Syllabus Development: Physics 1

As you proceed through the Syllabus Development Worksheet, you may use the template below to confirm evidence within your existing syllabus and/or to describe additional information you intend to include in your syllabus to demonstrate how the requirement is met.

1. Review the information provided in the Syllabus Development Guide for each Curricular Requirement or Scoring Component.
2. Use the Evaluation Guidelines to determine the level of detail needed to meet the Curricular Requirement or Scoring Component in its entirety.
3. Add a brief description to indicate how your syllabus currently meets the requirements or what you intend to include to ensure that the requirement is met.

Example

Curricular Requirement 1	**Students and teachers have access to college-level resources including college-level textbooks and reference materials in print or electronic format.**
Evaluation Guideline(s)	The syllabus must cite the title, author, and publication date of a college-level textbook.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met: My syllabus includes a citation of the following college level Physics textbook in the resource section: Etkina, Eugenia, Michael Gentile, and Alan Van Heuvelen. *College Physics*. San Francisco, CA: Pearson, 2014.	

Curricular Requirement 1	**Students and teachers have access to college-level resources including college-level textbooks and reference materials in print or electronic format.**
Evaluation Guideline(s)	The syllabus must cite the title, author, and publication date of a college-level textbook.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Curricular Requirement 2	**The course design provides opportunities for students to develop understanding of the AP Physics 1 foundational physics principles in the context of the big ideas that organize the curriculum framework.**
Scoring Component 2a	The course design provides opportunities for students to develop understanding of the foundational principles of kinematics in the context of the big ideas that organize the curriculum framework.
Evaluation Guideline(s)	The syllabus must identify the big idea connected to kinematics. The syllabus must explicitly include 1D and 2D kinematics.
Key Term(s)	**Big ideas:** encompass the core scientific principles, theories, and processes of physics that cut across traditional content boundaries and provide students a broad way of thinking about the physical world.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Scoring Component 2b	The course design provides opportunities for students to develop understanding of the foundational principles of dynamics in the context of the big ideas that organize the curriculum framework.
Evaluation Guideline(s)	The syllabus must identify all of the big ideas connected to dynamics. The syllabus must explicitly include Newton's laws
Key Term(s):	**Big ideas:** encompass the core scientific principles, theories, and processes of physics that cut across traditional content boundaries and provide students a broad way of thinking about the physical world
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Scoring Component 2c	The course design provides opportunities for students to develop understanding of the foundational principles of gravitation and circular motion in the context of the big ideas that organize the curriculum framework.
Evaluation Guideline(s)	The syllabus must identify all of the big ideas connected to the universal law of gravitation and circular motion.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Scoring Component 2d	The course design provides opportunities for students to develop understanding of the foundational principles of simple harmonic motion in the context of the big ideas that organize the curriculum framework.
Evaluation Guideline(s)	The syllabus must identify all of the big ideas connected to simple harmonic motion. The syllabus must explicitly include simple pendulum and mass-spring systems. .
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Scoring Component 2e	The course design provides opportunities for students to develop understanding of the foundational principles of linear momentum in the context of the big ideas that organize the curriculum framework.
Evaluation Guideline(s)	The syllabus must identify all of the big ideas connected to linear momentum. The syllabus must explicitly include impulse, momentum, and conservation of linear momentum.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Scoring Component 2f	The course design provides opportunities for students to develop understanding of the foundational principle of energy in the context of the big ideas that organize the curriculum framework.
Evaluation Guideline(s)	The syllabus must identify all of the big ideas connected to energy. The syllabus must explicitly include work, energy, power, and conservation of energy.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Scoring Component 2g	The course design provides opportunities for students to develop understanding of the foundational principles of rotational motion in the context of the big ideas that organize the curriculum framework.
Evaluation Guideline(s)	The syllabus must identify all of the big ideas connected to rotational motion. The syllabus must explicitly include torque, rotational kinematics and energy, rotational dynamics, and conservation of angular momentum.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Scoring Component 2h	The course design provides opportunities for students to develop understanding of the foundational principles of electrostatics in the context of the big ideas that organize the curriculum framework
Evaluation Guideline(s)	The syllabus must identify all of the big ideas connected to electrostatics. The syllabus must explicitly include electric charge, conservation of charge,

	and electric force.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Scoring Component 2i	The course design provides opportunities for students to develop understanding of the foundational principles of electric circuits in the context of the big ideas that organize the curriculum framework.
Evaluation Guideline(s)	The syllabus must identify all of the big ideas connected to electric circuits. The syllabus must explicitly include Ohm's law and Kirchhoff's laws applied to simple DC resistor circuits.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Scoring Component 2j	The course design provides opportunities for students to develop understanding of the foundational principles of **mechanical** waves in the context of the big ideas that organize the curriculum framework.
Evaluation Guideline(s)	The syllabus must identify the big idea connected to mechanical waves. The syllabus must explicitly include mechanical waves and sound.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Curricular Requirement 3	**Students have opportunities to apply AP Physics 1 learning objectives connecting across enduring understandings as described in the curriculum framework. These opportunities must occur in addition to those within laboratory investigations.**
Evaluation	The syllabus must provide a brief description of at least one assignment or

Guideline(s)	activity outside the laboratory experience designed to apply learning objectives connecting across two or more enduring understandings. The syllabus must label the learning objectives drawn from at least two enduring understandings.
Key Term(s)	**Enduring understandings:** incorporate the core concepts that students should retain from the learning experience. **Learning objectives:** provide clear and detailed articulation of what students should know and be able to do. Learning objectives are numbered to correspond with each of the big ideas, enduring understandings, and essential knowledge. For example: LO 6.A.1.1 indicates the big idea (6), enduring understanding (6.A), and essential knowledge (6.A.1).
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Curricular Requirement 4	**The course provides students with opportunities to apply their knowledge of physics principles to real world questions or scenarios (including societal issues or technological innovations) to help them become scientifically literate citizens .**
Evaluation Guideline(s)	The syllabus must label and provide a brief description of at least one assignment or activity requiring students to apply their knowledge of physics principles to understand real world questions or scenarios.
Key Term(s)	**Real world:** application of physics principles, theories, or models to everyday situations, phenomena, or experiences found outside of the classroom.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Curricular Requirement 5	**Students are provided with the opportunity to spend a minimum of 25 percent of instructional time engaging in hands-on laboratory work with an emphasis on inquiry-based investigations.**
Evaluation Guideline(s)	The syllabus must include an explicit statement that at least 25 percent of instructional time is spent in laboratory experiences.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Curricular Requirement 6	**Students are provided the opportunity to engage in inquiry-based laboratory investigations that support the foundational principles and apply all seven science practices defined in the curriculum framework.**
Scoring Component 6a	The laboratory work used throughout the course includes investigations that support the foundational AP Physics 1 principles.
Evaluation Guideline(s)	The syllabus **must** list and provide a brief description for a minimum of 14 laboratory investigations that collectively support a majority of the foundational principles in the course.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Scoring Component 6b	The laboratory work used throughout the course includes guided-inquiry laboratory investigations allowing students to apply all seven science practices
Evaluation Guideline(s)	Descriptions of laboratory investigations must indicate how, collectively, the lab experiences provide students opportunities to apply all seven science practices. (It is not required that all seven practices be included within any one laboratory investigation.) A minimum of seven investigations must be labeled with the term guided-inquiry and/or open-inquiry.
Key Term(s)	**Guided-inquiry:** at this level, students investigate a teacher-presented question using student designed/selected procedures. **Open-inquiry:** at this level, students investigate topic-related questions that are formulated through student designed/selected procedures.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Curricular Requirement 7	**The course provides opportunities for students to develop their communication skills by recording evidence of their research of literature or scientific investigations through verbal, written, and graphic presentations.**
Evaluation Guideline(s)	The syllabus must include the components of the lab reports required of students for all the laboratory investigations engaged in throughout the course. The syllabus must include an explicit statement that students are required to maintain a lab journal, notebook, or portfolio (hard-copy or electronic) that includes evidence of their lab work.
Key Term(s)	**Components:** examples include questions, predictions, explanation of phenomena, data collection, data analysis/graphs, error analysis/sources of uncertainty, statistics, and conclusions.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	

Curricular Requirement 8	**The course provides opportunities for students to develop written and oral scientific argumentation skills.**
Evaluation Guideline(s)	The syllabus must label and provide a brief description of at least one activity or assignment where students engage in dialogue or peer critique where they offer evidence and make or refute claims based on available evidence supported by physics reasoning or rationale.
Key Term(s)	**Scientific argumentation:** articulate reasons for making and refuting claims, engage in conversation or critique with a peer, and respond to counter claims. **Physics reasoning:** using foundational physics principles to make or refute claims based on evidence.
Briefly Describe how your syllabus meets the requirement or what you intend to include to demonstrate how the requirement is met:	