

Program Review Comprehensive Report



Program Review - Instructional: Physics

Supplemental Reports and Attachments

2014 - 2017

Comments or Notes: NCB ENTERED

Attachments:

[2014-17_PHS_SLO_DISCIPLINE.pdf](#)

[2014-17_PHY_SLO_DISCIPLINE.pdf](#)

[2014-17_PHYSICS_PLO_INSTRUCTIONAL.pdf](#)

[2014-17_INSTRUCTION_PHYSICS_ResourceRequests.xlsx](#)

[2014_17_PHYSICS_CurriculumRPT.pdf](#)

[2014_17_PHYSICS_SuccessEfficiencyRetentionRPT.pdf](#)

Program Trends and Updates

2014 - 2017

Program Update Section

Has your unit shifted departments in the PAST 4 years?: No, our unit have not shifted departments in the past 4 years.

Do you anticipate your unit will shift departments in the NEXT 4 years?: No, I do not anticipate that our unit will shift departments in the next 4 years.

New certificates programs created by your unit in the PAST 4 years?: Physics have developed the Physics ADT in the past 4 year.

New certificate programs anticipated by your unit in the NEXT 4 years?: No, unit does not anticipate any new certificate program in the next 4 years.

Substantial modifications made to certificates/degrees in the PAST 4 years.: There has been no substantial modification made to the certificates/degree in the past 4 years.

Substantial modifications anticipated to certificates/degrees in the NEXT 4 years.: There is no substantial modification anticipated to certificates/degrees in the next 4 year.

Activities in other units that impacted your unit in the PAST 4 years.: The Biology ADT was approved and we have started to offer the Physics 2A and Physics 2B that is required for the Biology ADT. Data on Computer Science majors indicates the number of students majoring in Computer Science has doubled in the two year period of Fall 2015 to Fall 2017 (from 96 to 190 students) This means that we will need to offer more Physics 4A, 4B and 4C in the near future as these course are core requirement for computer science majors.

Activities in other units that impacted your unit in the NEXT 4 years.: Physics 2A and Physics 4A will be a part of the elective requirement for the new Kinesiology ADT. There will be a larger demand for Physics 2A and Physics 4A coming from the kinesiology students.

Previous Program Review Resource Requests

Resource Requests Received: We received all the equipment that we requested in the 2011 annual program review for physics

How did the resources received impact student learning?: From the STEM grant, we received all the equipment that we requested in the 2011 annual program review for physics during the following years which has greatly enhanced our physics labs. We no long need to borrow the scales (balance) from chemistry lab for our physics labs. We have added two more setups to our e/m (electron charge to mass ratio) lab so that each student within the lab is able to make measurement of the radius of the circular path that the electron beam takes. All other labs have 8 or 10 setups so that the groups in the physics labs are now

down to two or three people per group instead of the 4-5 students that we have in the past. We were also able to add new experiments to our labs like the thermal expansion lab, Coulomb Law Lab, the Michelson Interferometer Lab, Heat Engine Lab, and Nuclear lab. Students learning have definitely increase during the lab with all the new experimental equipment as they were able to test more physical concepts and laws as well as have more hand on experience in the lab with less lab partners.

Program Data Highlights Section

COR Review: All of the physics courses (PHY 4A, 4B, 4C, 2A, 2B, 10 and 11) were last updated on 7/1/2014 with major modification. We will start a new round of updating the COR for physics in this coming year.

Program Metric Highlights: The unit consist of 1 associate professor with 4 associate faculty. In the 2013-2014 academic year, our unit offered 14 sections of Physics and Physical Science classes and in the 2017-2018 academic year, we have increased our offering to 20 sections of Physics and Physical Science classes. This is a 42.8% increase. The increase is due trying to meet our long term goals by offering more Physics 4A and expanding our offering to include Physics 2A and Physics 2B. We also started to offer more physics 10 during the summer and winter intersession. We hope to continue to increase our offering to have Physics 2A and Physics 2B be offer every Fall and Spring semesters.

In terms of the Physics ADT, we saw and increase to 8 students receiving the Physics ADT in 2016-2017 academic year compare to only 1 students getting the physics ADT in 2015-2016 and 2 students get the Physics ADT in 2014-2015 academic year when the degree first became available.

Assessment Report Highlights: All course in physics have been assessed at least once with results inputted and related document uploaded.

Program Goal: Increase our offering of Physics 4A

Increase of offering of Physics 4A to meet the need of students on waitlists to be able to enroll in the course

Goal Status: In Progress

Goal Year(s): 2014 - 2017

Start Date: 04/27/2016

Completion Date: 08/27/2017

How do your goals support the Educational Master Plan?: Enhanced our program to give more access to students trying to add the class. Increase our efficiency in Physics 4B and Physics 4C class. Due to the difficulty of the physics 4A subject matter, the success rate of Physics 4A is low. So by only having one class of physics 4A students, where half the class pass, the Physics 4B and Physics 4C will only be half fill.

This Program Goal Supports the selected EMP Goal(s) and Objective(s): Goal 1 Objective 2: Improve transfer rate by 10% over 5 years. , Goal 1 Objective 5: , Goal 1 Objective 10: , Goal 3 Objective 5:

Activities

2016 - 2017 - Start from Spring 2016 semester, we have been offer two sections of Physics 4A instead of one. (Active)

Program Goal: Increase our course offering of Physics 2A and Physics 2B

To be able to offer Physics 2A and Physics 2B every Fall and Spring term.

Goal Status: In Progress

Goal Year(s): 2014 - 2017

Start Date: 05/01/2015

How do your goals support the Educational Master Plan?: Enhance Academic Program to have a more complete program. So far our physics course offered here at Norco only serve the general education physics or the engineering students, but does not serve students who are biology major or pre-med. These students have to go to riverside to take physics. These courses will also be needed as part of the Biology ADT degree. The Physics 2A will also be a requirement of the Kinesiology ADT.

This Program Goal Supports the selected EMP Goal(s) and Objective(s): Goal 1 Objective 2: Improve transfer rate by 10% over 5 years. , Goal 1 Objective 5: , Goal 1 Objective 10: , Goal 3 Objective 5:

Activities

Program Review - Instructional: Physics

2015 - 2016 - We have started to offer the Physics 2A every Spring semester since spring 2016 and have tried to offer Physics 2B in the Fall, but they were cancel due to low enrollment. Will try to offer the Physics 2B for this coming Fall 2018 semester. (Active)

Target: Our target is to be able to offer Physics 2A and Physics 2B for every Fall and Spring semesters and not only Physics 2A in the Spring and Physics 2B in the Fall.