



San Bernardino

Valley College

DISTANCE EDUCATION ADDENDUM

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|------------------------|-------------------|
| COURSE ID: | Physics 101 |
| DEPARTMENT: | Physics/Astronomy |
| SUBMITTED BY: | Anna Tolstova |
| DATE SUBMITTED: | 5/18/2020 |

For additional resources on completing this form, please visit the DE Website:

www.valleycollege.edu/onlinefacultyresources

- 1. Please select the distance education method that describe how the course content will be delivered. Check ALL methods that will be used for offering this course, even if previously approved.**

- FO – Fully Online
- PO – Partially Online
- OPA – Online with In-Person Proctored Assessments
- FOMA – Fully Online with Mutual Agreement

- 2. In what way will this course, being offered in distance education format, meet the needs of the campus? (Ex: Student Access, Campus Strategic Plan, Campus Mission Statement, Online Education Initiative (OEI), Student Equity, Student Needs). Please be specific.**

The Physics 101 course is an introductory physics course and is designed to meet the science requirements for different majors. The course is an Associate Degree Applicable Course and credit transfers to CSU and UC. The Physics 101 class is a prerequisite for the Physics 202 course, so students majoring in physics, chemistry, biology, computer science, and other majors must take the class.

- 3. Will this course require proctored exams?**

- No
- Yes - If yes, how?

- 4. How will the design of this course address student accessibility? Are you including any of the following?**

- Captioned Videos
- Transcripts for Audio Files
- Alternative Text for Graphics
- Formatted Headings
- Other – If other, please explain.



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5. **Provide a specific example of how the instructor will provide synchronous office hours for distance education students? (Ex: Online Conference Tool, Cranium Classroom, Zoom, Pisces, Skype, etc.)**

Instructors will hold their synchronous office hours using Zoom meetings and schedule the online meetings through Canvas and ConferZoom. During these Zoom meetings, instructors may also use breakout rooms to split students into separate sessions. Instructor will also clearly state the synchronous office hours in the syllabus, which will be published on Canvas.

For those individuals who need extra help, instructors may offer one-on-one Zoom meetings. Instructor will use a drawing tablet or the Zoom white board to explain the concepts and answer students' questions.

6. **Provide a specific example of how this course's design ensures regular and effective instructor-student contact? (Ex: Threaded discussion forums, weekly announcements, instructor prepared materials, posting video and audio files, timely feedback on exams and projects, synchronous online office hours, synchronous online meetings, synchronous online lectures, etc.)**

Instructors will have synchronous online meetings for lectures, office hours and majority of labs through Zoom, and schedule these meetings through ConferZoom on Canvas. Instructors will remind their students that the course is partially online and create a Welcome letter approximately one week before the course begins. Instructor will create Modules and use this as "Home Page" on Canvas. Instructors will use Modules to organize the course content, inform students about week's schedule, and as a reminder about upcoming assignments. Instructors may import/download a course template from our website and update it for their course.

Instructors will post lecture notes, Power Point Slides, files, and assignments on Canvas, provide online resources. Instructors will record the online meetings and post the links of the recording meetings on Canvas. Instructor will share screen, use a drawing tablet or Zoom white board to explain the course concepts and answer students' questions during the online meetings. Instructors may split their students into separate breakout rooms for small discussions.

After students participate or review the lectures, students will be required to participate in a thread discussion, where they must express their opinion and comment on at least two other students posts.

Instructors will create online Exams on Canvas, Quizzes, and allow students to see their grade for the exam and all the questions, including their answer choice and the correct answers after they submit the exam. Instructors may also discuss the exam problems during a lecture or office hours to provide additional feedback. There will be five online exams and a final.

Instructors will use physics laboratory simulations and educational exercises, provide and post a step-by-step instructional guide for virtual labs on Canvas. There are some labs that cannot effectively be taught online. They need the students to be physically present at the lab. 12 hours out of total 54 lab hours will be in person. Instructors will hold the in-person labs in the lab rooms (PS 206 or PS 214) during the regular lab sessions.



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7. Provide a specific example of how this course will ensure regular and effective student-student contact?

(Ex: Threaded discussion forums, assigned group projects, threaded discussions, Notebowl, peer-to-peer feedback, synchronous online meetings, etc.)

Instructors will provide clear expectations and timely constructive feedback to students about assignments and questions during the online meetings, and post clear instructions on Canvas, Modules.

Student will converse on Canvas threads. They will be given bi-weekly projects, which they will have to complete in groups. They will be invited to download the Zoom app and record their meetings (recordings will be submitted on Canvas) in order to ensure that all participate in the making of the project assignment. They will ensure that they communicate, see each other, and work together. A troubleshooting Canvas chat will be open for groups to come and ask their instructor questions when they'll encounter questions/problems.

Instructors will contact students, who are not participating by e-mailing them. Instructors will encourage faculty-to-students and student-to-students interaction by using Icebreaker activities, Polls, and Breakout Room sessions during their online class/meetings. For the Icebreaker activities, instructors will compose an initial icebreaker discussion prompt and will engage their students in a reflective discussion. For Breakout Rooms, a leader will be assigned in each room.

During the Peer-to-Peer sessions, students will share their screen and work together to improve their understanding and learning. Instructors will join groups, participate in the students' discussions when the need arises, and modify these in-class activities as necessary.

8. Describe what students in this online version of the course will do in a typical week on this class. Include the process starting after initial log in.

Instructors will use Modules as a "Home Page" on Canvas. Students will be informed about week schedule, assignments, and announcements through Modules.

Instructors will begin each online class with a short, student-friendly, statement indicating the goal of the lesson. During the online lectures, instructors will use Power Point Slides, a drawing tablet or Zoom white board to explain the course concept. Instructors may split their students into separate breakout rooms for small discussions. Instructor will also record the meetings and post the files on Canvas in Modules, so students can review these meetings.

Students will have a weekly online quiz, which they can access on Canvas. The reminder about the quiz will be on Modules. After students will submit their quiz, they will be able to see their grade and all the questions, including their answer choice and the correct answers.

At the end of the week they will be invited to participate in a couple of interactive and dynamic discussion thread of topics cover in lectures in which instructors will intervene to get the discussion going and stimulate critical thinking. Once a week there will be a face to face meeting on Zoom, students will play games or (like Kahoot) related to the lectures covered and summarize what has been discussed. Instructors also will create Icebreaker activities for their student.

During the online labs, instructor will use physics laboratory simulations and educational exercises. Students will be able to manipulate with these simulations and interact with them by dragging objects or changing the data. Instructors will provide a step-by-step instructional guideline for the lab and post the



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file on Canvas. Using data from previously performed lab experiments, students will create their lab report and will e-mail it to their instructor.

9. Provide a sample statement that could be included in the syllabus for this course that communicates to students the frequency and timeliness of instructor-initiated contact and student feedback.

This course will meet online via ConferZoom on Canvas during the normal lecture and discussion hours. ConferZoom allows students join in with audio, video, or just text. Students will learn and participate live and remotely.

Lecture hours:

I will conduct lectures via ConferZoom on Canvas two times per week: Monday and Wednesday, from 9:35 to 10:50 am. During the lectures, if you have a question, please raise your hand or post a comment in the chat pane and it will be answered accordingly. Students are strongly encouraged to participate during the lecture, just like in the classroom environment.

A “Typical week” section will be added with the following:

A TYPICAL WEEK INSTRUCTIONS

1. Read your book chapter(s) for the week.
2. Listen to the video lecture on Canvas, and participate in each threads (minimum one participation and one comment on a classmate’s interaction).
3. After lecture complete the worksheet and submit.
4. Take the quiz on Canvas.
5. Attend the discussion at the end of the week.
6. Connect with your group on Zoom once a week to build your bi-weekly project (remember to record your meeting and submit it on Canvas).
7. Keep an eye on the syllabus each week (it changes often, and quizzes, projects, exams, and reading for the week are announced), check scheduled assignments to be on top of your grade.
8. If you miss any assignment for justified cause, you must catch up during that same week. No make ups will be accepted after the Sunday of that due week, 11:59pm.

10. Provide a specific example of how regular and effective student-student interaction may occur in this online course.

Instructors will promote learning through group interaction. They may use Breakout Rooms during the discussion topics to split students into separate sessions as a Think-Pair-Share technique or Peer-to-Peer collaboration.

Students will be required to attend group zoom meetings weekly (to complete group assignments specifically designed to get everyone involved in the group), these meetings will be recorded which will allow instructors to take attendance, monitor appropriateness of the conversation and students’ thinking process and progress; this is outside their regular other communications to get work done. They will be given a list of interactive apps they can use like Zoom, to talk to each other. They will also be required to grade one group’s project, which will again require them to meet to debate.



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There will also be thread discussions (or icebreaker activity) with requirements to post and comment on others' posts. Guidelines and templates will be given to avoid standard short responses such as "I agree".

11. Provide a specific example of how regular and effective instructor-student interaction may occur in this online course.

Instructors will begin each online lesson with a short, student-friendly, statement indicating the goal of the lesson. Instructors will always check for students' understanding by asking questions, will differentiate instruction based on students' learning and needs. Instructors will also create and use Polls for the Zoom meetings, and will send e-mail reminders. Instructors will use Canvas, Announcements, and Modules to connect with students and keep them updated.

To be effective regular feedback will be provided daily. Engaging students in the discussion board will facilitate instructor-student interaction. Students will be asked to write three things they have learned and give three question they have on the topics being discussed. A zoom link will be provided where the instructor will provide feedback on students' questions.

12. Does this course include lab hours? No Yes – If yes, how are you going to accommodate the typical face to face activities in an online environment?

During the online lab, instructor will use physics laboratory simulations and educational exercises. Students will be able to explore and manipulate with these simulations by dragging objects or changing the data. For instance, Physics Department is using PhEt Interactive Simulations, a website with free science simulations such as

<https://phet.colorado.edu/en/simulations/category/physics>

<http://vlab.amrita.edu/>

Instructors will provide step-by-step instructions for each lab and post the files on Canvas. Using data from previously performed lab experiments as well as simulation generated data, students will then create and submit/e-mail their lab report.

Although these online labs may not allow students to physically interact with laboratory equipment. However, they provide a great resource for students to understand the theoretical reasons behind the labs additionally students will be able to focus on data validation and analysis.

There are some labs that cannot effectively be taught online. They need the students to be physically present at the lab. 12 hours out of total 54 lab hours will be in person. Instructors will hold the in-person labs in the lab rooms (PS 206 or PS 214) during the regular lab sessions.



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13. How will you accommodate the SLO and Course Objectives in an online environment?

The Physics Department will ensure that outcome assessment are ongoing and used to improve students learning and achievement in even in the online environment. Additionally, there will be an evaluation of SLOs as usual.

1. Students will demonstrate an understanding of basic, physical concepts by correctly describing and identifying these concepts.

Each lecture and videos are designed to address this SLO. Quizzes, tests, and worksheets will be used as way to measure effectiveness in meeting this SLO.

2. Given new situations, by applying the basic scientific principles, students will correctly solve simple problems by the application of the concepts of physics.

Each lecture and videos are designed to address this SLO. Tests and discussion thread will be used as way to measure how well this SLO is being met, through intellectual and practical checkpoints throughout such as asking students to make predictions and/or solve simple problems.

3. Also, given a particular laboratory physical objective, students will correctly construct physical systems, learn to use and manipulate laboratory apparatus, and correctly make and analyze measurements of these physical systems.

Each lab is designed to address this SLO. Lab instructions are designed to measure effectiveness in meeting this SLO. Lab PHET simulations are used as a way to measure effectiveness in meeting this SLO.

For SLO #1 and SLO #2, a percentage of how many students scored within the grade ranges (A, B, C, D, and F) will be calculated to represent the students' ability to not only understand the basic concepts, but also to be able to solve a variety of physical situations. For SLO #3, a percentage of how many students have lab participation and lab report averages falling within the same grade ranges will be calculated. The data will represent the students' ability to assemble, use, and analyze physical systems.

The Learning Course Objectives are staying the same in the online environment, and instructors will make this as priority.

14. Are modifications needed to SLOs or Course Objectives in order to teach this course in the online modality?

No Yes – If yes, please explain the changes needed.

(It is advised that if you are changing course content or objectives that you speak with the Curriculum Co-Chair or Articulation Officer for guidance moving forward.)



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To be completed by a member of the Curriculum Committee Review Team:

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| CURRICULUM CHAIR REVIEWED: | | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| DE REVIEW: | | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| CURRICULUM COMMITTEE DIVISION REPRESENTATIVE REVIEWED: | | <input type="checkbox"/> YES <input type="checkbox"/> NO |

We need to sanitize the lab equipment after each group.