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## Term Information

Effective Term Autumn 2025

## General Information

Course Bulletin Listing/Subject Area Physics  
Fiscal Unit/Academic Org Physics - D0684  
College/Academic Group Arts and Sciences  
Level/Career Undergraduate  
Course Number/Catalog 1125  
Course Title Practicing Physics – Matter, Heat, and Motion  
Transcript Abbreviation Practicing Physics  
Course Description Students work in groups to perform hands-on investigations on density, motion, and thermodynamics and develop models to describe and explain their observations. Through discussions with instructors and peers, students consider the effects of science in society and apply their scientific skills to everyday situations. Intended for non-science majors, especially those contemplating a teaching career  
Semester Credit Hours/Units Fixed: 4

## Offering Information

Length Of Course 14 Week, 12 Week  
Flexibly Scheduled Course Never  
Does any section of this course have a distance education component? No  
Grading Basis Letter Grade  
Repeatable No  
Course Components Lecture  
Grade Roster Component Lecture  
Credit Available by Exam No  
Admission Condition Course No  
Off Campus Never  
Campus of Offering Columbus, Lima, Mansfield, Marion, Newark, Wooster

## Prerequisites and Exclusions

Prerequisites/Corequisites None  
Exclusions Not open to students with credit for 1106  
Electronically Enforced Yes

## Cross-Listings

Cross-Listings

## Subject/CIP Code

Subject/CIP Code 40.0801  
Subsidy Level General Studies Course  
Intended Rank Freshman, Sophomore, Junior, Senior

## **Requirement/Elective Designation**

Natural Sciences

## **Course Details**

### **Course goals or learning objectives/outcomes**

- Gather and analyze data and develop models related to the topics of density, buoyancy, calorimetry, and one-dimensional motion. Use those models to make quantitative predictions.
- Construct a relevant plot of the data, obtain a best fit line and equation, and interpret quantities such as slope and y-intercept.
- Construct operational definitions of physics quantities and explain and justify the need for measurement standards.
- Solve density, calorimetry, and linear motion problems using proportional reasoning.
- Use multiple representations to describe physical contexts and phenomena related to density, buoyancy, calorimetry, and one-dimensional motion and translate between these representations.
- Interpret and apply the meaning of compound physical quantities, such as gram per centimeter cubed.
- Describe and explain the relations between position, velocity, and acceleration graphs for an object moving in one dimension with a constant acceleration
- Determine and justify uncertainty in measurements and present results with appropriate uncertainty, including the use of error propagation to obtain calculated values with appropriate uncertainty.
- Use uncertainty to critically evaluate claims that two measured quantities are the same or different.
- Evaluate the social and ethical implications of scientific claims in the media by interpreting data presented in tables, figures, and graphs, and including the concept of measurement uncertainty.
- Recognize that, while many current scientific models and practices are productive, science is an ongoing, iterative process for building and refining methods and models of the world, and provide examples.

**Content Topic List**

- Properties of matter:
  - Definition and measurement of mass and volume
  - Definition and calculation of density
  - Sinking and floating behavior in arbitrary liquids
  - Law of conservation of mass
- Heat and Temperature:
  - Definition of temperature and temperature scales
  - Model for heat transfer
  - Combining hot and cold fluids
  - Heat capacity and specific heat
  - Phase changes
- Motion and Forces:
  - Uniform and non-uniform motion in one-dimension
  - Definition of velocity and acceleration
  - Relationship between position, velocity, and acceleration graphs
  - Definition of force (as  $F(\text{net}) = ma$ )
- Scientific practices:
  - Operational definitions
  - Uncertainties in measurement and error propagation
  - Plotting data and obtaining best fit equations; interpreting fit parameters.
  - Using proportional reasoning to solve simple physics problems

**Sought Concurrence**

No

**Attachments**

- Physics1125\_Syllabus.pdf: P1125 Syllabus  
*(Syllabus. Owner: Heckler, Andrew Frank)*
- P1125-ge-foundations-submission.pdf: GE Foundations submission  
*(Other Supporting Documentation. Owner: Heckler, Andrew Frank)*
- Cover letter.pdf: Cover letter  
*(Cover Letter. Owner: Heckler, Andrew Frank)*

**Comments**

**COURSE REQUEST**  
1125 - Status: PENDING

Last Updated: Vankeerbergen, Bernadette  
Chantal  
01/15/2025

**Workflow Information**

Status	User(s)	Date/Time	Step
Submitted	Heckler, Andrew Frank	11/18/2024 03:40 PM	Submitted for Approval
Approved	Heckler, Andrew Frank	12/04/2024 02:01 PM	Unit Approval
Approved	Vankeerbergen, Bernadette Chantal	01/15/2025 04:33 AM	College Approval
Pending Approval	Jenkins, Mary Ellen Bigler Hanlin, Deborah Kay Hilty, Michael Neff, Jennifer Vankeerbergen, Bernadette Chantal Steele, Rachel Lea	01/15/2025 04:33 AM	ASCCAO Approval



To whom it may concern:

We are respectfully submitting a new course request for Physics 1125. This course is a 4 credit-hour combination and adaptation of two existing physics courses: 1106 and 1107, which are both legacy GE courses and 5 credit-hours each. Further the new 1125 is designed to meet the new requirements for a GE Foundations: Natural Science course.

Physics 1125 is somewhat of a unique natural science course in that there are no formal lectures, and the students are continually engaged in hands on investigations, discussions, and presentation of their results and reasoning. The students are also engaged in a project to further learn about the connections between the science practices they learned in the course and historical societal developments and ethical considerations.

We look forward to the opportunity to offer this course. Please let us know of any questions or concerns.

Sincerely,

Andrew Heckler  
Professor  
Vice Chair for Administration  
Department of Physics  
Ohio State University  
heckler.6@osu.edu

# Practicing Physics – Matter, Heat, and Motion Syllabus

Phys1125 Autumn 2025

## Course Information

- **Course times:** Tuesdays and Thursdays 9:10 am to 11:15 am
- **Credit hours:** 4
- **Mode of delivery:** In-person, Smith Lab room 2082
- **Textbook:** All readings, videos, etc. will be provided in the classroom and on Carmen
- **Mode of delivery:** This course is in-person. Attendance and participation during class activities are expected.
- **Pace of activities:** In-class activities are self-paced, and students are expected to keep pace with weekly and monthly deadlines.
- **Credit hours and work expectations:** This is a 4 credit-hour lab course. According to [Ohio State bylaws on instruction](https://go.osu.edu/credithours) (go.osu.edu/credithours), students should expect around 4 hours and 10 minutes per week of time spent on direct instruction in addition to up to 2.5 hours of homework (reading and assignment preparation, projects) to receive a grade of C average. Typically, 2.5 hours of work outside of scheduled class time is enough for a good grade.

## Instructor

- **Name:** TBD
- **Email:** TBD
- **Office phone number:** TBD
- **Office location:** TBD
- **Student hours:** TBD
- **Preferred means of communication:**
  - My preferred method of communication for questions is **TBD**.



## Course Description

Students work in groups to perform investigations on density, motion, and thermodynamics and develop simple models to make and test quantitative predictions. Through discussions with instructors and peers, students consider the effects of science in society and apply their scientific skills to everyday situations. Intended for non-science majors, especially those contemplating a teaching career.

## Learning Outcomes

By the end of this course, students should successfully be able to:

- Gather and analyze data related to the topics of density, buoyancy, calorimetry, and one-dimensional motion
- Develop models on density, buoyancy, calorimetry, and one-dimensional motion and use these models to make quantitative predictions
- Make a relevant plot of the data, obtain a linear best fit line and equation, and interpret the slope and y-intercept
- Write operational definitions and explain and justify the need for standards
- Solve density, calorimetry, and linear motion problems using proportional reasoning
- Use multiple representations to describe situations related to density, buoyancy, calorimetry, and one-dimensional motion and translate between these representations
- Interpret the meaning of compound quantities, such as gram per centimeter cubed, and correctly use the information contained in them
- Relate position, velocity, and acceleration graphs for an object moving in one dimension with a constant acceleration
- Present measurements with appropriate uncertainty and use error propagation to obtain calculated values with appropriate uncertainty
- Use uncertainty to critically evaluate claims that two values are the same
- Evaluate the social and ethical implications of scientific claims in the media, using uncertainties, interpreting data presented in tables, figures, and graphs
- Recognize that, while current scientific models and practices are productive, science is an ongoing, iterative process for building and refining methods and models of the world and provide examples

## General Education (GEN) Expected Learning Outcomes

As part of the **Natural Sciences Foundations** of the General Education curriculum, this course is designed to prepare students to be able to do the following:

- Explain basic facts, principles, theories and methods of modern natural sciences, and describe and analyze the process of scientific inquiry.

Through the activities presented in the course materials, students will design and perform simple experiments that allow them to observe and explain basic physical concepts and develop and test models related to mass, volume, density, buoyancy, calorimetry, and motion in one dimension.

- Identify how key events in the development of science contribute to the ongoing and changing nature of scientific knowledge and methods.

Students will identify how scientific reasoning has shaped the course of history and how physics, and science in general, is an ongoing process by discussing the need for standards and operational definitions throughout the course and working on a semester-long project on the impact of science and technology on a historical event and how the historical circumstances pushed the development of scientific models and technology in a particular direction.

- Employ the processes of science through exploration, discovery and collaboration to interact directly with the natural world when feasible, using appropriate tools, models and analysis of data.

Students will employ the process of science by performing explorations and measurements in the lab, while working collaboratively in small groups and reporting results to instructors and peers during class and in group presentation. Students will gather, analyze, and interpret data following activity prompts in the course materials, making relevant plots, obtaining a best fit equation, and interpreting the meaning of the fit parameters. Students will present data and calculated quantities with appropriate uncertainty and use multiple representations to form mathematical models. Students will then use these models and proportional reasoning to make quantitative predictions.

- Analyze the inter-dependence and potential impacts of scientific and technological developments.

Throughout the term, students will apply the scientific practices learned and practiced in class to real-world problems. In addition, students will complete a semester-long project where they will read a book or watch a movie where the topics of the course are used and write a reflection on how the events presented in the movie or book and the scientific concepts are related.

- Evaluate social and ethical implications of natural scientific discoveries.

Students will be able to use uncertainty to critically evaluate claims that two values are the same or different as presented in news reports and will discuss the ethical implications of news reports not using uncertainties in making claims. Students will be able to use the concepts explored in the motion unit to analyze and reason about quantities as a function of time in the real world, discuss how these quantities change with time, and discuss the implications to society of these changes.

- Critically evaluate and responsibly use information from the natural sciences



Through discussions with instructors and peer presentations and feedback, students will be presented with appropriate ways to use data and uncertainties to make scientific claims, such as whether two values are the same. Students will be able to explain whether a quantity can be used to determine an outcome of an action (causes) or simply influences a result (correlated). All assignments and assessments will have this component of critically evaluating and responsibly using information, from their own data collection and models or to evaluate others' claims about the natural world.

# Grading

## How Your Grade is Calculated

Assignment Category	Percentage
Questions of the Day	~20%
Homework assignments	~10%
Video HW group assignments	~ 5%
Checkpoints	~25%
Project	~ 7%
Quizzes	~ 8%
Exams	~25%
Total	100%

See [Course Schedule](#) for due dates.

## Descriptions of Major Course Assignments

### Questions of the day

**Description:** A short assignment at the beginning of each class period, due during class.

**Academic integrity and collaboration:** You are expected to discuss the solution to the question of the day with your group. However, each student must submit their own answer, in their own words.

### Homework

**Description:** Due weekly as an online submission. Two problems that extrapolate the concepts and problems explored during class, or an essay reflecting on the concepts learned in class.

**Academic integrity and collaboration:** You are encouraged to discuss the solution to the homework problems with your classmates and instructor. However, each student must submit their own answer, in their own words. Any information from external sources must be properly cited; include the name of the work and pages, or a link if it is an online source. If you worked together with someone doing the homework, you are expected to mention this in the citations.

## Video Homework group assignments

**Description:** A short (at most 2 minutes) video produced by each group where a real-world application of the topics covered in class is discussed.

**Academic integrity and collaboration:** Video submissions are group assignments. One video will be submitted per group, all students must be seen actively participating in the presentation of the problem and solution, and all members of the same group will get the same grade. They are open notes, books, and internet; proper citation of sources is expected. Collaboration with other groups is allowed and encouraged.

## Checkpoints

**Description:** Discussion with instructor during class, where you present your work and explain your reasoning and conclusions, as well as answer questions about your work.

**Academic integrity and collaboration:** Everyone in the group is expected to participate in the discussion with the instructor. Group members are expected to help each other out and all members must demonstrate understanding for the entire group to get credit for the checkpoint.

## Projects

**Description:** An essay on the social and ethical issues that arise from scientific and technological developments, as presented in a book or movie. Students will read or watch about a social issue connected to the topics covered in class and will write an essay exploring the social and ethical issues raised. Students will submit a first draft, receive feedback from the instructors, submit a final draft, and receive feedback from at least three peers. As part of the project, each student must provide feedback to the final draft of at least three other students.

**Academic integrity and collaboration:** The project essay is an individual assignment. Discussion with others (students and instructors) of the topics and issues raised in the reading / watching is encouraged. However, each student must submit their own essay.

## Quizzes

**Description:** A combination of multiple-choice, short answer, and long answer questions related to the topics in the current unit. Each quiz will be in person during class time, and it should take about 1 hour to complete.

**Academic integrity and collaboration:** Quizzes are group assignments. All students are expected to collaborate and contribute to the answers. However, each student must submit their own answer, in their own words. Quizzes are closed book. However, students are allowed one piece of printer paper with handwritten notes.

## Exams

**Description:** A combination of multiple-choice, short answer, and long answer questions, as well as data collection and data analysis, related to the topics covered in the unit. There will be one exam at the end of each unit. Each exam will be in person during class time and should take about 2 hours to complete.

**Academic integrity and collaboration:** Exams consist of two parts: individual and group. The individual part of the exam is to be done individually. They are closed book. However, students are allowed one piece of printer paper with handwritten notes and no collaboration is allowed. The group part of the exam will be done in groups. One submission per group is required and all members of the group will receive the same grade. Collaboration with your group is expected and all members of the group are expected to contribute to the answers. Collaboration with other groups is not allowed.

## Grading Scale

93–100: A  
90–92.9: A-  
87–89.9: B+  
83–86.9: B  
80–82.9: B-  
77–79.9: C+  
73–76.9: C  
70–72.9: C-  
67–69.9: D+  
60–66.9: D  
Below 60: E

# Other Course Policies

## Academic Misconduct

See [Descriptions of Major Course Assignments](#) for specific guidelines about collaboration and academic integrity in the context of this online class.

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-38.7 (B) (<https://trusteed.osu.edu/bylaws-and-rules/3335-5>)). For additional information, see the Code of Student Conduct (<http://studentlife.osu.edu/csc/>).

## Disability Services

The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let us know immediately so that we can privately discuss options. To establish reasonable accommodations, we may request that you register with [Student Life Disability Services \(SLDS\)](#). After registration, make arrangements with us as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion.

If you are ill and need to miss class, including if you are staying home and away from others while experiencing symptoms of a viral infection or fever, please let us know immediately. In cases where illness interacts with an underlying medical condition, please consult with Student Life Disability Services to request reasonable accommodations. You can connect with them at [slds@osu.edu](mailto:slds@osu.edu); 614-292-3307; or [slds.osu.edu](https://slds.osu.edu/) (<https://slds.osu.edu/>)

## Religious Accommodations

Ohio State has had a longstanding practice of making reasonable academic accommodations for students’ religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, providing notice of specific dates for which they request alternative accommodations within 14 days after the first instructional day of the course. Instructors in turn shall not question the sincerity of a student’s religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to substitute for missed class work, or flexibility in due dates or research responsibilities. If concern arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after the course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the Office of Institutional Equity ([equity@osu.edu](mailto:equity@osu.edu)). ([Policy: Religious Holidays, Holy Days and Observances \(https://oaa.osu.edu/religious-holidays-holy-days-and-obervances \)](https://oaa.osu.edu/religious-holidays-holy-days-and-obervances))

# Course Schedule

Refer to Carmen for up-to-date due dates.

## Unit 1: Properties of Matter

<u>Week</u>	<u>Day</u>	<u>Assignment/Assessment</u>	<u>Classwork</u>
1	1	Question of the day #1	Section 1 – Intro to balancing
1	2	Question of the day #2 HW 1 due Friday Video 1 due Monday	Section 2 – Advanced balancing
2	3	Question of the day #3	Section 3 – Measurement of mass Section 4 – Uncertainty
2	4	Question of the day #4 HW 2 due Friday Video 2 due Monday	Section 5 – Operational Definitions Section 6 – Volume
3	5	Question of the day #5	Section 7 – Changes in mass, volume Section 8 – Distinguishing mass and volume
3	6	<b>QUIZ 1</b> HW 3 due Friday	None
	7	Question of the day #6	Section 9 – Proportional reasoning Section 10 – Density
4	8	Question of the day #7 HW 4 due Friday Video 3 due Monday	Section 11 – Measurement of density
5	9	Question of the day #8	Section 12 – Sink/Float 1
5	10	Question of the day #9 HW 5 due Friday Video 4 due Monday	Section 12 – Sink/Float 2
6	11	Question of the day #10	Section 13 – Graphing mass and volume
6	12	<b>EXAM 1</b> HW 6 due Friday (extra) Project First Draft Due	None



Unit 2: Heat and Temperature

<u>Week</u>	<u>Day</u>	<u>Assignment/Assessment</u>	<u>Classwork</u>
7	13	Question of the day #11	Section 1 – Temperature Section 2 – Changes in temperature
7	14	Question of the day #12 HW 7 due Friday Video 5 due Monday	Section 3 – Heat transfer
8	15	Question of the day #13	Section 4 – Heat capacity and specific heat
8		No class – Autumn Break	No class – Autumn Break
9	16	Question of the day #14	Section 5 – Heat capacity / specific heat
9	17	Question of the day #15 HW 8 due Friday Video 6 due Monday	Section 6 – Proportional reasoning Section 7 – Phase changes 1
10	18	Question of the day #16	Section 7 – Phase changes 2
10	19	<b>EXAM 2</b> HW 9 due Friday (extra)	None



Unit 3: Motion and Forces

<u>Week</u>	<u>Day</u>	<u>Assignment/Assessment</u>	<u>Classwork</u>
11	20	Question of the day #17	Section 1 – Uniform Motion
11	21	Question of the day #18 HW 10 due Friday Video 7 due Monday	Section 2 – Position and time Section 3 – Non-uniform motion 1
12	22	No class – Election day	No class – Election day
12	23	Question of the day #19 HW 11 due Friday Video 8 due Monday	Section 3 – Non-uniform motion 2 Section 4 – Velocity
13	24	Question of the day #20	Section 5 – Acceleration
13	25	<b>QUIZ 2</b> HW 12 due Friday Project Final Draft due	None
14	26	Question of the day #21	Section 6 – Motion and graphs
14	27	Question of the day #22 HW 13 due Friday Video 9 due Monday	Section 7 – Forces 1
15	28	Question of the day #23	Section 7 – Forces 2
15	29	No class – Thanksgiving	No class – Thanksgiving
16	30	<b>EXAM 3</b> HW 14 due (extra) Project Peer Feedback due	None

# GE Foundation Courses

## Overview

Courses that are accepted into the General Education (GE) Foundations provide introductory or foundational coverage of the subject of that category. Additionally, each course must meet a set of Expected Learning Outcomes (ELO). Courses may be accepted into more than one Foundation, but ELOs for each Foundation must be met. It may be helpful to consult your Director of Undergraduate Studies or appropriate support staff person as you develop and submit your course.

This form contains sections outlining the ELOs of each Foundation category. You can navigate between them using the Bookmarks function in Acrobat. Please enter text in the boxes to describe how your class meets the ELOs of the Foundation(s) to which it applies. Because this document will be used in the course review and approval process, you should use language that is clear and concise and that colleagues outside of your discipline will be able to follow. Please be as specific as possible, listing concrete activities, specific theories, names of scholars, titles of textbooks etc. Your answers will be evaluated in conjunction with the syllabus submitted for the course.

## Accessibility

If you have a disability and have trouble accessing this document or need to receive the document in another format, please reach out to Meg Daly at [daly.66@osu.edu](mailto:daly.66@osu.edu) or call 614-247-8412.

## GE Rationale: Foundations: Race, Ethnicity, and Gender Diversity (3 credits)

Requesting a GE category for a course implies that the course fulfills **all** the expected learning outcomes (ELOs) of that GE category. To help the reviewing panel evaluate the appropriateness of your course for the Foundations: Race, Ethnicity, and Gender Diversity, please answer the following questions for each ELO.

### A. Foundations

Please explain in 50-500 words why or how this course is introductory or foundational for the study of Race, Ethnicity and Gender Diversity.

Course Subject & Number: \_\_\_\_\_

**B. Specific Goals of Race, Ethnicity, and Gender Diversity**

GOAL 1: Successful students will engage in a systematic assessment of how historically and socially constructed categories of race, ethnicity, and gender, and possibly others, shape perceptions, individual outcomes, and broader societal, political, economic, and cultural systems.

**Expected Learning Outcome 1.1: Successful students are able to describe and evaluate the social positions and representations of categories including race, gender, and ethnicity, and possibly others.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 1.2: Successful students are able to explain how categories including race, gender, and ethnicity continue to function within complex systems of power to impact individual lived experiences and broader societal issues.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 1.3: Successful students are able to analyze how the intersection of categories including race, gender, and ethnicity combine to shape lived experiences.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 1.4: Successful students are able to evaluate social and ethical implications of studying race, gender, and ethnicity.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

GOAL 2: Successful students will recognize and compare a range of lived experiences of race, gender, and ethnicity.

**Expected Learning Outcome 2.1: Successful students are able to demonstrate critical self- reflection and critique of their social positions and identities.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 2.2: Successful students are able to recognize how perceptions of difference shape one’s own attitudes, beliefs, or behaviors.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 2.3: Successful students are able to describe how the categories of race, gender, and ethnicity influence the lived experiences of others.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met.

**GE Rationale: Foundations: Social and Behavioral Sciences (3 credits)**

Requesting a GE category for a course implies that the course **all** expected learning outcomes (ELOs) of that GE category. To help the reviewing panel evaluate the appropriateness of your course for the Foundations: Social and Behavioral Sciences, please answer the following questions for each ELO.

**A. Foundations**

Please explain in 50-500 words why or how this course is introductory or foundational in the study of Social and Behavioral Sciences.

Course Subject & Number: \_\_\_\_\_

**B. Specific Goals of Social and Behavioral Sciences**

GOAL 1: Successful students will critically analyze and apply theoretical and empirical approaches within the social and behavioral sciences, including modern principles, theories, methods, and modes of inquiry.

**Expected Learning Outcome 1.1: Successful students are able to explain basic facts, principles, theories and methods of social and behavioral science.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 1.2: Successful students are able to explain and evaluate differences, similarities, and disparities among institutions, organizations, cultures, societies, and/or individuals using social and behavioral science.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

GOAL 2: Successful students will recognize the implications of social and behavioral scientific findings and their potential impacts.

**Expected Learning Outcome 2.1: Successful students are able to analyze how political, economic, individual, or social factors and values impact social structures, policies, and/or decisions.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 2.2: Successful students are able to evaluate social and ethical implications of social scientific and behavioral research.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)



Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 2.3: Successful students are able to critically evaluate and responsibly use information from the social and behavioral sciences.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**GE Rationale: Foundations: Historical or Cultural Studies (3 credits)**

Requesting a GE category for a course implies that the course fulfills the expected learning outcomes (ELOs) of that GE category. To help the reviewing panel evaluate the appropriateness of your course for the Foundations: Historical and Cultural Studies, please answer the following questions for each ELO. Note that for this Foundation, a course need satisfy either the ELOs for Historical Studies or the ELOs for Cultural Studies.

**A. Foundations**

Please explain in 50-500 words why or how this course is introductory or foundational in the study of History **or** Cultures.

Course Subject & Number: \_\_\_\_\_

**B. Specific Goals of Historical *or* Cultural Studies**

**Historical Studies (A) Goal:** Successful students will critically investigate and analyze historical ideas, events, persons, material culture and artifacts to understand how they shape society and people.

**Expected Learning Outcome 1.1A:** Successful students are able to identify, differentiate, and analyze primary and secondary sources related to historical events, periods, or ideas. Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 1.2A:** Successful students are able to use methods and theories of historical inquiry to describe and analyze the origin of at least one selected contemporary issue. Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 1.3A: Successful students are able to use historical sources and methods to construct an integrated perspective on at least one historical period, event or idea that influences human perceptions, beliefs, and behaviors.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 1.4A: Successful students are able to evaluate social and ethical implications in historical studies.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

Cultural Studies (B) Goal: Successful students will evaluate significant cultural phenomena and ideas to develop capacities for aesthetic and cultural response, judgment, interpretation, and evaluation.

**Expected Learning Outcome 1.1B: Successful students are able to analyze and interpret selected major forms of human thought, culture, ideas or expression.** Please link this ELO to the course goals and topics and identify the *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 1.2B: Successful students are able to describe and analyze selected cultural phenomena and ideas across time using a diverse range of primary and secondary sources and an explicit focus on different theories and methodologies.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 1.3B: Successful students are able to use appropriate sources and methods to construct an integrated and comparative perspective of cultural periods, events or ideas that influence human perceptions, beliefs, and behaviors.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 1.4B: Successful students are able to evaluate social and ethical implications in cultural studies.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met.

### **GE Rationale: Foundations: Writing and Information Literacy (3 credits)**

Requesting a GE category for a course implies that the course fulfills **all** expected learning outcomes (ELOs) of that GE category. To help the reviewing panel evaluate the appropriateness of your course for the Foundations: Writing and Information Literacy, please answer the following questions for each ELO.

Course Subject & Number: \_\_\_\_\_

### A. Foundations

Please explain in 50-500 words why or how this course is introductory or foundational in the study of Writing and Information Literacy.

### B. Specific Goals of Writing and Information Literacy

GOAL 1: Successful students will demonstrate skills in effective reading, and writing, as well as oral, digital, and/or visual communication for a range of purposes, audiences, and context.

**Expected Learning Outcome 1.1: Successful students are able to compose and interpret across a wide range of purposes and audiences using writing, as well as oral, visual, digital and/or other methods appropriate to the context.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. Explain how the course includes opportunities for feedback on writing and revision. Furthermore, please describe how you plan to insure sufficiently low instructor-student ratio to provide efficient instruction and feedback. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 1.2: Successful students are able to use textual conventions, including proper attribution of ideas and/or source, as appropriate to the communication situation.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. Is an appropriate text, writing manual, or other resource about the pedagogy of effective communication being used in the course? (50-700 words)

**Expected Learning Outcome 1.3: Successful students are able to generate ideas and informed responses incorporating diverse perspectives and information from a range of sources, as appropriate to the communication situation.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 1.4: Successful students are able to evaluate social and ethical implications in writing and information literacy practices.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

GOAL 2: Successful students will develop the knowledge, skills, and habits of mind needed for information literacy.

**Expected Learning Outcome 2.1: Successful students are able to demonstrate responsible, civil, and ethical practices when accessing, using, sharing, or creating information.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)



Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 2.2: Successful students are able to locate, identify and use information through context appropriate search strategies.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 2.3: Successful students are able to employ reflective and critical strategies to evaluate and select credible and relevant information sources.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

## **GE Rationale: Foundations: Literary, Visual, or Performing Arts (3 credits)**

Requesting a GE category for a course implies that the course fulfills **all** expected learning outcomes (ELOs) of that GE category. To help the reviewing panel evaluate the appropriateness of your course for the Foundations: Literary, Visual, and Performing Arts, please answer the following questions for each ELO.

### **A. Foundations**

Please explain in 50-500 words why or how this course is introductory or foundational in the study of Literary, Visual, or Performing Arts.

### **B. Specific Goals**

Goal 1: Successful students will analyze, interpret, and evaluate major forms of human thought, cultures, and expression; and demonstrate capacities for aesthetic and culturally informed understanding.

**Expected Learning Outcome 1.1: Successful students are able to analyze and interpret significant works of design or visual, spatial, literary or performing arts.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 1.2: Successful students are able to describe and explain how cultures identify, evaluate, shape, and value works of literature, visual and performing art, and design.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 1.3: Successful students are able to evaluate how artistic ideas influence and shape human beliefs and the interactions between the arts and human perceptions and behavior.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 1.4: Successful students are able to evaluate social and ethical implications in literature, visual and performing arts, and design.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Goal 2: Successful students will experience the arts and reflect on that experience critically and creatively.

**Expected Learning Outcome 2.1: Successful students are able to engage in informed observation and/or active participation within the visual, spatial, literary, or performing arts and design.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 2.2: Successful students are able to critically reflect on and share their own experience of observing or engaging in the visual, spatial, literary, or performing arts and design.**

Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**GE Rationale: Foundations: Natural Science (4 credits)**

Requesting a GE category for a course implies that the course fulfills **all** expected learning outcomes (ELOs) of that GE category. To help the reviewing panel evaluate the appropriateness of your course for the Foundations: Natural Sciences, please answer the following questions for each ELO.

**A. Foundations**

Please explain in 50-500 words why or how this course is introductory or foundational in the study of Natural Science.

Course Subject & Number: \_\_\_\_\_

## **B. Specific Goals for Natural Sciences**

GOAL 1: Successful students will engage in theoretical and empirical study within the natural sciences, gaining an appreciation of the modern principles, theories, methods, and modes of inquiry used generally across the natural sciences.

**Expected Learning Outcome 1.1: Successful students are able to explain basic facts, principles, theories and methods of modern natural sciences; describe and analyze the process of scientific inquiry.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 1.2: Successful students are able to identify how key events in the development of science contribute to the ongoing and changing nature of scientific knowledge and methods.** Please link this ELO to the course goals and topics and indicate specific activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 1.3: Successful students are able to employ the processes of science through exploration, discovery, and collaboration to interact directly with the natural world when feasible, using appropriate tools, models, and analysis of data.** Please explain the 1-credit hour equivalent experiential component included in the course: e.g., traditional lab, course-based research experiences, directed observations, or simulations. Please note that students are expected to analyze data and report on outcomes as part of this experiential component. *(50-1000 words)*

Course Subject & Number: \_\_\_\_\_

GOAL 2: Successful students will discern the relationship between the theoretical and applied sciences, while appreciating the implications of scientific discoveries and the potential impacts of science and technology.

**Expected Learning Outcome 2.1: Successful students are able to analyze the inter-dependence and potential impacts of scientific and technological developments.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 2.2: Successful students are able to evaluate social and ethical implications of natural scientific discoveries.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)



Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 2.3: Successful students are able to critically evaluate and responsibly use information from the natural sciences.** Please link this ELO to the course goals and topics and indicate *specific* activities/ assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**GE Rationale: Foundations: Mathematical and Quantitative Reasoning (or Data Analysis) (3 credits)**

Requesting a GE category for a course implies that the course fulfills **all** expected learning outcomes (ELOs) of that GE category. To help the reviewing panel evaluate the appropriateness of your course for the Foundations: Mathematical and Quantitative Reasoning (or Data Analysis), please answer the following questions for each ELO.

**A. Foundations**

Please explain in 50-500 words why or how this course is introductory or foundational in the study of Mathematical & Quantitative Reasoning (or Data Analysis).

**B. Specific Goals for Mathematical & Quantitative Reasoning/Data Analysis**

Goal: Successful students will be able to apply quantitative or logical reasoning and/or mathematical/statistical analysis methodologies to understand and solve problems and to communicate results.

**Expected Learning Outcome 1.1: Successful students are able to use logical, mathematical and/or statistical concepts and methods to represent real-world situations.** Please link this ELO to the course goals and topics and indicate *specific* activities/ assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 1.2: Successful students are able to use diverse logical, mathematical and/or statistical approaches, technologies, and tools to communicate about data symbolically, visually, numerically, and verbally.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 1.3: Successful students are able to draw appropriate inferences from data based on quantitative analysis and/or logical reasoning.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course Subject & Number: \_\_\_\_\_

**Expected Learning Outcome 1.4: Successful students are able to make and evaluate important assumptions in estimation, modeling, logical argumentation, and/or data analysis.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

**Expected Learning Outcome 1.5: Successful students are able to evaluate social and ethical implications in mathematical and quantitative reasoning.** Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)