. (ONLY using the Outline, Assignments or Methods of Evaluation areas, cite, copy and paste the area referenced.)	No Value	No Value

De Anza GE - ESGC Form

Changed	Questions	Current Version	Proposed Version
	Criteria 1: Explain the interconnectivity of economic prosperity, social equity and environmental quality.	No Value	No Value
	Criteria 2: Identify the most serious environmental, equity, and social justice problems globally and locally and explain their underlying causes and possible consequences.	No Value	No Value

Changed	Questions	Current Version	Proposed Version
	Criteria 3: Explain some significant ways students can make a difference in making a positive impact, locally, at a state level, or globally in making the world more environmentally sustainable and socially just.	No Value	No Value
	Criteria 4: Analyze how the well being of human society is dependent on sustainable social and ecological systems.	No Value	No Value
	Criteria 5: Demonstrate an understanding of how the student's personal activities impact the environment and communities by participating in actions to create a more environmentally sustainable and equitable future.	No Value	No Value

Comments

Changed	Questions	Current Version	Proposed Version
	Stage 2: Department Chair	No Value	No Value
	Stage 3: Division Curriculum Representative	No Value	No Value
	Stage 4: Division Dean	No Value	No Value

Changed	Questions	Current Version	Proposed Version
❗	**Stage 5: SLO Coordinator**	No Value	(see table below)

Date	Name - Role OR Tab	Part - Field	Type of Edit	Edit	Initiator - Indicate "Y" When Completed
5/14/2024	Mary Pape – SLO Coordinator	CSLO #2	Required	"Gain confidence in . . ." is not assessable. Suggestion: "Take precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories."	

DATE	Name - Role OR Tab	Part - Field	Type of Edit	Edit	Initiator - Indicate "Y" When Completed
6/20/2024	Mary Pape – SLO Coordinator	Learning Outcomes – CSLO #2	Required	Begin outcome sentences with a Bloom's Taxonomy verb (http://dilbert.fhda.edu/curriculum/ (http://dilbert.fhda.edu/curriculum/). Suggestion: " Demonstrate ability to take precise and accurate scientific measurements, with their uncertainties, and then with calculations from them, analyze their meaning as relative, in an experimental context, to the verification and support of physics theories."	Y

Changed	Questions	Current Version	Proposed Version
❗	**Stage 7: Content Review Matrix Liaison**	No Value	(see table below)

Date	Tab	Part - Field	Type of Edit	Edit	Initiator - Indicate "Y" When Completed
6/26/24	Matrix B		Required	Please redo this matrix. Please check that the material you list is actually in the course. Also, please make sure that the activities you list actually match the objective you have listed them under.	Y

	Stage 8: AVP - Instruction	No Value	No Value
	Stage 9: Articulation Officer	No Value	No Value
	Stage 11: ESGC Faculty Coordinator	No Value	No Value
	Stage 14: Curriculum Committee	No Value	No Value

Course Administration Codes

Articulation occurs after course approval. The following fields will not show a Proposed Version.

Changed	Field	Current Version
	Curriculum ID	PHYSD002C
	Distance Education Approved	No
	Board of Trustees Approval Date	
	Curriculum Committee Approval Date	
	Time to Next Review	Sep 1, 2023 12:00:00 AM
	External Review Approval Date	Sep 1, 2018 12:00:00 AM
	Course Control Number	CCC000234469

Articulation

Changed	Field	Current Version
	Course Crosswalk CRS-DEPT-NAME	
	Course Crosswalk CRS-NUMBER	