# Course Identification Numbering System (C-ID) logo.Transfer Model Curriculum 5-Year Review Summary - Physics

**September 2018**

Please attach a copy of the vetting results for the TMC to the document.

1. Provide a breakdown of the respondents to the survey:

* # of CCC respondents: TMC – 19; Descriptor - 23
* # of CSU respondents: TMC – 7; Descriptor - 8
* # of UC respondents: TMC – 1; Descriptor - 3
* Total responses: TMC – 27; Descriptor – 36

One respondent completed the Descriptor survey twice and two others did not disclose their demographic information.

**Provide a written summary of the feedback from the survey to the question below:**

1. Were there any changes suggested to the CORE of the TMC?

There were quite a few comments expressing concern that Differential Equations is not a required course for the TMC, which implies that students will not be mathematically prepared for upper division courses upon transfer to CSU. Others felt that General Chemistry should also be required.

1. Were there any changes suggested to the List A section of the TMC?

N/A

1. If appropriate, were there any changes suggested to the List B section of the TMC?

N/A

1. If appropriate, were there any changes suggested to the List C section of the TMC?
2. Please provide any general recommendations from the feedback received from the vetting.

The 60-unit limit presents a challenge to the Physics AS-T since it is difficult to include a differential equations course in the TMC. The FDRG would like to look at this TMC again assuming there was a possibility to add the necessary courses that will adequately prepare students for upper division courses upon transfer to CSU institutions. However, this might not be possible without legislative help.

**Provide a written summary of the FDRG’s recommendations and attach a copy of the revised TMC, including the date of completion of the 5-year review.**

The following summarizes the recommendations made at FDRG meeting:

1. There will be no changes made to the TMC at this time. The FDRG would like the flexibility to revise the FDRG if flexibility on the 60-unit restriction is available after the pilot program between the UC and the CCCs is in place. Additionally, FDRG members from both segments would like to be invited to any future meetings of physics faculty to discuss transfer between our three systems.
2. Physics 100S, 105, 110, 200S, 205, 210, and 215 will include an example of an open source textbook.
3. There will be minor revisions to the Physics 200S and Physics 215 course descriptors to indicate that some topics in modern physics are required. This was the original intent, but the wording was not clear. The courses that have been approved already meet this requirement and would not need to be resubmitted.

## Descriptor 5-Year Review Summary

Please provide a written summary of the FDRG’s recommendations for each of the descriptors in the table below. If there are no changes to the descriptors, you can note this by stating “After a complete review of the descriptor, the FDRG does not propose any changes to the descriptor at this time.”

| C-ID Descriptor and Name | Summary of the FDRG 5-Year Physics Review |
| --- | --- |
| PHYS 100S | Approximately 69% of respondents indicated that the descriptor was appropriate as it is, while 19% wanted to have changes. Approximately 12% of the respondents declined to comment.  There were two comments regarding the lack of a math pre-requisite requirement for this series other than an advisory pre-requisite in trigonometry. One respondent made the point that the Physics 140 course has a math pre-requisite but the Physics 100 series does not. There were a couple suggestions to make very minor changes in the descriptor.  Recommendations: Other than adding an open source textbook example (see previous section above) to the descriptors, no changes are recommended at this time. |
| PHYS 105 | Approximately 65% of respondents indicated that the descriptor was appropriate as it is, while 23% wanted to have changes. Approximately 12% of the respondents declined to comment.  Respondents made the same comments as in the Physics 100S survey.  Recommendations: Other than adding an open source textbook example (see previous section above) to the descriptors, no changes are recommended this time. |
| PHYS 110 | Approximately 80% of respondents indicated that the descriptor was appropriate as it is, while 12% wanted to have changes. Approximately 8% of the respondents declined to comment.  Only one respondent commented on the lack of a trigonometry prerequisite for this course. There were a couple suggestions to make very minor changes in the descriptor.  Recommendations: Other than adding an open source textbook example (see previous section above) to the descriptors, no changes are recommended this time. |
| PHYS 140 | Approximately 77% of respondents indicated that the descriptor was appropriate as it is, while 8% wanted to have changes. Approximately 12% of the respondents declined to comment.  Two respondents suggested that we add a separate course descriptor for a conceptual physics course with a separate laboratory course descriptor, which is a very common GE course in the CSU system.  Recommendation: No changes are recommended at this time. |
| PHYS 200S | Approximately 59% of respondents indicated that the descriptor was appropriate as it is, while 30% wanted to have changes. Approximately 11% of the respondents declined to comment.  One respondent found a topic that was listed as a floating topic in Physics 205, 210, and 215 descriptors, but not in the Physics 200S descriptor. Another respondent commented that there were modern physics course objectives even though they appeared to be optional topics in the course content.  Recommendations: Change the course descriptor to indicate that some topics in modern physics are required. This was the original intent, but the wording was not clear. Several additional edits for consistency and clarity are also suggested in the revised descriptor. Additionally the descriptor should include an example of an open source textbooks (see previous section above) to the descriptors no changes are recommended. |
| PHYS 205 | Approximately 64% of respondents indicated that the descriptor was appropriate as it is, while 29% wanted to have changes. Approximately 7% of the respondents declined to comment.  There were two respondents that suggested making one semester of calculus and concurrent enrollment in the second semester of calculus as a requirement for the course. Two respondents suggested that we move the floating topic “Special Relativity” into the content section of Physics 215.  Recommendations: Remove the modern physics topic “Special Relativity” and add “Sound” in the floating topics section. Several additional edits for consistency and clarity are also suggested in the revised descriptor. Additionally the descriptor should include an example of an open source textbooks (see previous section above) to the descriptors no changes are recommended. |
| PHYS 210 | Approximately 78% of respondents indicated that the descriptor was appropriate as it is, while 18% wanted to have changes. Approximately 4% of the respondents declined to comment.  Two respondents suggested making successful completion of two semesters of calculus and concurrent enrollment into the third calculus course a requirement for the course.  Recommendations: Remove the modern physics topic “Special Relativity” and add the topic “Sound” in the floating topics section. Several additional edits for consistency and clarity are also suggested in the revised descriptor. Additionally the descriptor should include an example of an open source textbooks (see previous section above) to the descriptors no changes are recommended. |
| PHYS 215 | Approximately 70% of respondents indicated that the descriptor was appropriate as it is, while 26% wanted to have changes. Approximately 4% of the respondents declined to comment.  One respondent commented that there were modern physics course objectives even though they appeared to be optional topics in the course content. Another respondent expressed concern regarding how one can effectively cover the large number of topics in this course.  Change the course descriptor to indicate that some topics in modern physics are required. The wording was not clear in the original descriptor. Remove the topics “Geometric Optics,” “Lenses, Mirrors, and Optical Instruments” (since they are listed in the Course Content section of Physics 215), and add the topic “Sound” in the floating topics section. Several additional edits for consistency and clarity are also suggested in the revised descriptor. Additionally the descriptor should include an example of an open source textbooks (see previous section above) to the descriptors no changes are recommended. |