



Program Review - Overall Report

2024 - 2027

Instructional: Physics

Overall Trends

Please add any relevant documents here.

[PHY Students.xlsx](#);

[Physics Majors Bachelors Roster 2022.pdf](#)

What overall trends do you see in success, retention, program of study, educational planning, and awards over the past 3 or more years?

	Program of Study			
Gender by Ethnicity	2019-20	2020-21	2021-22	2022-23
Female	22	18	19	22
African-American	3	3	1	1
Asian	1	3	6	4
Hispanic	12	10	8	7
Two or More		1		1
White	6	1	4	9
Male	47	53	49	54
African-American			1	1
Asian	6	7	7	8
Hispanic	28	30	26	30
Pacific Islander				1
Two or More		3	2	
Unreported	1	1	1	
White	12	12	12	14
Unreported			1	
Hispanic			1	
Total	69	71	69	76

Over the past three years, our number of students who have declared Physics as part of their program of study has remained relatively stable, fluctuating between $n = 69$ in the 2019/2020 AY and as high as $n = 76$ in the 2022/2023 AY. In the 2022/2023 AY, 29% of our majors identify as female, which is slightly better than the national average of 23% (American Institute of Physics Roster for Bachelor's Degrees, 2022).

	Educational Planning				
Student Educational Plan	2019-20	2020-21	2021-22	2022-23	Total
Abbreviated and Comprehensive Ed Plan	2.90%	4.23%	4.35%	3.95%	3.86%
Abbreviated Ed Plan	1.45%	7.04%	10.14%	2.63%	5.26%
Comprehensive Ed Plan	24.64%	18.31%	18.84%	15.79%	19.30%
No Ed Plan	71.01%	70.42%	66.67%	77.63%	71.58%

Over the past three years, we can see that, on average, 71.58% of our majors ($n = 69-76$, depending on the year) do not have a comprehensive education plan. Only 19.30% have a comprehensive education plan. The percentage of students with comprehensive education plans has steadily decreased over the past three years despite the number of majors staying relatively stable (± 5). In

Data Review

the 2022-2023 AY year especially, there was a decline in the completion of any educational plan (abbreviated or comprehensive)

I think some data misrepresentation can explain a small part of this. In Fall 2023, we were provided contact information for all students who declared Physics as their major for CAP hour. However, when I contacted said students, a few replied that they were not physics majors. They needed to take a single (physics) class at Norco College but were otherwise enrolled full-time at another college/university and were required to declare a program (Physics for Transfer) as part of being a Norco College student. I do not have an accurate count of how many students this applies to.

Program Awards

Degrees					
Gender x Ethnicity	18-19	19-20	20-21	21-22	22-23
Female	4	5	8	7	2
Asian	1	1	1		1
Black or African American				1	
Hispanic/Latino		4	3	5	1
Two or More Races			1		
White	3		3	1	
Male	13	16	26	20	14
Asian	4	3	4	3	1
Black or African American	1				
Hispanic/Latino	4	7	14	14	10
Native Hawaiian or Pacific Islander				1	
White	4	6	8	2	3
Unreported				1	1
Asian					1
Native Hawaiian or Pacific Islander				1	
Total	17	21	34	28	17

Over the past three years, the number of degrees awarded has been steadily declining from 34 degrees in the 2020/2021 AY to only 17 degrees in the 2022/2023 AY. Considering that the number of students declaring physics as part of their program of study has remained relatively stable, we need to investigate the reason for this decline.

Success and Retention Rates

Dicipline Overall

Overall students in Physics have been experiencing a small decrease in success rates from 73.5% to 69.0% as well as a small decrease in retention from 83.7% to 82.4% across all courses between the 2020/2021 AY and the 2022/2023 AY. These results suggest that our DWF rates are remaining relatively stable. Part of this can be explained by the fact that in the 2020-2021 AY, classes were still taught 100% online. Beginning in Fall 2021, some courses returned to operate in a F2F format. We can see a disproportionate effect on the success of students identifying as Two or More Races/Ethnicities in the 2020-2021 AY, with a disproportionate enrollment number continuing into the 2022/2023 AY. We also see a disproportionate effect on the success of students identifying as Hispanic beginning in Fall 2021 and continuing through Spring 2023.

Data Review

Academic Year Gender	2020-21					2021-22					2022-23				
	Enrolled	Success	Success Rate	DI	Close Gap	Enrolled	Success	Success Rate	DI	Close Gap	Enrolled	Success	Success Rate	DI	Close Gap
Female	217	164	75.6%	0		145	109	75.2%	0		169	123	72.8%	0	
African American	Masked Data			0		Masked Data			0		Masked Data			0	
Asian	40	32	80.0%	0		23	21	91.3%	0		30	26	86.7%	0	
Hispanic	124	91	73.4%	0	1	82	56	68.3%	0	5	105	71	67.6%	0	2
Native American				0					0					0	
White	38	29	76.3%	0		32	26	81.3%	0		25	21	84.0%	0	
Two or More	10	9	90.0%	0		Masked Data			0		Masked Data			0	
Unknown				0					0		Masked Data			0	
Male	466	338	72.5%	0	15	344	249	72.4%	0	8	426	289	67.8%	0	17
African American	12	9	75.0%	0		Masked Data			0		17	11	64.7%	0	1
Asian	107	76	71.0%	0	4	78	63	80.8%	0		83	59	71.1%	0	
Hispanic	233	168	72.1%	0	5	190	127	66.8%	1	20	216	140	64.8%	1	15
Native American				0					0					0	
Pacific Islander	Masked Data			0		Masked Data			0		Masked Data			0	
White	96	76	79.2%	0		57	47	82.5%	0		83	66	79.5%	0	
Two or More	14	6	42.9%	1	5	Masked Data			0		15	7	46.7%	0	4
Unknown	Masked Data			0		Masked Data			0		11	6	54.5%	0	2
Unknown	Masked Data			0		Masked Data			0		12	7	58.3%	0	2
Asian				0					0		Masked Data			0	
Hispanic				0		Masked Data			0		Masked Data			0	
Native American				0		Masked Data			0		Masked Data			0	
Pacific Islander	Masked Data			0		Masked Data			0		Masked Data			0	
White	Masked Data			0		Masked Data			0		Masked Data			0	
Unknown				0					0		Masked Data			0	
Total	687	505	73.5%	0		498	364	73.1%	0		607	419	69.0%	0	

Course Level

In Physics 10, students have been experiencing stability in success rates around 74.4% but a small increase in retention from 85.5% to 89.3% between the 2020/2021 AY and the 2022/2023 AY. These results suggest that our DWF rates are increasing slightly. Most of our Physics 10 courses are offered online and asynchronously. From our own in-class observations, it is easier for students to fall behind in online coursework than in face-to-face classes. In addition, we have observed that students tend to believe they will be able to make up any missed work/work they fell behind on top of their regular obligations. However, not all professors allow late work (especially in compressed 6-week semesters), and it is challenging for students to complete all missed assignments to a demonstrated level of content mastery while keeping up with the regular course requirements.

In Physics 2A, students have been experiencing stability in success rates around 60.5% but a decrease in retention from 76.5% to 61.5% between the 2020/2021 AY and the 2022/2023 AY. These results suggest that students in this course (typically those on pre-health, pre-medical, and pre-veterinary tracks) are dropping/withdrawing from the course at an increasing rate. This could be explained by the fact that students in these tracks are historically extremely conscious of their grades and GPAs; therefore, they are likely to drop/withdraw from classes that they are not excelling in.

In Physics 2B, students have been stable in success rates from around 85.7%, as well as a stable in retention at 100% between the 2020/2021 AY and the 2022/2023 AY. These results suggest that our DWF rates remain relatively stable. Also, these results are not surprising given the class size of Physics 2B tends to be smaller (<15), creating a more personalized relationship between the students and the instructor. Also, as this is a continuation course, we would expect the success and retention rates to be higher than that of Physics 2A.

In Physics 4A, students have been experiencing a decrease in success rates from 71.3% to 62.9% as well as a decrease in retention from 81.8% to 74.3% between the 2020/2021 AY and the 2022/2023 AY. These results suggest that our DWF rates remain relatively stable. The drop in both success and retention may be explained by the proportion of students taking Physics 4A online compared to a F2F format. In addition, increases made to the rigor of our 4-series courses beginning in Spring 2023 (to be more on par with other campuses in our district) may have caused a temporary drop in the success rates of students.

In Physics 4B, students have been experiencing a slight decrease in success rates from 73.1% to 71.1% but have remained stable in terms of retention from 83.1% to 80.0% between the 2020/2021 AY and the 2022/2023 AY. These results suggest that our DWF rates have been increased. We would expect the success rate of Physics 4B classes to be higher than that of Physics 4A classes

Data Review

since this is a continuation course in the series; however, they are on par with the success rates of our Physics 4A classes.

In Physics 4C, students have been stable in success rates from around 85.7%, as well as stable in retention of around 91.0% between the 2020/2021 AY and the 2022/2023 AY. These results suggest that our DWF rates remain relatively stable. We would expect, and do see that the success rate of Physics 4C classes to be higher than that of Physics 4A classes since this is a continuation course in the series.

Discipline Overall - Retention Rates

Across the discipline, our retention rate has shown a small decrease from 83.7% to 82.4% across all courses. We can see a disproportionate effect on the retention of Hispanic students in the 2021-2021 AY, with a gap continuing into the 2022/2023 AY.

Academic Year Gender	2020-21				2021-22				2022-23						
	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap
Female	217	184	84.8%	0		145	130	89.7%	0		169	139	82.2%	0	1
African American	Masked Data			0		Masked Data			0		Masked Data			0	
Asian	40	37	92.5%	0		23	22	95.7%	0		30	28	93.3%	0	
Hispanic	124	101	81.5%	0	4	82	72	87.8%	0		105	84	80.0%	0	4
Native American				0					0					0	
White	38	34	89.5%	0		32	30	93.8%	0		25	21	84.0%	0	
Two or More	10	9	90.0%	0		Masked Data			0		Masked Data			0	
Unknown				0					0		Masked Data			0	
Male	466	388	83.3%	0	7	344	295	85.8%	0	12	426	354	83.1%	0	
African American	12	12	100.0%	0		Masked Data			0		17	15	88.2%	0	
Asian	107	89	83.2%	0	1	78	71	91.0%	0		83	73	88.0%	0	
Hispanic	233	195	83.7%	0	1	190	157	82.6%	1	13	216	174	80.6%	0	7
Native American				0					0					0	
Pacific Islander	Masked Data			0		Masked Data			0		Masked Data			0	
White	96	79	82.3%	0	2	57	51	89.5%	0		83	71	85.5%	0	
Two or More	14	10	71.4%	0	2	Masked Data			0		15	12	80.0%	0	1
Unknown	Masked Data			0		Masked Data			0		11	8	72.7%	0	2
Unknown	Masked Data			0		Masked Data			0		12	7	58.3%	0	3
Asian				0					0		Masked Data			0	
Hispanic				0		Masked Data			0		Masked Data			0	
Native American				0		Masked Data			0		Masked Data			0	
Pacific Islander	Masked Data			0		Masked Data			0		Masked Data			0	
White	Masked Data			0		Masked Data			0		Masked Data			0	
Unknown				0					0		Masked Data			0	
Total	687	575	83.7%	0		498	432	86.7%	0		607	500	82.4%	0	

Course Level Breakdown with Data

Physics 10 Success Rates

Time Series Data is not available for our Physics 10 courses because it is all masked data. This makes sense as we often only offer a single section of Physics 10 each term. Overall, we see a success rate of 74.4% for all students across the three-year span. However, we do see a discrepancy in success rates for male students of unknown race/ethnicity.

Data Review

Gender	Enrolled	Success	Success Rate	DI	Close Gap
Female	105	85	81.0%	0	0
African American	Masked Data			0	
Asian	17	15	88.2%	0	0
Hispanic	69	54	78.3%	0	0
Native American				0	
White	11	9	81.8%	0	0
Two or More	Masked Data			0	
Unknown	Masked Data			0	
Male	141	100	70.9%	1	12
African American	10	7	70.0%	0	1
Asian	22	17	77.3%	0	0
Hispanic	68	50	73.5%	0	1
White	25	17	68.0%	0	2
Two or More	Masked Data			0	
Unknown	11	5	45.5%	1	4
Unknown	Masked Data			0	
Hispanic	Masked Data			0	
Native American	Masked Data			0	
White	Masked Data			0	
Unknown	Masked Data			0	
Total	254	189	74.4%	0	0

Physics 10 Retention Rates

Time Series Data is not available for our Physics 10 courses because it is all masked data. This makes sense as we often only offer a single section of Physics 10 each term. Overall, we see a success rate of 89.3% for all students across the three-year span. However, we do see a discrepancy in retention rates for male students.

Data Review

Academic Year Gender	2020-21					2021-22					2022-23				
	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap
Female	Masked Data			0		25	22	88.0%	0		53	50	94.3%	0	
African American	Masked Data			0		Masked Data			0		Masked Data			0	
Asian	Masked Data			0		Masked Data			0		Masked Data			0	
Hispanic	Masked Data			0		16	14	87.5%	0		35	32	91.4%	0	
Native American	Masked Data			0					0					0	
White	Masked Data			0		Masked Data			0		Masked Data			0	
Two or More	Masked Data			0					0		Masked Data			0	
Unknown	Masked Data			0					0		Masked Data			0	
Male	Masked Data			0		40	35	87.5%	0		65	56	86.2%	0	5
African American	Masked Data			0		Masked Data			0		Masked Data			0	
Asian	Masked Data			0		Masked Data			0		11	11	100.0%	0	
Hispanic	Masked Data			0		22	19	86.4%	0		26	22	84.6%	0	2
White	Masked Data			0		Masked Data			0		10	9	90.0%	0	
Two or More	Masked Data			0					0		Masked Data			0	
Unknown	Masked Data			0		Masked Data			0		Masked Data			0	
Unknown	Masked Data			0		Masked Data			0		Masked Data			0	
Hispanic	Masked Data			0		Masked Data			0		Masked Data			0	
Native American	Masked Data			0		Masked Data			0		Masked Data			0	
White	Masked Data			0		Masked Data			0		Masked Data			0	
Unknown	Masked Data			0					0		Masked Data			0	
Total	Masked Data			0		69	59	85.5%	0		122	109	89.3%	0	

Physics 11 Success Rates

Time Series Data is not available for our Physics 11 courses because it is all masked data. This makes sense as we do not offer Physics 11 each term and then only offer a single section when we do. Overall, we see a success rate of 67.7% in the class across the three-year span.

Course-Level: PHY-11

Gender	Enrolled	Success	Success Rate	DI	Close Gap
Female	16	11	68.8%	0	0
African American	Masked Data			0	
Asian	Masked Data			0	
Hispanic	11	7	63.6%	0	1
White	Masked Data			0	
Two or More				0	
Unknown				0	
Male	15	10	66.7%	0	1
African American	Masked Data			0	
Asian	Masked Data			0	
Hispanic	Masked Data			0	
White	Masked Data			0	
Two or More				0	
Total	31	21	67.7%	0	0

Physics 11 Retention Rates

Time Series Data is not available for our Physics 11 courses because it is all masked data. This makes sense as we do not offer Physics 11 each term and then only offer a single section when we do.

Data Review

Academic Year Gender	2020-21					2021-22					2022-23				
	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap
Female	Masked Data			0					0		Masked Data			0	
African American	Masked Data			0					0		Masked Data			0	
Asian	Masked Data			0					0		Masked Data			0	
Hispanic	Masked Data			0					0		Masked Data			0	
White	Masked Data			0					0		Masked Data			0	
Two or More	Masked Data			0					0		Masked Data			0	
Unknown	Masked Data			0					0		Masked Data			0	
Male	Masked Data			0					0		Masked Data			0	
African American	Masked Data			0					0		Masked Data			0	
Asian	Masked Data			0					0		Masked Data			0	
Hispanic	Masked Data			0					0		Masked Data			0	
White	Masked Data			0					0		Masked Data			0	
Two or More	Masked Data			0					0		Masked Data			0	
Total	Masked Data			0					0		Masked Data			0	

Physics 2A Success Rates

Time Series Data is not available for our Physics 2A courses because it is all masked data. This makes sense as we often only offer a single section of Physics 2A each term. Overall, we see a success rate of 60.5% in the class across the three-year span.

Course-Level: PHY-2A

Gender	Enrolled	Success	Success Rate	DI	Close Gap
Female	99	65	65.7%	0	0
African American				0	
Asian	18	15	83.3%	0	0
Hispanic	57	31	54.4%	0	6
White	22	17	77.3%	0	0
Two or More	Masked Data			0	
Male	78	42	53.8%	1	10
African American	Masked Data			0	
Asian	18	10	55.6%	0	1
Hispanic	39	22	56.4%	0	3
Pacific Islander	Masked Data			0	
White	11	5	45.5%	0	2
Two or More	Masked Data			0	
Unknown	Masked Data			0	
Total	177	107	60.5%	0	0

Physics 2A Retention Rates

Time Series Data is not available for our Physics 2A courses because it is all masked data. This makes sense as we often only offer a single section of Physics 2A each term. Overall, we see a retention rate of 61.5% in the class across the three-year span with a noted disproportion gap for Hispanic Female students.

Data Review

Academic Year Gender	2020-21					2021-22					2022-23				
	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap
Female	41	34	82.9%	0		Masked Data			0		28	16	57.1%	0	3
African American						Masked Data					Masked Data				0
Asian	Masked Data					Masked Data					Masked Data				0
Hispanic	24	18	75.0%	0	1	Masked Data					18	8	44.4%	1	5
White	10	9	90.0%	0		Masked Data					Masked Data				0
Two or More	Masked Data					Masked Data					Masked Data				0
Male	27	18	66.7%	0	5	Masked Data			0		24	16	66.7%	0	
African American	Masked Data					Masked Data					Masked Data				0
Asian	Masked Data					Masked Data					Masked Data				0
Hispanic	15	10	66.7%	0	2	Masked Data					12	8	66.7%	0	
Pacific Islander	Masked Data					Masked Data					Masked Data				0
White	Masked Data					Masked Data					Masked Data				0
Two or More						Masked Data					Masked Data				0
Unknown						Masked Data					Masked Data				0
Total	68	52	76.5%	0		Masked Data			0		52	32	61.5%	0	

Physics 2B Success Rates

Time Series Data is not available for our Physics 2B courses because it is all masked data. This makes sense as we often only offer a single section of Physics 2B each term. Overall, we see a success rate of 85.7% in the class across the three-year span. We would expect (and do observe) this number to be higher than the success rate of Physics 2A, because this is a continuation source in the sequence.

Course-Level: PHY-2B

Gender	Enrolled	Success	Success Rate	DI	Close Gap
Female	50	43	86.0%	0	0
Asian	11	11	100.0%	0	0
Hispanic	25	21	84.0%	0	1
White	11	8	72.7%	0	2
Two or More	Masked Data			0	
Unknown				0	
Male	26	22	84.6%	0	1
African American	Masked Data			0	
Asian	Masked Data			0	
Hispanic	11	10	90.9%	0	0
White	Masked Data			0	
Unknown				0	
Unknown	Masked Data			0	
Hispanic	Masked Data			0	
Total	77	66	85.7%	0	0

Physics 2B Retention Rates

Data Review

Time Series Data is not available for our Physics 2B courses because it is all masked data. This makes sense as we often only offer a single section of Physics 2B each term. Overall, we see a success rate of 100.0% in the class across the three-year span. We would expect (and do observe) this number to be higher than the retention rate of Physics 2A, because this is a continuation source in the sequence and often the last course students are taking before transfer. Therefore, there is a very high level of motivation for students to finish the course.

Academic Year Gender	2020-21					2021-22					2022-23				
	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap
Female	Masked Data	0	23	23	100.0%	0	14	14	100.0%	0					
Asian	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Hispanic	Masked Data	0	12	12	100.0%	0	Masked Data			0	Masked Data				
White	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Two or More	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Unknown	Masked Data	0				0				0					
Male	Masked Data	0	Masked Data	0	12	12	100.0%	0							
African American	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Asian	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Hispanic	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
White	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Unknown	Masked Data	0				0				0					
Unknown	Masked Data	0	Masked Data	0	32	32	100.0%	0			26	26	100.0%	0	
Hispanic	Masked Data	0	Masked Data			0				0					
Total	Masked Data	0	32	32	100.0%	0	26	26	100.0%	0					

Physics 4A Success Rates

In Physics 4A, we see a very sharp drop in the success rate of students in the 2022/2023 AY down to 62.9% from the previous 71.3% (2020/2021 AY) and 77.5% (2021/2022 AY). We believe that the success rates in Physics 4A from Fall 2020 – Fall 2021 were inflated due to the proportion of students taking Physics 4A online compared to a F2F format. In addition, increases made to the rigor of our 4-series courses beginning in Spring 2023 (to be more on par with other campuses in our district) may have caused a temporary drop in the success rates of students.

Academic Year Gender	2020-21					2021-22					2022-23				
	Enrolled	Success	Success Rate	DI	Close Gap	Enrolled	Success	Success Rate	DI	Close Gap	Enrolled	Success	Success Rate	DI	Close Gap
Female	86	61	70.9%	0	1	38	27	71.1%	0	4	31	18	58.1%	0	2
African American	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Asian	17	13	76.5%	0		Masked Data				0	Masked Data				
Hispanic	48	34	70.8%	0	1	21	15	71.4%	0	2	18	11	61.1%	0	1
White	15	11	73.3%	0		Masked Data				0	Masked Data				
Two or More	Masked Data	0				0				0	Masked Data				
Unknown	Masked Data	0				0				0	Masked Data				
Male	214	153	71.5%	0	138	109	79.0%	0	140	90	64.3%	0			
African American	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Asian	43	29	67.4%	0	2	30	26	86.7%	0		27	19	70.4%	0	
Hispanic	114	81	71.1%	0	1	79	60	75.9%	0	3	75	43	57.3%	0	8
Native American		0				0				0					
Pacific Islander		0				0				0					
White	44	34	77.3%	0		25	20	80.0%	0		27	22	81.5%	0	
Two or More	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Unknown	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Unknown	Masked Data	0	Masked Data	0	Masked Data	0	Masked Data	0	Masked Data	0	Masked Data	0	Masked Data	0	Masked Data
Asian	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Hispanic	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Pacific Islander	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
White	Masked Data	0	Masked Data			0	Masked Data			0	Masked Data				
Total	303	216	71.3%	0	178	138	77.5%	0	175	110	62.9%	0			

Physics 4A Retention Rates

In Physics 4A, we see a very sharp drop in the retention rate of students in the 2022/2023 AY down to 74.3% from the previous 81.8% (2020/2021 AY) and 88.8% (2021/2022 AY). We believe that the success rates in Physics 4A from Fall 2020 – Fall 2021 were inflated due to the proportion of students taking Physics 4A online compared to a F2F format. In addition, increases made to the rigor of our 4-series courses beginning in Spring 2023 (to be more on par with other campuses in our district) may have caused a temporary drop in the retention rates of students.

Data Review

Academic Year Gender	2020-21					2021-22					2022-23				
	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap
Female	86	68	79.1%	0	4	38	30	78.9%	0	5	31	19	61.3%	0	5
African American	Masked Data			0		Masked Data			0		Masked Data			0	
Asian	17	15	88.2%	0		Masked Data			0		Masked Data			0	
Hispanic	48	38	79.2%	0	2	21	16	76.2%	0	3	18	12	66.7%	0	2
White	15	12	80.0%	0	1	Masked Data			0		Masked Data			0	
Two or More	Masked Data			0					0		Masked Data			0	
Unknown				0					0		Masked Data			0	
Male	214	178	83.2%	0		138	126	91.3%	0		140	109	77.9%	0	
African American	Masked Data			0		Masked Data			0		Masked Data			0	
Asian	43	36	83.7%	0		30	28	93.3%	0		27	23	85.2%	0	
Hispanic	114	95	83.3%	0		79	72	91.1%	0		75	55	73.3%	0	2
Native American				0					0					0	
Pacific Islander				0					0					0	
White	44	35	79.5%	0	2	25	22	88.0%	0	1	27	23	85.2%	0	
Two or More	Masked Data			0		Masked Data			0		Masked Data			0	
Unknown	Masked Data			0		Masked Data			0		Masked Data			0	
Unknown	Masked Data			0		Masked Data			0		Masked Data			0	
Asian				0					0		Masked Data			0	
Hispanic				0		Masked Data			0		Masked Data			0	
Pacific Islander	Masked Data			0					0		Masked Data			0	
White	Masked Data			0		Masked Data			0		Masked Data			0	
Total	303	248	81.8%	0		178	158	88.8%	0		175	130	74.3%	0	

Physics 4B Success Rates

In Physics 4B, we see a very sharp drop in the success rate of students from 73.1% (2020/2021 AY) to 59.7% (2021/2022) and then an increase back to 71.7% (2022/2023 AY). We believe that the success rates in Physics 4B in the 2020/2021 AY were inflated due to the proportion of students taking Physics 4B online compared to a F2F format. Returning to the rigors of a F2F format (with no online options) in Fall 2021-2022 may have contributed to the sudden and dramatic dip in success rates. In addition, during this year students were still able to take Physics 4A online, but not 4B. After a year of being in F2F classrooms, students adjusted back to the rigors of a F2F format, and our success rates returned to above 70%. We would expect the success rate of Physics 4B classes to be higher than that of Physics 4A classes since this is a continuation course in the series; however, they are on par with the success rates of our Physics 4A classes. We can see a disproportionate effect on the success of students identifying as Male and Hispanic in the 2021-2022 AY, and while there is still an equity gap in 2022/2023 AY, the number is improving.

Academic Year Gender	2020-21					2021-22					2022-23				
	Enrolled	Success	Success Rate	DI	Close Gap	Enrolled	Success	Success Rate	DI	Close Gap	Enrolled	Success	Success Rate	DI	Close Gap
Female	25	19	76.0%	0		15	8	53.3%	0	2	30	25	83.3%	0	
African American	Masked Data			0					0					0	
Asian	Masked Data			0		Masked Data			0		Masked Data			0	
Hispanic	16	11	68.8%	0	1	Masked Data			0		19	15	78.9%	0	
White	Masked Data			0		Masked Data			0		Masked Data			0	
Two or More	Masked Data			0		Masked Data			0		Masked Data			0	
Male	104	75	72.1%	0	6	103	62	60.2%	0		125	86	68.8%	1	14
African American	Masked Data			0		Masked Data			0		Masked Data			0	
Asian	30	23	76.7%	0		25	18	72.0%	0		25	16	64.0%	0	3
Hispanic	44	30	68.2%	0	4	62	30	48.4%	1	15	66	44	66.7%	0	5
Pacific Islander	Masked Data			0					0					0	
White	23	20	87.0%	0		13	12	92.3%	0		27	21	77.8%	0	
Two or More	Masked Data			0		Masked Data			0		Masked Data			0	
Unknown				0		Masked Data			0		Masked Data			0	
Unknown	Masked Data			0		Masked Data			0		Masked Data			0	
Asian				0					0		Masked Data			0	
Hispanic				0		Masked Data			0		Masked Data			0	
White	Masked Data			0					0		Masked Data			0	
Total	130	95	73.1%	0		119	71	59.7%	0		159	113	71.1%	0	

Physics 4B Retention Rates

In Physics 4B, we see a drop in the success rate of students from 83.1% (2020/2021 AY) to 77.3% (2021/2022) and then an increase back to 83.0% (2022/2023 AY). We believe that the success rates in Physics 4B in the 2020/2021 AY were inflated due to the proportion of students taking Physics 4B online compared to a F2F format. Returning to the rigors of a F2F format (with no online options) in Fall 2021-2022 may have contributed to dip in retention rates. We would expect the retention rate of Physics 4B classes to be higher than that of Physics 4A classes since this is a continuation course in the series; however, they are on par with the retention rates of our Physics 4A classes. We can see a disproportionate effect on the retention of students identifying as Male and Hispanic in the 2021-2022 AY, and while there is still an equity gap in 2022/2023 AY, the number is improving.

Data Review

Academic Year Gender	2020-21					2021-22					2022-23				
	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap	Enrolled	Retained	Retention Rate	DI	Close Gap
Female	25	21	84.0%	0		15	13	86.7%	0		30	27	90.0%	0	
African American	Masked Data			0		Masked Data			0		Masked Data			0	
Asian	Masked Data			0		Masked Data			0		Masked Data			0	
Hispanic	16	12	75.0%	0	2	Masked Data			0		19	17	89.5%	0	
White	Masked Data			0		Masked Data			0		Masked Data			0	
Two or More	Masked Data			0		Masked Data			0		Masked Data			0	
Male	104	86	82.7%	0	2	103	78	75.7%	1	13	125	103	82.4%	0	4
African American	Masked Data			0		Masked Data			0		Masked Data			0	
Asian	30	26	86.7%	0		25	21	84.0%	0		25	21	84.0%	0	
Hispanic	44	34	77.3%	0	4	62	43	69.4%	1	11	66	54	81.8%	0	2
Pacific Islander	Masked Data			0		Masked Data			0		Masked Data			0	
White	23	21	91.3%	0		13	12	92.3%	0		27	22	81.5%	0	1
Two or More	Masked Data			0		Masked Data			0		Masked Data			0	
Unknown				0		Masked Data			0		Masked Data			0	
Unknown	Masked Data			0		Masked Data			0		Masked Data			0	
Asian				0					0					0	
Hispanic				0					0					0	
White				0					0					0	
Total	130	108	83.1%	0		119	92	77.3%	0		159	132	83.0%	0	

Physics 4C Success Rates

Time Series Data is not available for our Physics 4C courses because it is all masked data. This makes sense as we often only offer a single section of Physics 4C each term. Overall, we see a success rate of 85.7% in the class across the three-year span. We would expect (and do observe) this number to be higher than the success rate of Physics 4A, because this is a continuation course in the sequence.

Course-Level: PHY-4C

Gender	Enrolled	Success	Success Rate	DI	Close Gap
Female	36	34	94.4%	0	0
African American				0	
Asian	Masked Data			0	
Hispanic	19	17	89.5%	0	0
White	Masked Data			0	
Two or More	Masked Data			0	
Male	152	127	83.6%	1	17
African American	Masked Data			0	
Asian	39	33	84.6%	0	1
Hispanic	72	59	81.9%	0	5
Pacific Islander	Masked Data			0	
White	33	32	97.0%	0	0
Two or More	Masked Data			0	
Unknown	Masked Data			0	
Pacific Islander	Masked Data			0	
Total	189	162	85.7%	0	0

Physics 4C Retention Rates

Time Series Data is not available for our Physics 4C courses because it is all masked data. This makes sense as we often only offer a single section of Physics 4C each term. Overall, we see a retention rate of 90.7% in the class

Data Review

across the three-year span. We would expect (and do observe) this number to be higher than the retention rate of Physics 4A, because this is a continuation course in the sequence.

Academic Year Gender	2020-21				2021-22				2022-23			
	Enrolled	Retained	Retention Rate	DI Close Gap	Enrolled	Retained	Retention Rate	DI Close Gap	Enrolled	Retained	Retention Rate	DI Close Gap
Female	12	12	100.0%	0	14	14	100.0%	0	Masked Data			0
African American				0				0	Masked Data			0
Asian	Masked Data			0	Masked Data			0	Masked Data			0
Hispanic	Masked Data			0	10	10	100.0%	0	Masked Data			0
White	Masked Data			0	Masked Data			0	Masked Data			0
Two or More	Masked Data			0				0	Masked Data			0
Male	67	60	89.6%	1	7	28	85.7%	1	4	Masked Data		0
African American	Masked Data			0				0	Masked Data			0
Asian	16	13	81.3%	0	2	11	90.9%	0	Masked Data			0
Hispanic	31	29	93.5%	0		11	8	72.7%	3	Masked Data		0
Pacific Islander	Masked Data			0	Masked Data			0	Masked Data			0
White	17	17	100.0%	0	Masked Data			0	Masked Data			0
Two or More	Masked Data			0				0	Masked Data			0
Unknown				0	Masked Data			0	Masked Data			0
Pacific Islander				0	Masked Data			0	Masked Data			0
Total	79	72	91.1%	0	43	39	90.7%	0	Masked Data			0

Disaggregated Student Subgroups

Look at the disaggregated student subgroups in success, retention, program of study, educational planning, and awards for your area. Are there any equity gaps that you will address in the next 3 years?

If there are any concerning trends over the past 3 or more years, or if equity gaps exist, what is your action plan to address them?

Please add any relevant documents here.

Program/Unit Goals

Increase Online Course Offerings for General Education Level Courses

Program/Unit Goal

Increase our online course offerings by offering PHS 1 (Physical Science) and AST 1A (Astronomy) in order to better service students needing a physical science course for transfer.

Goal Cycle

2024 - 2027

What are you doing now in support of this goal?

Currently, PHS 1 is in our course catalog but does not have a DE component. We would like to update the COR for PHS 1, and in doing so, we will pursue a DE addendum so that it can be offered online 4x a year (fall, winter intersession, spring, and summer). Students have indicated that they prefer online classes due to their increased flexibility. Evidence of this is seen in our enrollment over the past three years, where F2F offerings of PHY 10 tend not to run to do low enrollment, but our OL PHY 10 runs 4x a year at the enrollment cap.

AST 1A is not currently part of Norco's catalog. We have a departmental vote as of March 2024 to add the course to our catalog. However, we have run into an issue in that AST is considered a separate discipline from physics (even though it will be housed under physics the same way PHS is). Before adding AST 1A to our catalog, we must get AST added as a discipline.

PHS 1 and AST 1A are courses that could run as Dual Enrollment thereby increasing access to Norco College courses for that population as well.

What are your plans (3-year) regarding this goal?

PHS 1 Timeline

- Summer 2024 – Major Modification Update of COR for PHS 1; Update DE for PHS 1;
- Fall 2024 – Secure District Discipline and Scikin Department Vote of Major Modification to COR at first meeting. Send to Curriculum Committee.
- Summer 2025 begin offering PHS 1 online.

AST 1 Timeline

- Spring 2024 – Get FSA for full-time faculty in AST; Apply for inclusion of AST as a discipline through strategic planning and senate.
- Fall 2024 – request inclusion of AST 1 to catalog
- Summer 2025 – begin offering AST 1 online.

Please add any relevant documents here.

Mapping

Educational Master Plan (2020-2025): *undefined*

- **2025 Objective 1.2 - KPI 2 (Student Services):** Go from 14,624 headcount to 16,581 total headcount (✓)
- **2025 Objective 1.3 (Student Services):** Expand enrollment with strategic groups (Dual Enrollment, International, Online, California Rehabilitation Center, Veterans, etc.) (✓)
- **2025 Objective 2.1 - KPI 4 (Academic Affairs):** Increase number of degrees completed by 15% annually (✓)
- **2025 Objective 2.2 - KPI 5 (Academic Affairs):** Increase number of certificates completely by 15% annually (✓)
- **2025 Objective 7.5 (Academic Senate):** Add capacity to existing disciplines with a demonstrated need (✓)
- **2030 Goal 1: Access:** Expand college access by increasing both headcount and FTES (✓)

Program/Unit Goals

Progress and Evidence

Evidence Date

03/03/2024

What progress have you made toward this goal?

How do you measure your progress?

Discuss your evidence/results.

Please provide any assessment data or other evidence that supports this Program/Unit Goal.

F2F PHY 10 Enrollment from 2020-2021 AY to 2022-2023 AY

Course-Level: PHY-10

Gender	Enrolled	Retained	Retention Rate	DI	Close Gap
Female	15	15	100.0%	0	0
African American	Masked Data			0	
Asian	Masked Data			0	
Hispanic	Masked Data			0	
Native American				0	
White	Masked Data			0	
Two or More	Masked Data			0	
Unknown				0	
Male	65	52	80.0%	0	3
African American	Masked Data			0	
Asian	Masked Data			0	
Hispanic	27	21	77.8%	0	2
White	12	10	83.3%	0	0
Two or More				0	
Unknown	11	7	63.6%	0	3
Unknown	Masked Data			0	
Hispanic	Masked Data			0	
Native American	Masked Data			0	
White	Masked Data			0	
Unknown	Masked Data			0	
Total	84	68	81.0%	0	0

OL PHY 10 Enrollment from 2020-2021 AY to 2022-2023 AY

Program/Unit Goals

Gender	Enrolled	Retained	Retention Rate	DI	Close Gap
Female	90	83	92.2%	0	2
African American	Masked Data			0	
Asian	13	12	92.3%	0	1
Hispanic	61	56	91.8%	0	2
White	10	9	90.0%	0	1
Two or More	Masked Data			0	
Unknown	Masked Data			0	
Male	76	71	93.4%	0	0
African American	Masked Data			0	
Asian	15	15	100.0%	0	0
Hispanic	41	39	95.1%	0	0
White	13	10	76.9%	0	3
Two or More	Masked Data			0	
Unknown	Masked Data			0	
Hispanic	Masked Data			0	
White	Masked Data			0	
Total	170	158	92.9%	0	0

Is there a resource request associated with this Goal?

No

If yes, please provide a short description.

Please add any relevant documents here.

Update Labs

Program/Unit Goal

Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce.

Goal Cycle

2024 - 2027

What are you doing now in support of this goal?

I have done a substantial amount of work improving our physics courses' labs. We were able to acquire new Vernier Lab equipment from Program Review that was able to be implemented right away in the Fall 2023 semester. This jump-started the process of updating previous 4A labs and creating two new design based labs within 4A (the Projectile Motion Challenge Lab) and the Pendulum Lab.

I have outlined the labs for the Physics 4B course below and indicated my current progress as of Spring 2023, when I last taught the Physics 4B course. Three labs are 2-week labs that will provide students a chance to do in-depth experimental design and analysis.

PHY 4B Labs

Program/Unit Goals

Lab Title	Details	Progress
Electric Charge Inquiry	New Lab – an inquiry-based activity where student pairs discover properties of charge and how to charge objects.	Shared with other faculty in the discipline.
Coulomb's Law Lab	Converted a single-week lab into a 2-week lab to introduce students to design-based labs wherein the students chose parameters around the two variables they were testing. Students are also introduced to managing and analyzing data within Excel.	Shared with other faculty in the discipline.
Parallel Plate Capacitor Lab		To be developed.
Introduction to Electric Circuits Lab	<p>New Lab – Two-week engineering design-based lab wherein students become familiar with how to use a multimeter (week 1) and design 4 of their own experiments (specifying the Independent Variables, Dependent Variables, Control Variables, number of trials, etc.).</p> <p>In Week 2, students carry out their experiments and create a mathematical model where they derive Ohm's Law.</p> <p>This lab could replace the old Ohm's Law lab, especially in Physics 2B and Physics 11.</p>	<p>Shared with other faculty in the discipline.</p> <p>Developed “Instructor’s Guide” for Associate Faculty teaching the lab for the first time.</p> <p>Shared Sample Lab Report with Associate Faculty</p>
RC Circuits Lab	<p>New Lab – Two-week lab wherein students become familiar with how to use an oscilloscope (week 1) and build a voltage divider.</p> <p>In Week 2, students build six RC circuits where they measure the time constant. This lab portion was also rewritten to align with our current equipment and allow students to build their RC circuits using breadboards instead of a decade box.</p> <p>This lab is intended to be a full replacement for the old RC Lab.</p>	Shared with other faculty in the discipline.
Magnetic Field of a Slinky Lab		To be developed.
E/M Lab		Created a set-up file for the students for each of the 4-different set-ups possible within the lab.

Program/Unit Goals

AC/DC Lab		To be developed.
RLC Lab		To be developed.

I have also outlined the labs for the Physics 2A/4A courses below that I have worked on over the Summer and Fall 2023 semesters and indicated my current progress. One of the labs is a 2-week lab that will provide students a chance to do in-depth experimental design and analysis.

PHY 4A Labs		
Lab Title	Details	Progress
Intro to Motion	Updated equipment to Vernier, added observational elements, and added conceptual connections to class content.	Shared with other faculty in the discipline.
Changes in Motion Lab	Updated equipment to Vernier, added observational elements and added conceptual connections to class content.	Shared with other faculty in the discipline.
Projectile Motion Challenge Lab	New Lab – Students use their knowledge of kinematic equations and measurement uncertainty to determine the launch path of a small ball through a vertical hoop and onto a target on the floor.	
Newton's Second Law Lab	Students determine which variables to test that would impact the acceleration of a two-body connected system. From their data, they are able to build a mathematical model for $F=ma$ $\sum \vec{F} = m\vec{a}$?	To be developed
Pendulum Lab	2-Week Lab - Students determine which variables to test that would impact the period of a pendulum. From their data, they are able to build a mathematical model for a simple pendulum at small angles.	Shared with other faculty in the discipline. Shared Sample Lab Report with Associate Faculty
Momentum Lab	Students determine which variables to test that would impact the final velocities of a two-body collision system. From their data, students are able to determine the conditions for which momentum and kinetic energy are conserved.	Developed and tested in Fall 2023.
Rotation Lab		Draft a rotation lab to be tested in Spring 2024.

Program/Unit Goals

What are your plans (3-year) regarding this goal?

There is a substantial amount of work that needs to be done in order to update the labs. A rewrite of a lab takes, on average, three semesters for full implementation. In semester 1, the draft is written, shared with other faculty for feedback, and tested with a group of students. Then, corrections for content and clarity are made. In semester 2, the lab is tested with another group of students, and any final revisions for content and clarity are made. Then, in semester 3, it is ready to be shared with all faculty in the discipline for full implementation.

In the next three years, the revision schedule includes updating:

- 3 Mechanics Labs
 - Newton's Second Law
 - Rotation
 - Simple Harmonic Oscillation
- 4 Electricity and Magnetism Labs
 - Capacitor Lab
 - E/M Lab
 - Magnetic Field of a Slinky Lab
 - LRC Circuit Lab
- 2 Thermodynamics Labs
 - Heat Transfer Lab
 - Thermal Expansion Lab
- 3 Optics Labs
 - Reflection and Refraction Lab
 - Lenses and Images Lab
 - Single Slit Diffraction Lab
- 2 Oscillation Labs
 - Speed of Sound Lab
 - Waves on a String Lab

Updates have two different levels. Some of the labs need rewrites for clarity and content but will utilize the equipment we already have; for example, one of the thermodynamics labs on “heat transfer” has fully functioning equipment setups, but the lab lacks detail and practice application for students. Other labs, however, have equipment that is not functional, resulting in not being able to run the lab effectively. For example, in any of our electricity labs that require the use of a multimeter to accurately read voltages or current in a circuit, many of our multimeters are broken and give unrealistic readings even for known measurements. For example, a D-cell battery should give a voltage reading of 1.5V, but some of our multimeters only read fractions of a volt across the same

Program/Unit Goals

battery. An update in equipment would result in a complete rewrite from the ground up to expand the experience, skill development, and practical application for students.

A more detailed timeline cannot be provided at this time, as Physics is currently a single-faculty member discipline. Revision of the labs necessitates that I will be teaching the course while its labs are undergoing revisions. Therefore, the lab update schedule will depend on my teaching schedule over the next three years.

Please add any relevant documents here.

Mapping

Educational Master Plan (2020-2025): *undefined*

- **2025 Objective 3.1 - KPI 8 (Student Services):** Reduce the equity gap for African American students by 40% (✓)
- **2025 Objective 3.2 - KPI 9 (Student Services):** Reduce the equity gap for Latinx students by 40% (✓)
- **2025 Objective 3.3 - KPI 10 (Student Services):** Reduce the equity gap for Men of Color by 40% (✓)
- **2025 Objective 3.4 - KPI 11 (Student Services):** Reduce the equity gap for LGBTQ+ students by 40% (✓)
- **2025 Objective 3.5 - KPI 12 (Student Services):** Reduce the equity gap for Foster Youth students by 40% (✓)
- **2025 Objective 6.5 (Office of the President):** Position the college's image and reputation as a leading academic institution in the region (✓)
- **2030 Goal 3: Equity:** Close all student equity gaps. (✓)

Progress and Evidence

Evidence Date

03/03/2024

What progress have you made toward this goal?

How do you measure your progress?

Discuss your evidence/results.

Please provide any assessment data or other evidence that supports this Program/Unit Goal.

Importance of Design Based Labs in the Literature

There is ample literature in the physics education community citing the importance of design-based labs to prepare students for the STEM workforce (Bao & Koenig (2019); Etkina et al., (2010), Holmes & Wieman (2019), Koenig et al., (2019), and Zhao et al., (2023). Design-based labs promote the critical thinking skills that are expected of STEM majors. In addition, design-based labs help close equity gaps in laboratory contexts because they give students a sense of ownership to their learning as they choose variables to test and how to test them.

Not every lab lends itself to being purely design-based – for example, in one of our electricity and magnetism labs on Coulomb's Law – students are measuring a fundamental constant. The apparatus needed to perform the experiment must be handled in a very precise manner – allowing students to only measure two predetermined variables. However, this lab can still incorporate 21st-century skills through the use of Excel to have students learn to manage their data in appropriately labeled tables and to interpret their data through graphs to see the relationship between variables as being proportional, inversely proportional, or exponential in nature giving enhanced meaning to the equations presented in class.

Bao, L., & Koenig, K. (2019). Physics education research for 21st century learning. *Disciplinary and Interdisciplinary Science Education Research*, 1(1), 2.

Program/Unit Goals

Etkina, E., Karelina, A., Ruibal-Villasenor, M., Rosengrant, D., Jordan, R., & Hmelo-Silver, C. E. (2010). Design and reflection help students develop scientific abilities: Learning in introductory physics laboratories. *The Journal of the Learning Sciences*, 19(1), 54-98.

Holmes, N. G., & Wieman, C. E. (2018). Introductory physics labs: We can do better. *Physics today*, 71(1), 38-45.

Koenig, K., Wood, K. E., Bortner, L. J., & Bao, L. (2019). Modifying traditional labs to target scientific reasoning. *Journal of College Science Teaching*, 48(5), 28-35.

Zhao, W., Wei, X., Wang, Z., Zhang, Z., & Sun, L. (2023). Interesting Introductory Physics Labs to Engage Students in Experimental Design. *The Physics Teacher*, 61(7), 599-602.

Is there a resource request associated with this Goal?

Yes

If yes, please provide a short description.

Several of the items for lab equipment within our resource requests are for the purposes of updating our labs.

Please add any relevant documents here.

ZTC Classes

Program/Unit Goal

Increase our offering of ZTC courses at all levels (general, 2-series, and 4-series) to help students earn their degrees without incurring additional financial burden.

Goal Cycle

2024 - 2027

What are you doing now in support of this goal?

As of right now, the full-time faculty member teaches all of her courses at ZTC. This is done through the use of "University Physics" by Openstax (and OER publication) as the textbook adoption of all 2-series and 4-series classes. In addition, some of the associate faculty members are also moving toward OER adoption.

Where we are struggling right now as a program is that associate faculty members are often unwilling to make the switch to OER books due to the lack of familiarity with the books as well as the lack of associated online homework/quiz/exam software. At the moment, there is only one full-time faculty member and one associate faculty member offering ZTC courses, and six associate faculty members who do not. While it is entirely possible for a student to complete all of the course requirements in physics through ZTC courses, it is not guaranteed.

What are your plans (3-year) regarding this goal?

In order to increase ZTC offerings, we would like to do the following over the next three years:

- Inquire about a library subscription to the preferred textbooks and associated homework platform for two Pearson textbooks, "Conceptual Physics" and "Conceptual Physical Science," which are the preferred texts of most of the associate faculty for our online PHY 10 and PHS 1 courses, respectively.
- Build up a bank of viable OER or self-made homework questions within Canvas quizzes or ADAPT (an OER homework system that is free for students in California) to help ease the transition for faculty to consider using OER textbooks.
- Provide training to new full-time and associate faculty on using ADAPT to create online homework sets that can be automatically graded (for quantitative questions) and integrated directly into Canvas.
- Provide training to new full-time and associate faculty on using JoVE to create supplemental instructional playlists to help students with learning new content, especially if they have missed class.

Please add any relevant documents here.

Program/Unit Goals

Mapping

Educational Master Plan (2020-2025): *undefined*

- **2025 Objective 1.2 - KPI 2 (Student Services):** Go from 14,624 headcount to 16,581 total headcount (✓)
- **2025 Objective 1.3 (Student Services):** Expand enrollment with strategic groups (Dual Enrollment, International, Online, California Rehabilitation Center, Veterans, etc.) (✓)
- **2025 Objective 2.1 - KPI 4 (Academic Affairs):** Increase number of degrees completed by 15% annually (✓)
- **2025 Objective 2.2 - KPI 5 (Academic Affairs):** Increase number of certificates completely by 15% annually (✓)
- **2025 Objective 3.1 - KPI 8 (Student Services):** Reduce the equity gap for African American students by 40% (✓)
- **2025 Objective 3.2 - KPI 9 (Student Services):** Reduce the equity gap for Latinx students by 40% (✓)
- **2025 Objective 3.3 - KPI 10 (Student Services):** Reduce the equity gap for Men of Color by 40% (✓)
- **2025 Objective 3.4 - KPI 11 (Student Services):** Reduce the equity gap for LGBTQ+ students by 40% (✓)
- **2025 Objective 3.5 - KPI 12 (Student Services):** Reduce the equity gap for Foster Youth students by 40% (✓)
- **2025 Objective 6.5 (Office of the President):** Position the college's image and reputation as a leading academic institution in the region (✓)
- **2030 Goal 3: Equity:** Close all student equity gaps. (✓)

Progress and Evidence

Evidence Date

03/15/2024

What progress have you made toward this goal?

How do you measure your progress?

Discuss your evidence/results.

Please provide any assessment data or other evidence that supports this Program/Unit Goal.

Course	ZTC Sections (FS 2022)	NON-ZTC Sections (FS 2022)	ZTC Sections (SS 2023)	NON-ZTC Sections (SS 2023)	ZTC Sections (FS 2023)	NON-ZTC Sections (FS 2023)	ZTC Sections (SS 2024)	NON-ZTC Sections (SS 2024)
PHY 10	0	1	0	1	0	1	0	1
PHY 2A	1	0	0	0	1	0	0	0
PHY 2B	0	0	1	0	0	0	1	0
PHY 4A	0	3	1	2	3	1	1	3
PHY 4B	2	1	1	2	0	3	1	2
PHY 4C	0	1	0	1	0	1	1	0

Is there a resource request associated with this Goal?

Yes

If yes, please provide a short description.

JoVE Subscription; Classroom sets of books (University Physics for Life Sciences, Conceptual Physics, and Conceptual Physical Science).

Please add any relevant documents here.

Program/Unit Goals

[Fall 2022 Class Schedule with Faculty Assignment.pdf](#);
[Fall 2023 Class Schedule with Faculty Assignment.pdf](#);
[Spring 2023 Class Schedule with Faculty Assignment.pdf](#);
[Spring 2024 Class Schedule with Faculty Assignment.pdf](#)

Prepare for Common Course Numbered 4-Series

Program/Unit Goal

Prepare our labs and our curriculum for Common Course Numbered 4-Series

Goal Cycle

2024 - 2027

What are you doing now in support of this goal?

Starting in Fall 2027, there will be a new PHY-4 series consisting of three semesters instead of four. As such, the content of PHY 4C is going to expand the most as we will need to run at least two additional optics labs and modern labs, which we currently do not have any equipment for.

We have mapped out what additional labs we would like to do:

Optics

- Polarization Lab
- Vision Correction of Human Eyes

Modern Physics

- E/M Lab (Moved from PHY 4B)
- Atomic Spectra Lab
- Frank Hertz Lab
- Plank's Constant Lab
- Photoelectric Effect Lab

What are your plans (3-year) regarding this goal?

2025-2026 AY

- Determine feasible labs for expansion of PHY 4C course
- Write a syllabus for the new PHY 4C course, including a course calendar and lab schedule.

2026-2027 AY

- Begin acquiring lab equipment for the expansion of the labs in the new PHY 4C course
- Begin writing lab materials for the new experiments

Please add any relevant documents here.

Mapping

Educational Master Plan (2020-2025): *undefined*

- **2025 Objective 6.5 (Office of the President):** Position the college's image and reputation as a leading academic institution in the region (✓)

Curriculum

Are all your courses current (within four years)?

Yes

What percentage of your courses are out of date?

0%

If you have courses that are not current, are they in the curriculum process?

For out of date courses that are not already in progress of updating, what is your plan?

Do you have proposals in progress for all the DE courses you intend to file?

No

Do you require help to get your courses up to date?

No

Please add any relevant documents here.

Credit for Prior Learning

1. Credit for Learning (CPL) is one of the state Chancellor's projects and is part of the CCCCO Vision 2030. How many times has your discipline discussed/reviewed CPL?

None. Up until this year, I was a solo FT faculty.

2. Does your discipline currently offer Credit for Prior Learning (CPL) opportunities?

Yes

3. Please specify the approved courses and the types of CPL opportunities offered (e.g., Joint Service Transcript [JST], Standardized Exams, Credit by Exam, Industry Credential/Certification, Portfolio Review).

If students take the AP Physics 1 and 2 Exams (a standardized assessment), they can get credit for PHY 10 and PHY 11. If students take the AP Physics C - Mechanics exam, they can get credit for PHY 4A.

4. How many times has your discipline awarded CPL awards over the past two years? Please provide data, if available.

I do not know how many students would have used AP Physics Exams to get credit, but the office of admissions and records would likely have this data.

4. Please upload any supporting documentation.

5. If CPL is not currently offered within your discipline, please explain the reasons. Additionally, include any plans or timelines for when CPL implementation has been or will be discussed within your school or discipline.

5. Please upload any supporting documentation.

6. Would your discipline benefit from additional resources or information on CPL to support implementation?

Not at this time.

Equity Related Professional Development Questions

1. Which equity-related professional development trainings have members of your area participated in to improve student learning, student support, and/or college support?

In the fall and spring semesters of every academic year, Lindsay Owens attends the Norco College FLEX trainings, which often include equity-based sessions. In July 2022, Lindsay Owens attended the yearly American Association of Physics Teachers (AAPT) conference, and its joint-conference, the Physics Education Research Conference (PERC) in Grand Rapids, Michigan. AAPT and PERC focus heavily on best practices in the classroom and physics labs as well as how to address issues of diversity, equity, and inclusion within physics. In July 2023, Lindsay Owens attended the yearly LibreFest Conference (online). LibreFest covered the use of LibreTest, an OER platform wherein instructors can build custom texts for their courses based on currently available OER materials. In addition, instructors have the option to edit current OER materials to specifically tailor content to their courses.

2. What knowledge or skills/techniques have members in your area implemented from these trainings and what changes have you seen?

As a result of attending AAPT/PERC not just in 2022 but in several years prior as well, the research on design-based labs with mathematical model building or concept building/observation labs continues to remain strong. Such skill-based labs teach students experimental skills that can be transferred beyond the physics classroom. In addition, conceptual/observation labs show increased retention of knowledge of the subject matter as compared to more traditional labs. As part of the lab revamps taking place in Physics, there is a drastic shift away from the traditional "measure a known value within a certain tolerance" to "design an experiment that will determine what affects a known quantity."

As a direct result of attending LibreFest – Lindsay Owens has begun crafting a custom textbook for the Physics 4C class, which at the moment relies on using the content of three separate volumes of University Physics published by Openstax. The order of chapters will reflect a suggested order of topic presentation for associate and new faculty teaching the course. In addition, this custom version will spare students the confusion of covering the same chapter numbers but across multiple volumes. For example, using Openstax University Physics, we currently cover Chapters 1-4 in Volume 2 (thermodynamics) and Chapters 1-4 again but in Volume 3 (optics).

In addition, Libertext has launched ADAPT, a free online homework software alternative to the traditional WebAssign or Mastering platforms that are currently used and favored by associate faculty. ADAPT has piqued the interest of some of the associate faculty as a viable alternative to traditional homework platforms which would reduce the overall cost of their classes for students.

3. What additional equity-related professional development/trainings do you seek to better support your area?

Training specific to serving the traditionally underrepresented students in physics, namely the Hispanic, LatinX, and Chicano/a students, within the context of an intro-level STEM classroom. I feel that many of the trainings I have attended in the past were more focused on humanities, where students were able to bring their culture and experiences into the classroom and into their written (often reflective) work. In a general education course, such as our Physics 10 class, I am able to find opportunities to bring students' experiences into their assignments. For example, in Physics 10, we read media/journal articles and write reflections; one such article was about painting the streets of Arizona gray in order to reduce asphalt temperatures. The corresponding assignment included a discussion question asking students to reflect on how many trees are in their neighborhood and how people typically stay cool in their neighborhood in the extreme summer heat. However, in major-level level courses, I personally struggle to find opportunities to do this among the extensive physics content and mathematical formulations that we must cover.

Please add any relevant documents here.

Equity Related Professional Development Questions

1. Which equity-related professional development trainings have members of your area participated in to improve student learning, student support, and/or college support?

During the 2024-2025 AY, the FT faculty participating in a variety of equity based trainings that were offered through FLEX on campus. In addition, one of the faculty participated in a monthly community of practice style meeting with other physics faculty at other California community colleges.

2. What knowledge or skills/techniques have members in your area implemented from these trainings and what changes have you seen?

For one of our faculty, they implemented a variety of additional supports for struggling students in the classroom, including additional resources and extra office hours before exams. In turn, they saw improved student performance on quizzes and exams for those who attended extra office hours. In addition, giving students access to notes and other course materials makes it easier for students to follow along in the lecture as they can focus on annotating provided notes. They noticed that students were listening more attentively in lecture rather and asking more insightful questions on the course content than focusing their attention on trying to write everything down.

For another one of our faculty, one practice that has been implemented more in this past year is emailing students who are struggling earlier in the semester (separate from early alert) as opposed to after the first midterm exam. These messages let the students know that we are aware they are struggling and list out available resources that they can utilize to help them improve. Two of three students responded positively to these messages in the Fall 2024 and Spring 2025 semesters and we hope students will begin to utilize their resources earlier on rather than waiting until after the first midterm exam, which is often worth between 15%-20% of their course grade.

3. What additional equity-related professional development/trainings do you seek to better support your area?

STEM focused equity trainings that will allow us to target and close equity gaps without compromising rigor in our programs.

Please add any relevant documents here.

Equity Related Professional Development Questions

1. Which equity-related professional development trainings have members of your area participated in to improve student learning, student support, and/or college support?

Mostly FLEX offerings and the Equity Summit in Fall 2025

2. What knowledge or skills/techniques have members in your area implemented from these trainings and what changes have you seen?

In response to the growing amount of RSI in online courses, our PHS-1 and PHY-10 courses are undergoing a big expansion to not only show RSI but to improve communication in general between the instructor and the students. This includes being more proactive in reaching out to students who may be struggling but have not yet communicated that.

3. What additional equity-related professional development/trainings do you seek to better support your area?

Attending the annual American Association of Physics Teachers and Physics Education Research Conference in summer 2026 will give us the most direct training and professional development that can be applied directly to our classroom and students.

Please add any relevant documents here.

Assessment

Equity Gap by Gender

Date

03/09/2024

Observation**What did you notice?**

There is an equity gap in terms of gender for both our "female" and "non-binary" self-identified student groups in comparison to the students identifying as "male."

Course(s)

PHY 4A, PHY 2A

SLO(s)

All

Discussion/Analysis

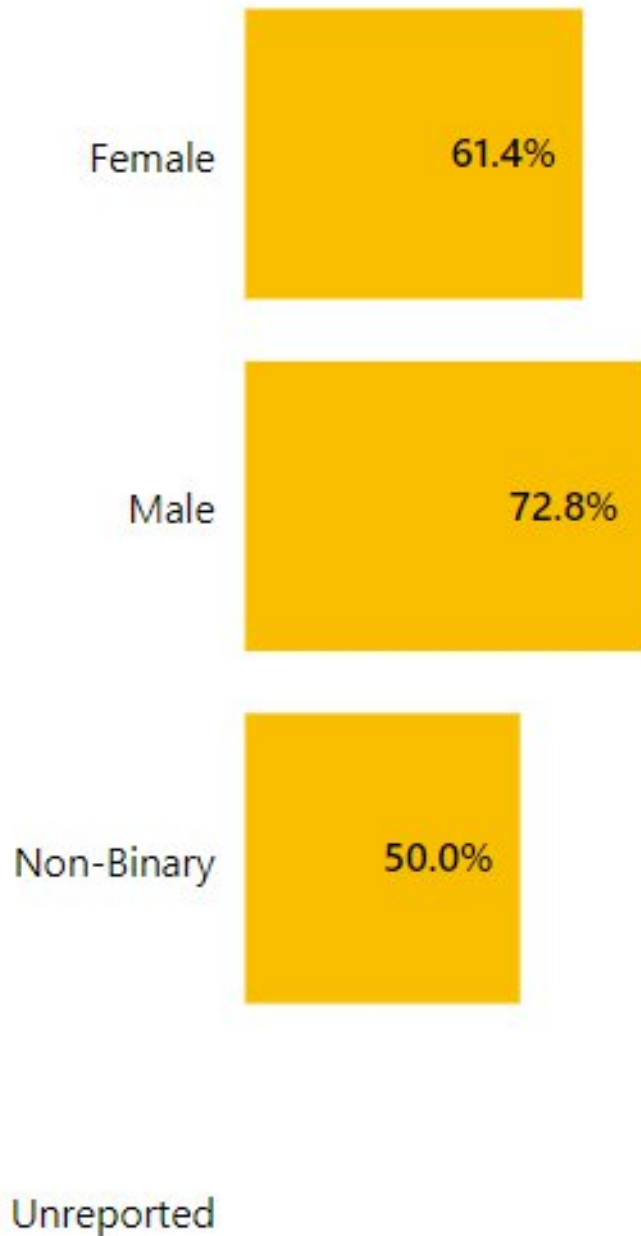
Across both PHY 4A and PHY 2A for the Spring 2023 and Fall 2023 semesters, there is an equity gap for students identifying as "female" and "non-binary" in comparison to the students identifying as "male." It should be noted that since only one section of PHY 4A was assessed in Spring 2023, two sections of PHY 4A were assessed in Fall 2023, and one section of PHY 2A was assessed in Fall 2023, our data sets are very small and may not be representative of the overall performance of students in the program.

While we do have data from previous semesters, it was not broken down by gender, race/ethnicity, or age group. So we decided not to include that data in this program review.

Please paste any relevant screenshots here.

Assessment

Mastery by Gender



Assessment

Please add any relevant documents here.

Actions

Course Name and SLO

All courses, all SLO's

Changes necessary to make improvements

N/A no specific changes made.

Person(s) Responsible

Monitoring/Progress

Monitoring/Progress Date

02/24/2026

Monitoring/Progress Period

Spring 2026

What changes did you see as a result of the action?

The equity gap is closing, as female students now have an overall mastery of 67.2%, non-binary students have an overall mastery of 69.2% and male students have an overall mastery of 71.1%.

How would you evaluate the degree of improvement to the Course SLO as a result of your changes?

Moderate Improvement

Why do you think the changes were successful or not?

What updates (if any) will you make to your original changes as a result of this monitoring and/or progress update?

Equity Gaps by Age Group

Date

03/09/2024

Observation

What did you notice?

Non-Traditional Students (25+ years of age) Achieve Higher Levels of Mastery than Traditional Students (18-25 years of age).

Course(s)

PHY 4A and PHY 2A

SLO(s)

All

Discussion/Analysis

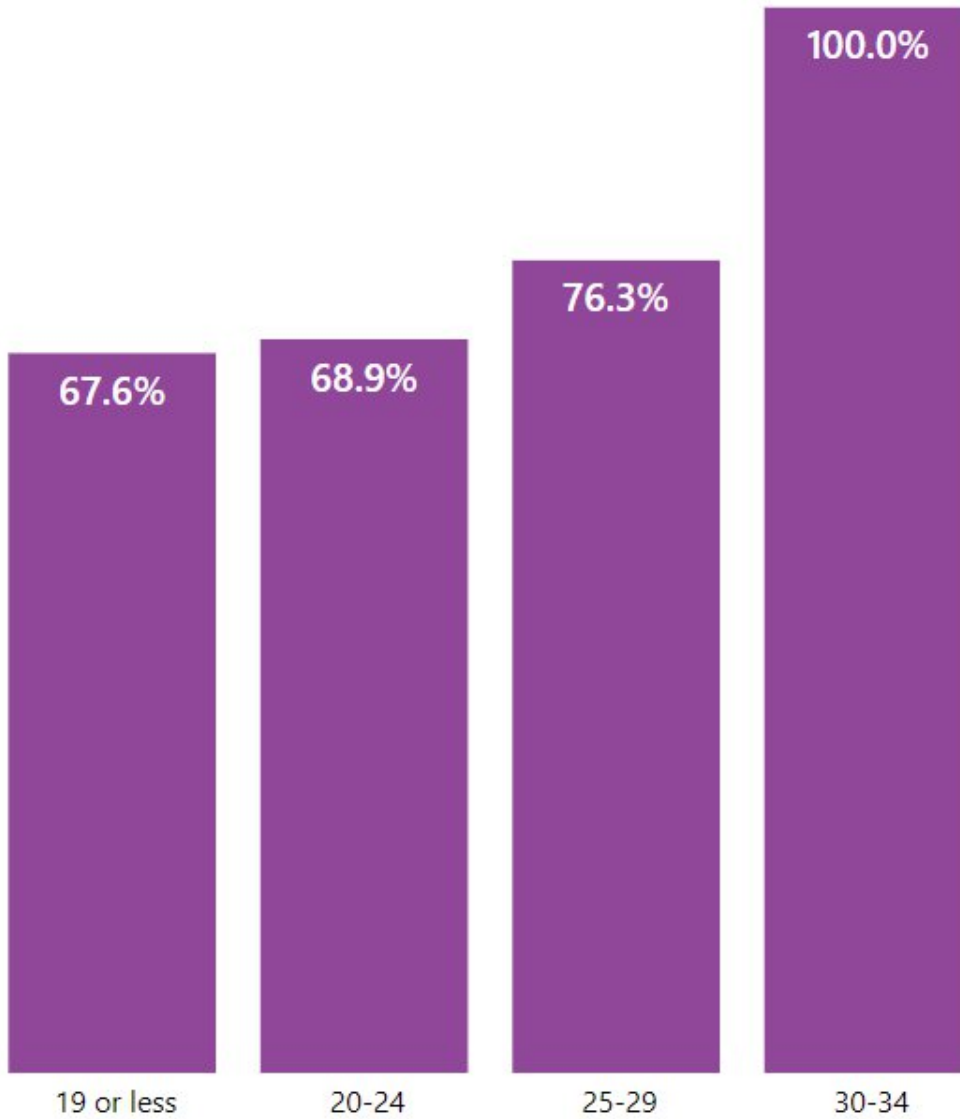
Across both PHY 4A and PHY 2A for the Spring 2023 and Fall 2023 semesters, non-traditional students (25+ years of age) achieve higher levels of mastery than traditional students (18-25 years of age). It is important to note that the number of students in the non-traditional groups is smaller (n = 10) compared to the traditional student groups (n = 79). The literature on non-traditional students was predominately focused on attrition rates, and there was a distinct lack of literature addressing non-traditional students at community colleges, giving very little insight as to what might be happening here at Norco College. One study in the case of engineering majors did specifically report that there were no significant differences in GPA for traditional vs non-traditional students (McNeil, Ohland, & Long (2016).

McNeil, J. C., Ohland, M. W., & Long, R. A. (2016, October). Entry pathways, academic performance, and persistence of nontraditional students in engineering by transfer status. In 2016 IEEE frontiers in education conference (FIE) (pp. 1-7). IEEE.

Please paste any relevant screenshots here.

Assessment

Mastery by Age Group



Please add any relevant documents here.

Actions

Course Name and SLO

PHY 4A/2A All SLO's

Changes necessary to make improvements

Working with MESA to offer pre-semester bootcamps, mid semester review sessions, and final exam review sessions for students enrolled in PHY 4A/2A courses in order to help support students.

Person(s) Responsible

Monitoring/Progress

Monitoring/Progress Date

Assessment

02/24/2026

Monitoring/Progress Period

Spring 2025

What changes did you see as a result of the action?

Small increase in overall mastery in our <25 age demographic, but with a large expansion in age demographics that were previously not captured.

How would you evaluate the degree of improvement to the Course SLO as a result of your changes?

Minimal Improvement

Why do you think the changes were successful or not?

There were minimal changes, I think the inclusion of additional resources is definitely helping students.

What updates (if any) will you make to your original changes as a result of this monitoring and/or progress update?

There will be continued focus on providing supports for students who may not be used to the rigor of college level physics classes.

Equity Gaps By Race/Ethnicity

Date

03/09/2024

Observation

What did you notice?

Across both PHY 4A and PHY 2A for the Spring 2023 and Fall 2023 semesters, there is an equity gap for African American students in comparison to all other traditionally underrepresented groups. However, our n-values for many of these groups are so small and concrete conclusions cannot be drawn.

Course(s)

PHY 4A and PHY 2A

SLO(s)

ALL

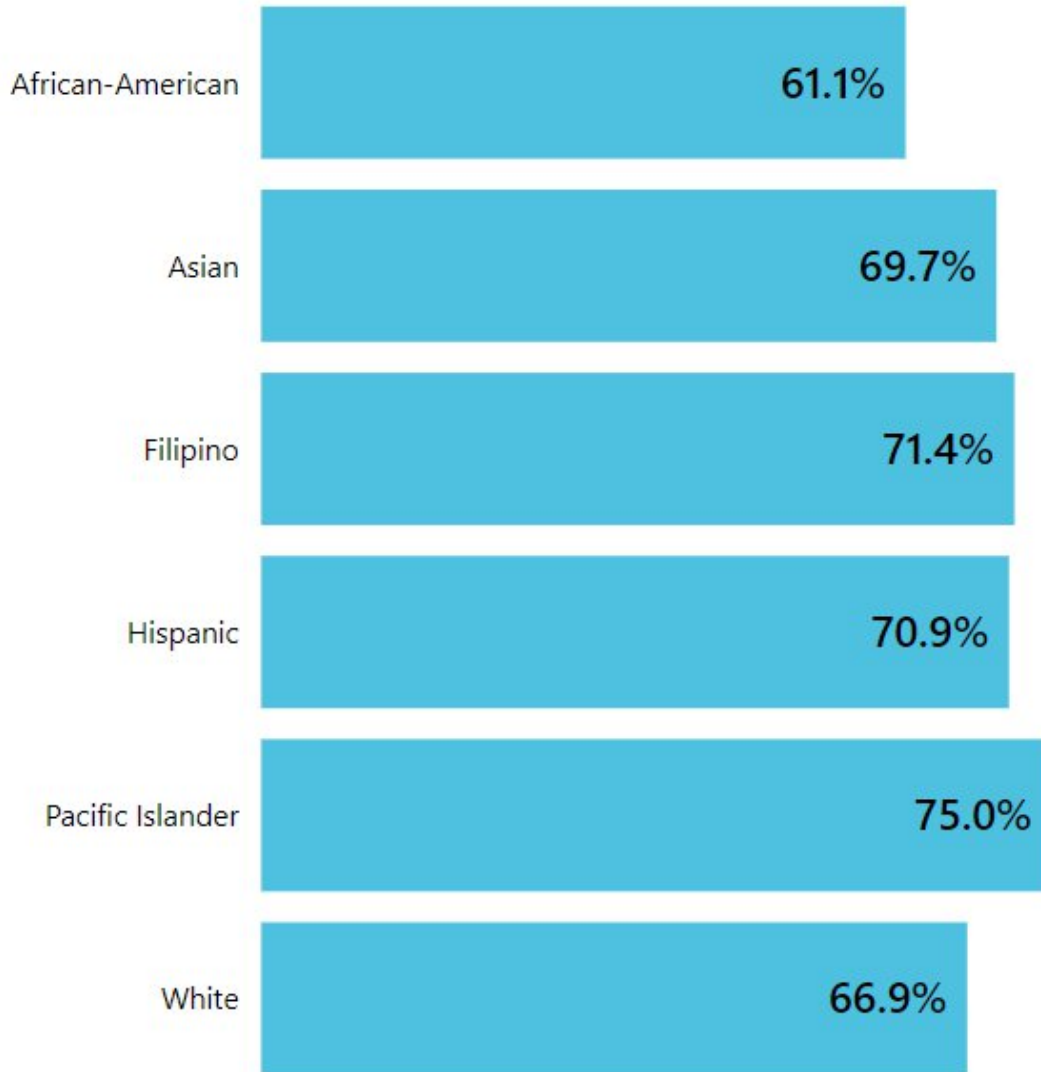
Discussion/Analysis

Across both PHY 4A and PHY 2A for the Spring 2023 and Fall 2023 semesters, there is an equity gap for African American students in comparison to all other traditionally underrepresented groups. It is worth noting that only three students identified as African American, suggesting an additional concern in regard to who is taking physics classes in the first place. Students identifying as either Filipino (n = 3) or Pacific Islander (n = 1) also were very small.

Please paste any relevant screenshots here.

Assessment

Mastery by Race/Ethnicity



Please add any relevant documents here.

Equity Gaps by Declared Major

Date

03/09/2024

Observation

What did you notice?

In PHY 2A, there is an equity gap among students declaring Math & Science, Math & Science CSUGE, and Math & Science IGETC in comparison to the other majors. In PHY 4A, there is an equity gap among students declaring Pre-Engineering as their major.

Course(s)

4/3/2026

Assessment

PHY 4A and PHY 2A

SLO(s)

All

Discussion/Analysis

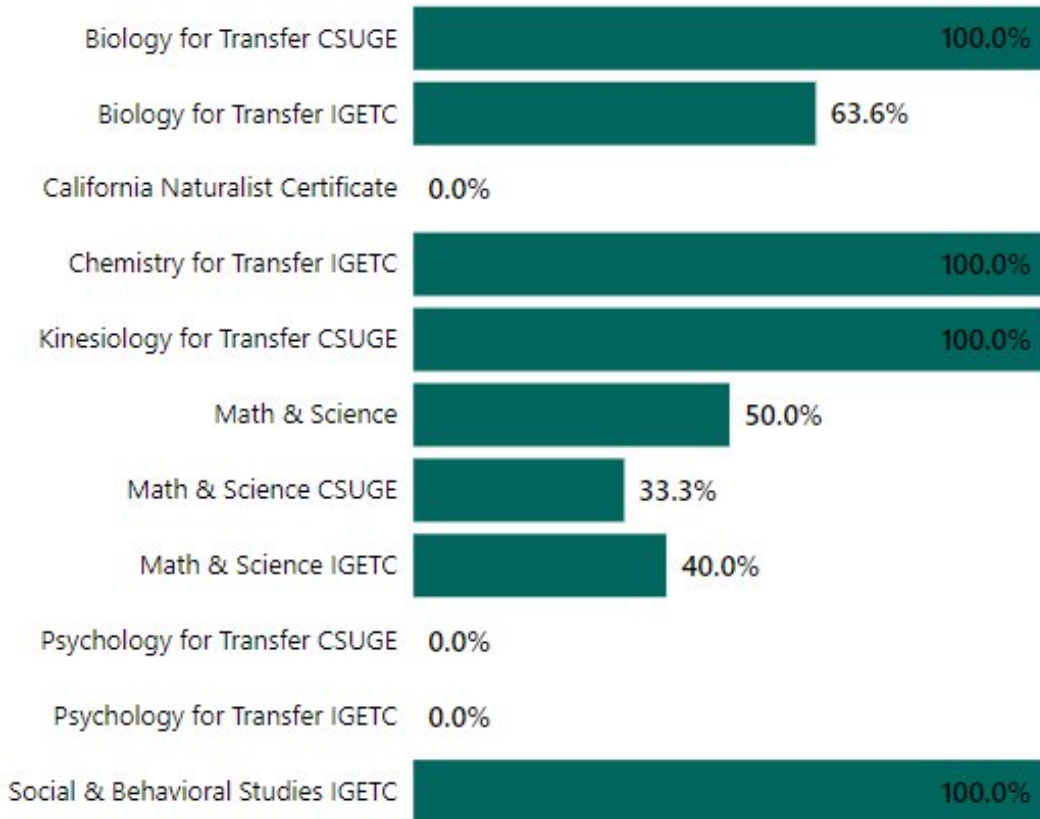
In PHY 2A, there is an equity gap among students declaring Math & Science, Math & Science CSUGE, and Math & Science IGETC in comparison to the other majors, though Biology for Transfer IGETC is also quite low in comparison to the other majors as well. One limitation of this dashboard was not it did not show the n-values for each major, so we are unable to determine if the master levels are arbitrarily inflated/deflated for specific majors without this information.

In PHY 4A, there is an equity gap among students declaring Pre-Engineering as their major. There is a lot of variation in SLO mastery, which again, may be due to some arbitration inflation/deflation depending on how many students have declared that major.

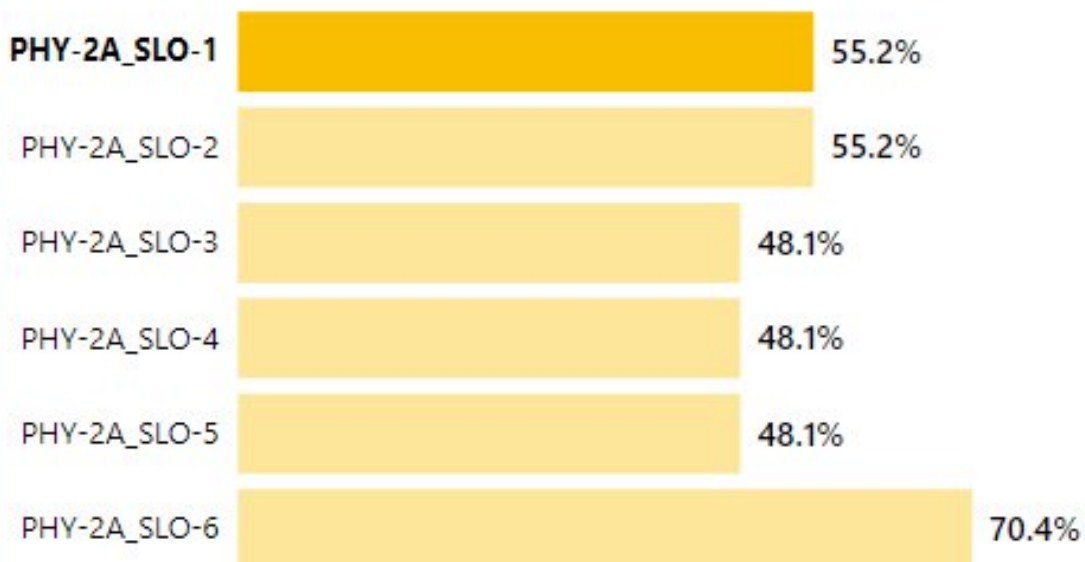
Please paste any relevant screenshots here.

Assessment

Mastery by Declared Major

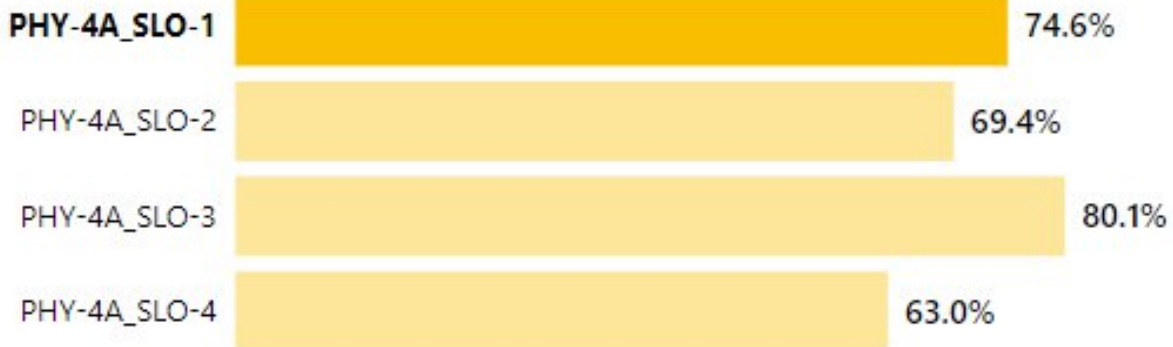
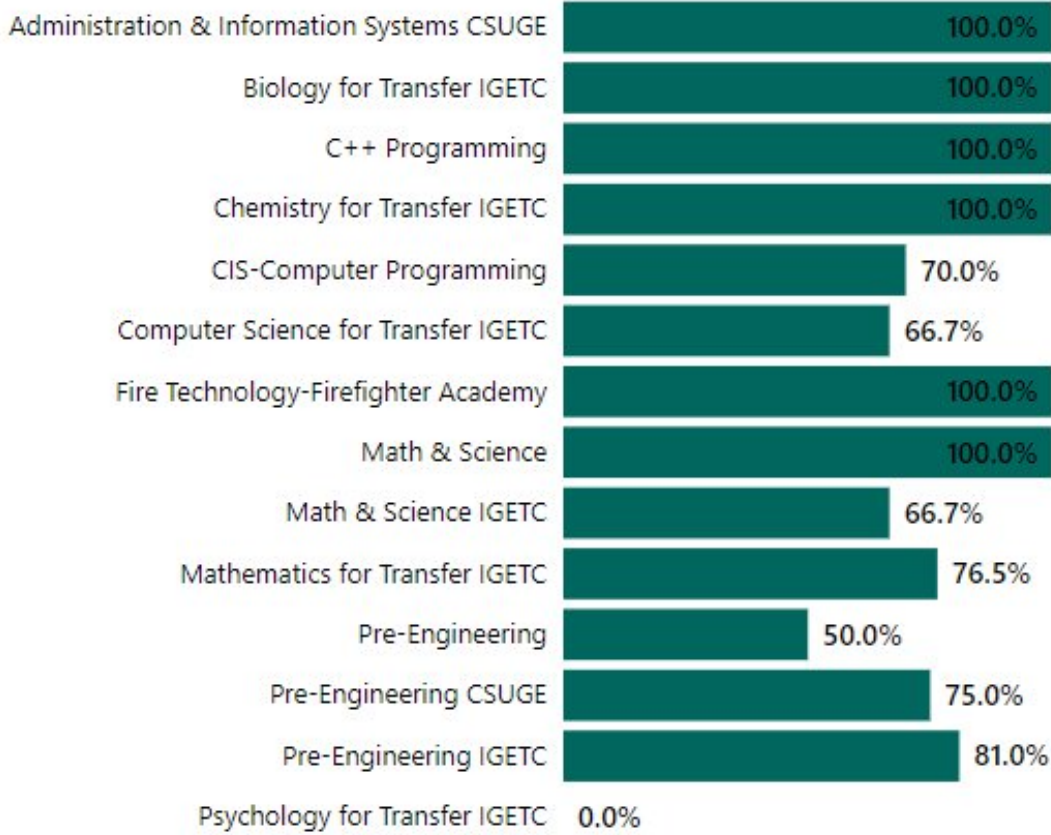


Mastery by Learning Outcome



Assessment

Mastery by Declared Major



Please add any relevant documents here.

Resource Requests

Vernier Go Direct Rotary Motion Sensors

Resource Year

2025 Update

What resources do we already have?

Vernier Wired Rotary Motion Sensors

What resources do you need?

10 Vernier Go Direct Rotary Motion Sensors

\$ Amount Requested

2,000

Resource Type

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

This is a request to replace broken/outdated equipment that is currently used in the Centripetal Force Lab and Rotational Motion Lab in PHY 2A/4A. Our current equipment is over 15 years old, requires a converter box, and no longer functions/is not compatible with modern day computers. This resource request supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

2

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

BK Precision Multimeters

Resource Year

2024 - 2027

What resources do we already have?

N/A our current multimeters are broken and beyond repair.

What resources do you need?

20 BK Precision 2704c Multimeters

\$ Amount Requested

1,900

Resource Type

ITEM: Equipment, Services, Software, Furniture

Resource Requests

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

This is a request to replace broken equipment that is currently used in multiple physics labs in both PHY 2B and PHY 4B. Without functioning multimeters, students are unable to take data in labs, rendering the associated lab experience useless. This supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

1

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

7

2025-26 Council Ranking

Mapping

Instructional: Physics: undefined

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

PC Lab Computers

Resource Year

2024 - 2027

What resources do we already have?

iMAC books that are at their end of life

What resources do you need?

20 PC Computers

\$ Amount Requested

30,500

Resource Type

ITEM: Technology

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

This is a request to replace broken equipment that is currently used in multiple physics labs in all lab courses. Without functioning computers, students are unable to take or manage data in labs, rendering the associated lab experience useless. This resource request supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

2

Is this request

New

For Administrative Use Only

Funding Status

In Progress

Notes

Council Ranking

12

2025-26 Council Ranking

4/3/2026

Resource Requests

Mapping

Instructional: Physics: undefined

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

JoVE Subscription

Resource Year

2024 - 2027

What resources do we already have?

JoVE Subscription through the Library

What resources do you need?

To maintain the site license of JoVE through the library

\$ Amount Requested

16,000

Resource Type

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

Biology also uses this service, they have supplemental videos, quizzes, and educational resources for students to help them succeed in our Physics 4-seires and 2-series classes to help increase success and retention rates as seen in our Data Review. Also, they show real world scientists, engineering, and funded research projects which are great for inclusion in our PHY 10 and PHS 1 courses. This supports one of our program goals addressing the increase in offerings of ZTC courses for students.

This request for my area is Priority #:

3

Is this request

New

For Administrative Use Only

Funding Status

In Progress

Notes

Council Ranking

3

2025-26 Council Ranking

Mapping

Data Review - Instructional: undefined

- **1.:** What overall trends do you see in success, retention, program of study, educational planning, and awards over the past 3 or more years? (✓)
- **2.:** Look at the disaggregated student subgroups in success, retention, program of study, educational planning, and awards for your area. Are there any equity gaps that you will address in the next 3 years?? (✓)
- **3.:** If there are any concerning trends over the past 3 or more years, or if equity gaps exist, what is your action plan to address them? (✓)

Educational Master Plan (2020-2025): undefined

- **2025 Objective 3.1 - KPI 8 (Student Services):** Reduce the equity gap for African American students by 40% (✓)
- **2025 Objective 3.2 - KPI 9 (Student Services):** Reduce the equity gap for Latinx students by 40% (✓)

Resource Requests

- **2025 Objective 3.3 - KPI 10 (Student Services):** Reduce the equity gap for Men of Color by 40% (✓)
- **2025 Objective 3.4 - KPI 11 (Student Services):** Reduce the equity gap for LGBTQ+ students by 40% (✓)
- **2025 Objective 3.5 - KPI 12 (Student Services):** Reduce the equity gap for Foster Youth students by 40% (✓)
- **2030 Goal 3: Equity:** Close all student equity gaps. (✓)

Instructional: Physics: undefined

- **Equity Gap by Gender:** undefined (✓)
- **Equity Gaps By Race/Ethnicity:** undefined (✓)
- **Equity Gaps by Age Group:** undefined (✓)
- **Equity Gaps by Declared Major:** undefined (✓)
- **ZTC Classes:** Increase our offering of ZTC courses at all levels (general, 2-series, and 4-series) to help students earn their degrees without incurring additional financial burden. (✓)

Student Equity Plan: undefined

- **Persistence for Black/African American Students:** Percentage of first-time college students who enrolled in the subsequent semester. (✓)
- **Successful Enrollment for Black/African American Students:** Percentage of first-time college students who applied and enrolled in the same year in a primary term. (✓)
- **Transfer for Hispanic/ Latinx Students:** Percentage of first time in college students who transferred to a four-year institution within three years. (✓)
- **Vision Goal Completion for Hispanic/ Latinx Students:** Percentage of first-time college students who completed a degree or certificate in three years. (✓)

Vernier Graphical Analysis Software License

Resource Year

2024 - 2027

What resources do we already have?

3 Year License for Vernier Graphical Analysis Software

What resources do you need?

To maintain our License for the Vernier Graphical Analysis Software

\$ Amount Requested

300

Resource Type

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

To use Vernier lab equipment, which is implemented for labs in all courses we are required to have an associated site license for the Vernier Graphical Analysis software. All Vernier lab equipment, sensors, probes, etc. pair to the computers via this software. This resource request supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

4

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

Resource Requests

17

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Pasco Mini Ball Launchers

Resource Year

2024 - 2027

What resources do we already have?

We have six functioning ball launchers.

What resources do you need?

4 additional mini ball launchers

\$ Amount Requested

715

Resource Type

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

We currently have six functioning ball launchers that are used in the projectile motion lab in PHY 4A/PHY2A. However, due to the size of our classes it is critical that we be able to run a full 8 set ups with 2 additional back up set ups for larger classes that enroll over cap. This request will give us 10 complete set ups. This resource request supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

5

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

22

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Coulomb's Law Pendulum Apparatus

Resource Year

2024 - 2027

What resources do we already have?

Resource Requests

N/A our Coulomb's Law Pendulums are broken and beyond repair.

What resources do you need?

10 new Coulomb's Law Pendulums to replace our broken ones.

\$ Amount Requested

22,000

Resource Type

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

This is a request to replace broken equipment that is currently used in the Coulomb's Law lab in both PHY 2B and PHY 4B. Without a functioning apparatus, students are unable to experience this lab. Our current set ups are all over 15 years old and in varying states of disrepair and unable to gather measurements to the precision necessary to complete the lab. Our plan is to take salvageable parts from our current set ups to serve as spare parts for new set ups. We would need 10 fully functioning set ups to be able to run this lab in our 4B classes, as this is often the first non-observational lab completed by the students. This resource request supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

6

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

27

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

University Physics for the Physical and Life Sciences Volumes 1 and 2

Resource Year

2024 - 2027

What resources do we already have?

N/A

What resources do you need?

32 copies of University Physics for the Physical and Life Sciences Volumes 1 and 2, Philip R. Kesten; David L. Tauck, Macmillan Learning

\$ Amount Requested

17,000

Resource Type

ITEM: Instructional Supplies

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

Purchasing these books would allow us to run our 2-series courses as ZTC with an appropriate level textbook. While we currently use OpenStax "University Physics", that is really is better suited to the 4-series classes. This supports our program goal of being able to increase our ZTC course offerings.

Resource Requests

This request for my area is Priority #:

8

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

84

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **ZTC Classes:** Increase our offering of ZTC courses at all levels (general, 2-series, and 4-series) to help students earn their degrees without incurring additional financial burden. (✓)

Temperature Probes

Resource Year

2024 - 2027

What resources do we already have?

We have alcohol based glass bulb analog thermometers

What resources do you need?

2 Vernier Temperature Probe Teacher Packs

\$ Amount Requested

1,660

Resource Type

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

This resource request is for the development of a new design based thermodynamics lab. As of right now, we only have two operatable thermodynamics labs and neither is design based in nature. We would like to develop a new lab where in students will design experiments to determine what affects the pressure of a gas in an isolated system. This resource request supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

11

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

43

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

Resource Requests

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Gas Pressure Sensors

Resource Year

2024 - 2027

What resources do we already have?

N/A

What resources do you need?

10 Vernier Gas Pressure Sensors

\$ Amount Requested

1,200

Resource Type

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

This resource request is for the development of a new design based thermodynamics lab. As of right now, we only have two operatable thermodynamics labs and neither is design based in nature. We would like to develop a new lab where in students will design experiments to determine what affects the pressure of a gas in an isolated system. This resource request supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

12

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

47

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Human Eye Models

Resource Year

2024 - 2027

What resources do we already have?

N/A

What resources do you need?

10 Pasco Human Eye Models

\$ Amount Requested

2,500

Resource Type

Resource Requests

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

These models are for the development of 2B Lab that will specifically targeted to health science majors. These models allows students to see what happens to light inside the eye for a variety of visual defects and how different lenses (and combinations of lenses) correct visual defects. This resource request supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

13

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

51

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Picket Fences

Resource Year

2024 - 2027

What resources do we already have?

N/A

What resources do you need?

10 Vernier Picket Fences

\$ Amount Requested

120

Resource Type

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

These picket fences will be used in conjunction with our new photogates for the development of a new Free Fall lab for PHY 4A/PHY 2A. This resource request supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

14

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

55

4/3/2026

Generated by Nuventive Improvement Platform

Page 45

Resource Requests

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Time of Flight Pads

Resource Year

2024 - 2027

What resources do we already have?

Our Time of Flight pads are broken beyond repair.

What resources do you need?

10 Vernier Time of Flight Pads and Corresponding Connector Cables

\$ Amount Requested

1,100

Resource Type

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

This is a request to replace broken equipment that is currently used in the Projectile Motion Lab in PHY 2A/4A. Our current equipment is over 15 years old and no longer functions/is not compatible with modern day computers. Without functioning time of flight pads/cables, students are unable to complete the Projectile Motion lab, rendering the associated lab experience useless. This resource request supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

15

Is this request

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

58

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Tutors for Physics Classes

Resource Year

2024 - 2027

What resources do we already have?

1-2 Embedded Tutors each semester through the LRC

4/3/2026

Generated by Nuventive Improvement Platform

Page 46

Resource Requests

What resources do you need?

Additional 2 Embedded Tutors each semester in high needs courses

\$ Amount Requested

20,000

Resource Type

STAFF: Classified Professional, Confidential, Mgr

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

Embedded tutors help increase success rates for students and can help close equity gaps in courses where students may not feel comfortable asking for help from the faculty, but feel far less intimidated asking for help from a peer. In addition, the extra availability of targeted study sessions and tutoring from embedded tutors can help increase success and retention rates of all students. We would like to focus our embedded tutors in classes that traditionally have high DWF rates or courses that in the past have not been able to get embedded tutors (PHY 4A, PHY 4B, and PHY 2A). In addition, we would also like money to fund general physics tutors in the LRC as we tend to only have 1-2 each semester and their limited availability is not sufficient for current student needs. We need at least 5 physics tutors per semester who are available throughout the week.

This request for my area is Priority #:

16

Is this request

New

For Administrative Use Only

Funding Status

Notes

Council Ranking

2025-26 Council Ranking

Mapping

Data Review - Instructional: undefined

- **1.:** What overall trends do you see in success, retention, program of study, educational planning, and awards over the past 3 or more years? (✓)
- **2.:** Look at the disaggregated student subgroups in success, retention, program of study, educational planning, and awards for your area. Are there any equity gaps that you will address in the next 3 years?? (✓)
- **3.:** If there are any concerning trends over the past 3 or more years, or if equity gaps exist, what is your action plan to address them? (✓)

Educational Master Plan (2020-2025): undefined

- **2025 Objective 3.1 - KPI 8 (Student Services):** Reduce the equity gap for African American students by 40% (✓)
- **2025 Objective 3.2 - KPI 9 (Student Services):** Reduce the equity gap for Latinx students by 40% (✓)
- **2025 Objective 3.3 - KPI 10 (Student Services):** Reduce the equity gap for Men of Color by 40% (✓)
- **2025 Objective 3.4 - KPI 11 (Student Services):** Reduce the equity gap for LGBTQ+ students by 40% (✓)
- **2025 Objective 3.5 - KPI 12 (Student Services):** Reduce the equity gap for Foster Youth students by 40% (✓)
- **2030 Goal 3: Equity:** Close all student equity gaps. (✓)

Instructional: Physics: undefined

- **Equity Gap by Gender:** undefined (✓)
- **Equity Gaps By Race/Ethnicity:** undefined (✓)
- **Equity Gaps by Age Group:** undefined (✓)
- **Equity Gaps by Declared Major:** undefined (✓)

Resource Requests

- **ZTC Classes:** Increase our offering of ZTC courses at all levels (general, 2-series, and 4-series) to help students earn their degrees without incurring additional financial burden. (✓)

Student Equity Plan: *undefined*

- **Persistence for Black/African American Students:** Percentage of first-time college students who enrolled in the subsequent semester. (✓)
- **Successful Enrollment for Black/African American Students:** Percentage of first-time college students who applied and enrolled in the same year in a primary term. (✓)
- **Transfer for Hispanic/ Latinx Students:** Percentage of first time in college students who transferred to a four-year institution within three years. (✓)
- **Vision Goal Completion for Hispanic/ Latinx Students:** Percentage of first-time college students who completed a degree or certificate in three years. (✓)

E/M Apparati

Resource Year

2024 - 2027

What resources do we already have?

We have 5 E/M Apparati

What resources do you need?

We need 3 additional E/M Apparati to complete out classroom set and have enough for each lab group in a standard class.

\$ Amount Requested

18,000

Resource Type

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

We currently have five functioning ball launchers that are used in the projectile motion lab in PHY 4A/PHY2A. However, due to the size of our classes it is critical that we be able to run a full 8 set ups. This request will give us 8 complete set ups. This resource request supports one of our program goals around the updating of physics labs.

This request for my area is Priority #:

17

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

61

2025-26 Council Ranking

Mapping

Instructional: *Physics: undefined*

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Resource Requests

Rings and Disk Demo Kit

Resource Year

2024 - 2027

What resources do we already have?

N/A

What resources do you need?

1 Ring and Disk Demo Kit

\$ Amount Requested

25

Resource Type

ITEM: Equipment, Services, Software, Furniture

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

Allows us to do a demo showing how the rotational moment of inertia affects an objects ability to move translationally. Rotational motion is topic that students traditionally struggle with and can help us improve student understanding. This resource request will help support students understanding of forces and energy in rotational situations. In our PHY 4A and 2A assessments in Fall 2023, classes did not reach the necessary level of content mastery on this SLO.

This request for my area is Priority #:

19

Is this request

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Council Ranking

67

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Conceptual Physics Electronic Textbooks

Resource Year

2024 - 2027

What resources do we already have?

N/A

What resources do you need?

We need a subscription access code for Conceptual Physics by Hewitt (Pearson) per semester to be offered over the next 3 years.

\$ Amount Requested

9,000

Resource Type

ITEM: Instructional Supplies

Resource Requests

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

Purchasing this book would allow us to run our online PHY 10 courses as ZTC with an appropriate level textbook. This supports our program goal of being able to increase our ZTC course offerings.

This request for my area is Priority #:

21

Is this request

New

For Administrative Use Only

Funding Status

No longer needed

Notes

Council Ranking

87

2025-26 Council Ranking

Mapping

Instructional: Physics: undefined

- **ZTC Classes:** Increase our offering of ZTC courses at all levels (general, 2-series, and 4-series) to help students earn their degrees without incurring additional financial burden. (✓)

Conceptual Physical Science Electronic Textbooks

Resource Year

2024 - 2027

What resources do we already have?

NA

What resources do you need?

30 electronic access copies of Conceptual Physical Science by Hewitt (Pearson) per semester to be offered over the next 3 years.

\$ Amount Requested

9,000

Resource Type

ITEM: Instructional Supplies

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

Purchasing this book would allow us to run our online PHS 1 courses as ZTC with an appropriate level textbook. This supports our program goal of being able to increase our ZTC course offerings.

This request for my area is Priority #:

22

Is this request

New

For Administrative Use Only

Funding Status

No longer needed

Notes

Council Ranking

87

2025-26 Council Ranking

4/3/2026

Resource Requests

Mapping

Instructional: Physics: *undefined*

- **ZTC Classes:** Increase our offering of ZTC courses at all levels (general, 2-series, and 4-series) to help students earn their degrees without incurring additional financial burden. (✓)

Classroom Tables and Chairs

Resource Year

2024 - 2027

What resources do we already have?

Broken tables and chairs that are beyond repair according to facilities

What resources do you need?

New tables and chairs and/or desks in IT 101, IT 117, and ATEC 114

\$ Amount Requested

500,000

Resource Type

BUDGET: Facilities Building, Remodel

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

N/A Without desks, tables, and chairs, we cannot utilize these rooms for double lecture classes.

This request for my area is Priority #:

24

Is this request

New

For Administrative Use Only

Funding Status

Notes

Council Ranking

2025-26 Council Ranking

Mapping

Educational Master Plan (2020-2025): *undefined*

- **2025 Objective 7.5 (Academic Senate):** Add capacity to existing disciplines with a demonstrated need (✓)

Full Time Lab Technician

Resource Year

2024 - 2027

What resources do we already have?

Four full time lab techs and one part time lab technician

What resources do you need?

To change the position of the part time lab tech into a full time lab tech

\$ Amount Requested

120,000

Resource Type

Resource Requests

STAFF: Classified Professional, Confidential, Mgr

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

With the increase of course offerings in SciKin, including the addition of more evening, Friday, and Saturday labs, it is critical that we have adequate lab staff to help support students and instructors in the labs. This will allow us to increase our course offerings in order ensure we are offering enough sections to cover the need of students in any given semester.

This request for my area is Priority #:

25

Is this request

New

For Administrative Use Only

Funding Status

Notes

Council Ranking

2025-26 Council Ranking

Mapping

Educational Master Plan (2020-2025): undefined

- **2025 Objective 7.5 (Academic Senate):** Add capacity to existing disciplines with a demonstrated need (✓)

New AV Equipment in Lab Room (HUM 201)

Resource Year

2025 Update

What resources do we already have?

Old AV Equipment (according to Daniel Lambrose, circa 2016)

What resources do you need?

New AV equipment (interface, connection ports, document camera, and projectors).

\$ Amount Requested

42,000

Resource Type

ITEM: Technology

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

N/A this is purely for having the lab room be functional. Many modern computers/tablets do not have a VGA connector (which is the only connection port we have in the room). In addition, when the frequency of the projects get out of sync with modern computers, it causes the projectors to repeatedly flash. Dan Lambrose provided his opinion that the system was one of the oldest on campus and needed to be updated. He provided a quote of 42,000 for the cost of replacing the AV in the physics lab room.

This request for my area is Priority #:

1

Is this request

New

For Administrative Use Only

Funding Status

No Action-Insufficient funding

Notes

Resource Requests

Council Ranking

2025-26 Council Ranking

Mapping

Educational Master Plan (2020-2025): *undefined*

- **2025 Objective 6.5 (Office of the President):** Position the college's image and reputation as a leading academic institution in the region (✓)

Vernier Color and Light Sensors

Resource Year

2026 Update

What resources do we already have?

N/A nothing equivalent

What resources do you need?

10 Vernier Color and Light Sensors

\$ Amount Requested

1,000

Resource Type

ITEM: Instructional Supplies

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

We currently have the pieces for a polarization lab within the 4C curriculum except for the actual sensor for analytical data taking rather than just qualitative data. The expansion of optics labs comes as we prepare for the common course numbering of our PHY 4-series which will expand the amount of optics labs needed to meet the course objectives and slo's.

This request for my area is Priority #:

1

Is this request

New

For Administrative Use Only

Funding Status

Notes

Council Ranking

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **Prepare for Common Course Numbered 4-Series:** Prepare our labs and our curriculum for Common Course Numbered 4-Series (✓)
- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Resource Requests

Additional Copier for Faculty Use

Resource Year

2026 Update

What resources do we already have?

2 Copiers (IT and CRC)

What resources do you need?

Additional Copier in an accessible space, such as on the other side of the CRC by the computers.

\$ Amount Requested

3,000

Resource Type

ITEM: Technology

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

Goal 9.2 of the SPGM focuses on providing support for a positive work environment. Having access to last-minute printing would help achieve that goal, as inevitably, there is always a line of people waiting to use the existing CRC printer. And after 4pm, on Fridays, and on weekends, the IT printer is inaccessible to anyone who does not have badge access to the IT suite (which is most faculty). As we are all busy, sometimes there is not time to get prints to the CRC with 2-3 business days of notice as well. Therefore, providing this additional resource would alleviate the stress, especially on PT faculty who do their copies/prints often, the 1-2 days that they are present on campus.

This request for my area is Priority #:

Is this request

New

For Administrative Use Only

Funding Status

Notes

Council Ranking

2025-26 Council Ranking

Frank Hertz Apparatus

Resource Year

2026 Update

What resources do we already have?

N/A Nothing Equivalent

What resources do you need?

8 Frank Hertz Apparati

\$ Amount Requested

30,000

Resource Type

ITEM: Instructional Supplies

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

As we prepare for the common course numbering of our PHY 4-series which will now include modern physics, and therefore modern physics labs, we need to begin outfitting the lab with additional equipment needed to perform modern labs in order to meet the course objectives and SLO's.

This request for my area is Priority #:

Resource Requests

Is this request

New

For Administrative Use Only

Funding Status

Notes

Council Ranking

2025-26 Council Ranking

Mapping

Instructional: Physics: *undefined*

- **Prepare for Common Course Numbered 4-Series:** Prepare our labs and our curriculum for Common Course Numbered 4-Series (✓)
- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Photoelectric Effect Apparati

Resource Year

2026 Update

What resources do we already have?

NA - nothing equivalent

What resources do you need?

8 Photoelectric Effect Apparati

\$ Amount Requested

30,000

Resource Type

ITEM: Instructional Supplies

Please summarize how this request supports one or more EMP Goals, Equity goals, your program plans or goals, and/or is supported by outcomes assessment data.

As we prepare for the common course numbering of our PHY 4-series which will now include modern physics, and therefore modern physics labs, we need to begin outfitting the lab with additional equipment needed to perform modern labs in order to meet the course objectives and SLO's.

This request for my area is Priority #:

Is this request

New

For Administrative Use Only

Funding Status

Notes

Council Ranking

2025-26 Council Ranking

Mapping

Resource Requests

Instructional: Physics: undefined

- **Prepare for Common Course Numbered 4-Series:** Prepare our labs and our curriculum for Common Course Numbered 4-Series (✓)
- **Update Labs:** Update labs in physics courses to be more design based and/or skill based in nature to better prepare students for entering the STEM workforce. (✓)

Resource Request

What resources do we already have?

Potential Funding Source(s)

FPDC

What resources do you need?

Attendance for the joint American Association of Physics Teachers (AAPT) and Physics Education Research Conference (PERC)

Request related to EMP goal or Assessment?

\$ Amount Requested

1,635

Resource Type

FACULTY: Professional Development

The evidence to support this request can be found in:

This request for my area is Priority #:

Professional Development Activity Funding Request Application

Attendee and Activity Information

Has this professional development request been discussed and approved by your department chair?

Yes

Date of Request

03/08/2026

Activity Date(s)

07/19/26 - 07/23/26

Attendee Name

Lindsay Owens

Position

Full-time Faculty

Discipline

Physics

Name of Activity and Organization/Sponsor

American Association of Physics Teacher

Link to Activity Website

AAPT (American Association of Physics Teachers)
<https://www.aapt.org/Conferences/SM2026/index.cfm>
PERC (Physics Education Research Conference)
<https://www.per-central.org/conferences/2026/>

Location

In state

City, State

Pasadena, CA

4/3/2026

Faculty Professional Development Requests

Have you sought any other co-sponsorship (other internal and/or external funding)?

No

If yes, list source and total dollar amount.

Estimated Costs (\$)

Registration

800

What is included with Registration?

Nothing is included, just conference attendance.

Air Travel or Mileage (65.5 cents/mile)

360

Hotel (tax included)

0

Airport Parking

0

Ground Transportation

0

Meals (\$75/day maximum)

375

Hotel Parking

0

Incidentals

100

Total Costs

1,635

Justification for Funding Request

Select the categories of professional development that best support your request. (Check all that apply)

Improvement of teaching

Maintenance of current academic/technical knowledge & skills

Other activities determined to be related to educational and professional development

Briefly describe the objective of the activity and how it will benefit you and the work you do for the college. If this activity aligns with the objectives of any special programs, grants, or plans (e.g., Equity, AB 705, Guided Pathways, STEM, etc.) please explain.

Attending the 2026 American Association of Physics Teachers Conference (AAPT) in conjunction with the Physics Education Research Conference (PERC) will support my professional growth both as a physics professor and as a SciKin assistant co-chair by allowing me to engage with my community of physics education researchers, and learn about the current research on evidence-based strategies for improving instruction in intro physics classrooms, especially with the rise of AI (which is the topic of the PERC portion of the conference). In addition, there are entire parallel tracks devoted to Two Year College (TYC) programs, as well as teaching physics to life science majors. Being able to connect with other TYC faculty both in the state of California and beyond will provide an opportunity to exchange practical strategies for supporting our diverse student populations in their intro physics sequences. With the rise of health science focused degree programs at Norco College, and in southern California in general, being able to attend talks on teaching physics for life science majors always gives me ideas on how to incorporate more biology, chemistry, and health into our existing courses so that students are able to see the practicality of taking physics within the context of their health-science major. For example, over 10 years ago, I saw a vision correction physics lab using plastic human eye models. Last year, I was able to use program review funds to purchase plastic human eye models, so now our life-science physics courses can have a lab dedicated to vision correction in optometry.

As a SciKin assistant co-chair, the conference will also provide valuable insight into program-level practices such as curriculum design, assessment, and strategies for improving student retention and success in STEM pathways. Bringing these ideas back to Norco will allow me to support faculty development, especially for our part-time

Faculty Professional Development Requests

associate faculty, inform data-driven decision making, and strengthen our overall physics program as our school continues to grow.

How do you plan to share the information gained from the activity to your department/division? See “Dissemination Plan Ideas” document for ways to disseminate information and check all that apply.

Share at a department meeting
Provide adjunct training
Facilitate a conversation

Briefly explain your selection above.

I plan to share the knowledge and resources I gain with the full-time and part-time faculty in my department through informal discussions and the sharing of materials and strategies presented at the conference. For example, if I see any new products that would be good to incorporate into our lab, I would have a discussion with my fellow faculty on how they could be used to improve our lab curriculum. For something like specific examples for certain physics contexts (ex: teaching vision correction within the context of optics), those materials and examples can be shared directly with other FT and PT faculty. PT faculty in physics rely heavily on materials provided to them by me (as the co-chair). Being able to craft those materials in ways that reflect best practices in physics education research will allow those strategies to reach multiple sections of our courses and benefit a larger number of instructors and students.

If there is anything more broadly generalizable to education as a whole, as opposed to physics specifically, I can certainly share that information at a Teaching and Learning Committee meeting, for which I have been a voting member for the past four years.

Is there anything else you would like to add?

I have not attended the AAPT/PERC conference since summer 2022, and much has changed in the education landscape in the last four years. I believe it is important for me to take advantage of the conference being so close to Norco (in Pasadena) as it reduces the cost of attendance significantly since no airfare or hotel costs are needed.

The \$100 incidental charge is to cover parking at the Convention Center (\$20 a day for 5 days), since there was not a category listed for parking other than hotel parking.

Approve and Submit

Proof of approval is uploaded, ready to submit?

Yes

Please upload proof of approval for travel from your department chair or Dean.

[Owens Travel Approval_Courtney Doussett.pdf](#)

For Administrative Use Only

Funding Status

Notes

Resource Request

What resources do we already have?

2 FT faculty and 12 PT faculty

Potential Funding Source(s)

What resources do you need?

1 FT Faculty

Request related to EMP goal or Assessment?

EMP Goal 3

EMP Goal 9

\$ Amount Requested

212,178

Resource Type

FACULTY: New Full time Faculty (Associate faculty requested through Department Chair and Dean)

The evidence to support this request can be found in:

Data Review

This request for my area is Priority #:

1

Faculty Hiring Resource Request Form

Department Information

Department Chair Email:

lindsay.owens@norcocollege.edu

Faculty Requesting Email:

Lindsay Owens

Faculty Position Requested:

Full Time Faculty

This request is for:

Growth position in existing program

In what sections of your program review can the objectives and justifications for a new faculty hire be found?

Data Review

Statistical Data - Please email Research@norcocollege.edu to request assistance with completing questions requesting data, dashboards are under development.

Student Enrollment

Provide the total number of students enrolled in the discipline for each term in the last three years:

Enrollments:

Academic Year	Enrollments
2025- 2026	1052
2024 - 2025	715
2023 - 2024	637

Evidence from Power BI:

4/3/2026

Faculty Hiring Resource Requests

Summer 2025:

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
⊖ PHS-1	1	28	2.80	42	0	66.7%
PHS-1-35313	1	28	2.80	42	0	66.7%
⊖ PHY-10	1	39	3.90	42	5	92.9%
PHY-10-35315	1	39	3.90	42	5	92.9%
Total	2	67	6.70	84	5	79.8%

Fall 2025:

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
⊖ PHS-1	2	51	5.21	67	0	76.1%
PHS-1-37636	1	21	2.21	25	0	84.0%
PHS-1-37984	1	30	3.00	42	0	71.4%
⊖ PHY-10	2	65	6.50	77	1	84.4%
PHY-10-37637	1	43	4.30	42	1	102.4%
PHY-10-38195	1	22	2.20	35	0	62.9%
⊖ PHY-2A	2	53	11.18	60	19	88.3%
PHY-2A-37639	1	23	4.85	30	9	76.7%
PHY-2A-38196	1	30	6.33	30	10	100.0%
⊖ PHY-2B	1	31	6.54	30	0	103.3%
PHY-2B-37640	1	31	6.54	30	0	103.3%
⊖ PHY-4A	5	151	31.69	150	7	100.7%
PHY-4A-37641	1	36	7.59	30	2	120.0%
PHY-4A-37642	1	30	6.33	30	2	100.0%
PHY-4A-37643	1	31	6.38	30	2	103.3%
PHY-4A-37644	1	35	7.38	30	1	116.7%
PHY-4A-38307	1	19	4.01	30	0	63.3%
⊖ PHY-4B	3	73	15.39	90	4	81.1%
PHY-4B-37645	1	32	6.75	30	1	106.7%
PHY-4B-37646	1	13	2.74	30	0	43.3%
PHY-4B-37647	1	28	5.90	30	3	93.3%
⊖ PHY-4C	1	20	4.22	30	0	66.7%
PHY-4C-37648	1	20	4.22	30	0	66.7%
Total	16	444	80.73	504	31	88.1%

Winter 2026:

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
⊖ PHS-1	1	18	1.80	42	0	42.9%
PHS-1-30269	1	18	1.80	42	0	42.9%
⊖ PHY-10	1	31	3.10	42	0	73.8%
PHY-10-30052	1	31	3.10	42	0	73.8%
Total	2	49	4.90	84	0	58.3%

Spring 2026:

Faculty Hiring Resource Requests

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
PHS-1	2	64	6.40	67	3	95.5%
PHS-1-32207	1	23	2.30	25	0	92.0%
PHS-1-33232	1	41	4.10	42	3	97.6%
PHY-10	2	80	8.00	84	4	95.2%
PHY-10-32208	1	36	3.60	42	0	85.7%
PHY-10-32209	1	44	4.40	42	4	104.8%
PHY-2A	2	57	12.02	60	20	95.0%
PHY-2A-32210	1	30	6.33	30	14	100.0%
PHY-2A-32211	1	27	5.69	30	6	90.0%
PHY-2B	1	20	4.22	30	0	66.7%
PHY-2B-32212	1	20	4.22	30	0	66.7%
PHY-4A	4	125	26.37	120	10	104.2%
PHY-4A-32213	1	30	6.33	30	1	100.0%
PHY-4A-32214	1	33	6.96	30	2	110.0%
PHY-4A-32215	1	30	6.33	30	5	100.0%
PHY-4A-32216	1	32	6.75	30	2	106.7%
PHY-4B	3	101	21.29	90	10	112.2%
PHY-4B-32217	1	28	5.90	30	2	93.3%
PHY-4B-32218	1	28	5.90	30	1	93.3%
PHY-4B-32219	1	45	9.49	30	7	150.0%
PHY-4C	2	45	9.49	60	5	75.0%
PHY-4C-32220	1	30	6.33	30	5	100.0%
PHY-4C-33348	1	15	3.16	30	0	50.0%
Total	16	492	87.79	511	52	96.3%

Summer 2024:

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
PHY-10	1	25	2.50	30	3	83.3%
PHY-10-36800	1	25	2.50	30	3	83.3%
Total	1	25	2.50	30	3	83.3%

Fall 2024:

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
PHS-1	1	21	2.21	30	0	70.0%
PHS-1-39268	1	21	2.21	30	0	70.0%
PHY-10	1	30	3.00	30	4	100.0%
PHY-10-39095	1	30	3.00	30	4	100.0%
PHY-2A	1	23	4.85	30	3	76.7%
PHY-2A-39097	1	23	4.85	30	3	76.7%
PHY-2B	1	17	3.58	30	0	56.7%
PHY-2B-39098	1	17	3.58	30	0	56.7%
PHY-4A	4	119	25.09	120	7	99.2%
PHY-4A-39099	1	27	5.69	30	0	90.0%
PHY-4A-39100	1	32	6.75	30	2	106.7%
PHY-4A-39102	1	29	6.11	30	5	96.7%
PHY-4A-39103	1	31	6.54	30	0	103.3%
PHY-4B	3	74	15.60	90	7	82.2%
PHY-4B-39104	1	36	7.59	30	6	120.0%
PHY-4B-39105	1	9	1.90	30	0	30.0%
PHY-4B-39106	1	29	6.11	30	1	96.7%
PHY-4C	1	10	2.11	30	0	33.3%
PHY-4C-39107	1	10	2.11	30	0	33.3%
Total	12	294	56.44	360	21	81.7%

Faculty Hiring Resource Requests

Winter 2025:

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
PHY-10	1	25	2.50	30	5	83.3%
PHY-10-31734	1	25	2.50	30	5	83.3%
Total	1	25	2.50	30	5	83.3%

Spring 2025:

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
PHS-1	1	24	2.53	25	0	96.0%
PHS-1-34565	1	24	2.53	25	0	96.0%
PHY-10	2	52	5.20	60	8	86.7%
PHY-10-34148	1	28	2.80	30	2	93.3%
PHY-10-34564	1	24	2.40	30	6	80.0%
PHY-2A	3	63	13.28	90	20	70.0%
PHY-2A-32815	1	17	3.58	30	0	56.7%
PHY-2A-34149	1	25	5.27	30	10	83.3%
PHY-2A-34587	1	21	4.43	30	10	70.0%
PHY-2B	1	11	2.32	30	0	36.7%
PHY-2B-34150	1	11	2.32	30	0	36.7%
PHY-4A	4	103	21.72	120	4	85.8%
PHY-4A-34152	1	24	5.06	30	0	80.0%
PHY-4A-34153	1	28	5.90	30	1	93.3%
PHY-4A-34154	1	31	6.54	30	3	103.3%
PHY-4A-34453	1	20	4.22	30	0	66.7%
PHY-4B	3	85	17.93	90	3	94.4%
PHY-4B-34155	1	21	4.43	30	0	70.0%
PHY-4B-34156	1	33	6.96	30	1	110.0%
PHY-4B-34157	1	31	6.54	30	2	103.3%
PHY-4C	1	33	6.96	30	0	110.0%
PHY-4C-34158	1	33	6.96	30	0	110.0%
Total	15	371	69.94	445	35	83.4%

Summer 2023:

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
PHY-10	1	24	2.40	30	1	80.0%
PHY-10-36433	1	24	2.40	30	1	80.0%
Total	1	24	2.40	30	1	80.0%

Fall 2023:

Faculty Hiring Resource Requests

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
PHY-10	1	24	2.40	30	4	80.0%
PHY-10-37774	1	24	2.40	30	4	80.0%
PHY-2A	1	31	6.54	30	10	103.3%
PHY-2A-37776	1	31	6.54	30	10	103.3%
PHY-2B	1	10	2.11	30	0	33.3%
PHY-2B-37777	1	10	2.11	30	0	33.3%
PHY-4A	5	135	28.47	150	13	90.0%
PHY-4A-37778	1	35	7.38	30	2	116.7%
PHY-4A-37779	1	33	6.96	30	5	110.0%
PHY-4A-37780	1	33	6.96	30	4	110.0%
PHY-4A-38071	1	23	4.85	30	2	76.7%
PHY-4A-38080	1	11	2.32	30	0	36.7%
PHY-4B	3	55	11.59	90	0	61.1%
PHY-4B-37781	1	14	2.95	30	0	46.7%
PHY-4B-37782	1	12	2.53	30	0	40.0%
PHY-4B-37783	1	29	6.11	30	0	96.7%
PHY-4C	1	19	4.01	30	0	63.3%
PHY-4C-37784	1	19	4.01	30	0	63.3%
Total	12	274	55.12	360	27	76.1%

Winter 2024:

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
PHY-10	1	26	2.60	30	3	86.7%
PHY-10-31446	1	26	2.60	30	3	86.7%
Total	1	26	2.60	30	3	86.7%

Spring 2024:

Course	Primary Sections	Enrollments	Proj Enrl FTES	Capacity	Waitlisted	Fill Rate No ILA
PHY-10	1	30	3.00	60	1	50.0%
PHY-10-32835	0	30	3.00	30	1	100.0%
PHY-10-33222	1	0	0.00	30	0	0.0%
PHY-2A	1	26	5.48	30	7	86.7%
PHY-2A-32837	1	26	5.48	30	7	86.7%
PHY-2B	1	23	4.85	30	0	76.7%
PHY-2B-32838	1	23	4.85	30	0	76.7%
PHY-4A	4	126	26.40	120	19	105.0%
PHY-4A-32839	1	31	6.54	30	5	103.3%
PHY-4A-32840	1	35	7.38	30	7	116.7%
PHY-4A-32841	1	28	5.90	30	0	93.3%
PHY-4A-33212	1	32	6.58	30	7	106.7%
PHY-4B	3	75	15.81	90	2	83.3%
PHY-4B-32842	1	26	5.48	30	0	86.7%
PHY-4B-32843	1	15	3.16	30	0	50.0%
PHY-4B-32844	1	34	7.17	30	2	113.3%
PHY-4C	1	33	6.96	30	4	110.0%
PHY-4C-32845	1	33	6.96	30	4	110.0%
Total	11	313	62.50	360	33	86.9%

Provide the percent capacity/fill rate for each semester in the discipline for the last three years:

Semester	% Fill Rate
Summer 2023	80.0%
Fall 2023	76.1%

Faculty Hiring Resource Requests

Winter 2024	86.7%
Spring 2024	86.9%
Summer 2024	83.3%
Fall 2024	81.7%
Winter 2025	83.3%
Spring 2025	83.4%
Summer 2025	79.8%
Fall 2025	88.0%
Winter 2026	58.3%
Spring 2026	96.3%

Notes:

Winter 2026 - this was our first time offering the course, and due to an IDC error, the course was not able to show an instructor until two weeks before the term began. We believe this adversely affected enrollment.

Spring 2026 - Data pulled on 2/20/2026

Provide the average class size at Census for each semester for the last three years:

Semester	Avg. Class Size at Census
Summer 2023	24
Fall 2023	22.83
Winter 2024	25
Spring 2024	28.45
Summer 2024	25
Fall 2024	24.5
Winter 2025	25
Spring 2025	24.73
Summer 2025	33.5
Fall 2025	27.75
Winter 2026	24.5
Spring 2026	30.75

Notes:

Winter 2026 - this was our first time offering the course, and due to an IDC error, the course was not able to show an instructor until two weeks before the term began. We believe this adversely affected enrollment.

Spring 2026 - Data pulled on 2/20/2026

Evidence from Power BI:

Summer 2023:

Term	College	Subject	Course	Course Sec	Census Count
23SUM	NC	PHY	PHY-10	PHY-10-36433	24

Fall 2023:

Faculty Hiring Resource Requests

Term	College	Subject	Course	Course Sec	Census Count
23FAL	NC	PHY	PHY-4A	PHY-4A-37778	35
23FAL	NC	PHY	PHY-4A	PHY-4A-37779	33
23FAL	NC	PHY	PHY-4A	PHY-4A-37780	33
23FAL	NC	PHY	PHY-2A	PHY-2A-37776	31
23FAL	NC	PHY	PHY-4B	PHY-4B-37783	29
23FAL	NC	PHY	PHY-10	PHY-10-37774	24
23FAL	NC	PHY	PHY-4A	PHY-4A-38071	23
23FAL	NC	PHY	PHY-4C	PHY-4C-37784	19
23FAL	NC	PHY	PHY-4B	PHY-4B-37781	14
23FAL	NC	PHY	PHY-4B	PHY-4B-37782	12
23FAL	NC	PHY	PHY-4A	PHY-4A-38080	11
23FAL	NC	PHY	PHY-2B	PHY-2B-37777	10

Winter 2024:

Term	College	Subject	Course	Course Sec	Census Count
24SUM	NC	PHY	PHY-10	PHY-10-36800	25

Spring 2024:

Term	College	Subject	Course	Course Sec	Census Count
24SPR	NC	PHY	PHY-4A	PHY-4A-32840	35
24SPR	NC	PHY	PHY-4B	PHY-4B-32844	34
24SPR	NC	PHY	PHY-4C	PHY-4C-32845	33
24SPR	NC	PHY	PHY-4A	PHY-4A-33212	32
24SPR	NC	PHY	PHY-4A	PHY-4A-32839	31
24SPR	NC	PHY	PHY-10	PHY-10-32835	30
24SPR	NC	PHY	PHY-4A	PHY-4A-32841	28
24SPR	NC	PHY	PHY-2A	PHY-2A-32837	26
24SPR	NC	PHY	PHY-4B	PHY-4B-32842	26
24SPR	NC	PHY	PHY-2B	PHY-2B-32838	23
24SPR	NC	PHY	PHY-4B	PHY-4B-32843	15

Summer 2024:

Term	College	Subject	Course	Course Sec	Census Count
24SUM	NC	PHY	PHY-10	PHY-10-36800	25

Fall 2024:

Faculty Hiring Resource Requests

Term	College	Subject	Course	Course Sec	Census Count
24FAL	NC	PHY	PHY-4B	PHY-4B-39104	36
24FAL	NC	PHY	PHY-4A	PHY-4A-39100	32
24FAL	NC	PHY	PHY-4A	PHY-4A-39103	31
24FAL	NC	PHY	PHY-10	PHY-10-39095	30
24FAL	NC	PHY	PHY-4A	PHY-4A-39102	29
24FAL	NC	PHY	PHY-4B	PHY-4B-39106	29
24FAL	NC	PHY	PHY-4A	PHY-4A-39099	27
24FAL	NC	PHY	PHY-2A	PHY-2A-39097	23
24FAL	NC	PHS	PHS-1	PHS-1-39268	21
24FAL	NC	PHY	PHY-2B	PHY-2B-39098	17
24FAL	NC	PHY	PHY-4C	PHY-4C-39107	10
24FAL	NC	PHY	PHY-4B	PHY-4B-39105	9

Winter 2025:

Term	College	Subject	Course	Course Sec	Census Count
25WIN	NC	PHY	PHY-10	PHY-10-31734	25

Spring 2025:

Term	College	Subject	Course	Course Sec	Census Count
25SPR	NC	PHY	PHY-4B	PHY-4B-34156	33
25SPR	NC	PHY	PHY-4C	PHY-4C-34158	33
25SPR	NC	PHY	PHY-4A	PHY-4A-34154	31
25SPR	NC	PHY	PHY-4B	PHY-4B-34157	31
25SPR	NC	PHY	PHY-10	PHY-10-34148	28
25SPR	NC	PHY	PHY-4A	PHY-4A-34153	28
25SPR	NC	PHY	PHY-2A	PHY-2A-34149	25
25SPR	NC	PHS	PHS-1	PHS-1-34565	24
25SPR	NC	PHY	PHY-10	PHY-10-34564	24
25SPR	NC	PHY	PHY-4A	PHY-4A-34152	24
25SPR	NC	PHY	PHY-2A	PHY-2A-34587	21
25SPR	NC	PHY	PHY-4B	PHY-4B-34155	21
25SPR	NC	PHY	PHY-4A	PHY-4A-34453	20
25SPR	NC	PHY	PHY-2A	PHY-2A-32815	17
25SPR	NC	PHY	PHY-2B	PHY-2B-34150	11

Summer 2025:

Term	College	Subject	Course	Course Sec	Census Count
25SUM	NC	PHY	PHY-10	PHY-10-35315	39
25SUM	NC	PHS	PHS-1	PHS-1-35313	28

Fall 2025:

Faculty Hiring Resource Requests

Term	College	Subject	Course	Course Sec	Census Count
25FAL	NC	PHY	PHY-10	PHY-10-37637	43
25FAL	NC	PHY	PHY-4A	PHY-4A-37641	36
25FAL	NC	PHY	PHY-4A	PHY-4A-37644	35
25FAL	NC	PHY	PHY-4B	PHY-4B-37645	32
25FAL	NC	PHY	PHY-2B	PHY-2B-37640	31
25FAL	NC	PHY	PHY-4A	PHY-4A-37643	31
25FAL	NC	PHS	PHS-1	PHS-1-37984	30
25FAL	NC	PHY	PHY-2A	PHY-2A-38196	30
25FAL	NC	PHY	PHY-4A	PHY-4A-37642	30
25FAL	NC	PHY	PHY-4B	PHY-4B-37647	28
25FAL	NC	PHY	PHY-2A	PHY-2A-37639	23
25FAL	NC	PHY	PHY-10	PHY-10-38195	22
25FAL	NC	PHS	PHS-1	PHS-1-37636	21
25FAL	NC	PHY	PHY-4C	PHY-4C-37648	20
25FAL	NC	PHY	PHY-4A	PHY-4A-38307	19
25FAL	NC	PHY	PHY-4B	PHY-4B-37646	13

Winter 2026:

Term	College	Subject	Course	Course Sec	Census Count
26WIN	NC	PHY	PHY-10	PHY-10-30052	31
26WIN	NC	PHS	PHS-1	PHS-1-30269	18

Spring 2026:

Term	College	Subject	Course	Course Sec	Census Count
26SPR	NC	PHY	PHY-4B	PHY-4B-32219	45
26SPR	NC	PHY	PHY-10	PHY-10-32209	44
26SPR	NC	PHS	PHS-1	PHS-1-33232	41
26SPR	NC	PHY	PHY-10	PHY-10-32208	36
26SPR	NC	PHY	PHY-4A	PHY-4A-32214	33
26SPR	NC	PHY	PHY-4A	PHY-4A-32216	32
26SPR	NC	PHY	PHY-2A	PHY-2A-32210	30
26SPR	NC	PHY	PHY-4A	PHY-4A-32213	30
26SPR	NC	PHY	PHY-4A	PHY-4A-32215	30
26SPR	NC	PHY	PHY-4C	PHY-4C-32220	30
26SPR	NC	PHY	PHY-4B	PHY-4B-32217	28
26SPR	NC	PHY	PHY-4B	PHY-4B-32218	28
26SPR	NC	PHY	PHY-2A	PHY-2A-32211	27
26SPR	NC	PHS	PHS-1	PHS-1-32207	23
26SPR	NC	PHY	PHY-2B	PHY-2B-32212	20
26SPR	NC	PHY	PHY-4C	PHY-4C-33348	15

Provide the efficiency (WSCH/FTEF) for the last three years:

Semester	Efficiency (WSCH/FTEF)

Faculty Hiring Resource Requests

Summer 2023	384.15
Fall 2023	383.59
Winter 2024	416.16
Spring 2024	476.18
Summer 2024	400.15
Fall 2024	415.35
Winter 2025	400.15
Spring 2025	414.62
Summer 2025	536.20
Fall 2025	461.49
Winter 2026	392.15
Spring 2026	501.85

Notes:

Winter 2026 - this was our first time offering the course, and due to an IDC error, the course was not able to show an instructor until two weeks before the term began. We believe this adversely affected enrollment.

Spring 2026 - Data pulled on 2/20/2026

Evidence from Power BI:

Summer 2023:

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
☐ SchI Nat Sci, H & Kin - SciKin							
☐ PHY-10	1	1	24	2.40	0.20	12.00	384.15
Total	1	1	24	2.40	0.20	12.00	384.15
Total	1	1	24	2.40	0.20	12.00	384.15

Fall 2023:

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
☐ SchI Nat Sci, H & Kin - SciKin							
☐ PHY-10	1	1	24	2.40	0.20	12.00	384.15
☐ PHY-2A	1	1	31	6.54	0.40	16.45	523.40
☐ PHY-2B	1	1	10	2.11	0.40	5.30	168.86
☐ PHY-4A	5	5	135	28.47	2.00	14.33	455.69
☐ PHY-4B	3	3	55	11.59	1.20	9.73	309.18
☐ PHY-4C							
PHY-4C-37784	1	1	19	4.01	0.40	10.08	320.92
Total	1	1	19	4.01	0.40	10.08	320.92
Total	12	12	274	55.12	4.60	12.06	383.59
Total	12	12	274	55.12	4.60	12.06	383.59

Winter 2024:

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
☐ SchI Nat Sci, H & Kin - SciKin							
☐ PHY-10	1	1	26	2.60	0.20	13.00	416.16
Total	1	1	26	2.60	0.20	13.00	416.16
Total	1	1	26	2.60	0.20	13.00	416.16

Faculty Hiring Resource Requests

Spring 2024:

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
Schl Nat Sci, H & Kin - SciKin							
PHY-10	1	1	0	0.00	0.00		0.00
PHY-2A	1	1	26	5.48	0.40	13.80	438.57
PHY-2B	1	1	23	4.85	0.40	12.23	388.15
PHY-4A	4	4	126	26.40	1.60	16.36	528.20
PHY-4B	3	3	75	15.81	1.20	13.28	421.76
PHY-4C							
PHY-4C-32845	1	1	33	6.96	0.40	17.53	557.01
Total	1	1	33	6.96	0.40	17.53	557.01
Total	11	11	283	59.50	4.00	14.88	476.18

Summer 2024:

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
Schl Nat Sci, H & Kin - SciKin							
PHY-10	1	1	25	2.50	0.20	12.50	400.15
Total	1	1	25	2.50	0.20	12.50	400.15
Total	1	1	25	2.50	0.20	12.50	400.15

Fall 2024

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
Schl Nat Sci, H & Kin - SciKin							
PHS-1	1	1	21	2.21	0.20	11.15	353.73
PHY-10	1	1	30	3.00	0.20	15.00	480.18
PHY-2A	1	1	23	4.85	0.40	12.23	388.15
PHY-2B	1	1	17	3.58	0.40	9.03	286.51
PHY-4A	4	4	119	25.09	1.55	16.30	518.18
PHY-4B	3	3	74	15.60	1.20	13.10	416.16
PHY-4C							
PHY-4C-39107	1	1	10	2.11	0.40	5.30	168.86
Total	1	1	10	2.11	0.40	5.30	168.86
Total	12	12	294	56.44	4.35	13.07	415.35

Winter 2025:

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
Schl Nat Sci, H & Kin - SciKin							
PHY-10	1	1	25	2.50	0.20	12.50	400.15
Total	1	1	25	2.50	0.20	12.50	400.15
Total	1	1	25	2.50	0.20	12.50	400.15

Spring 2025:

Faculty Hiring Resource Requests

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
⊖ Schl Nat Sci, H & Kin - SciKin							
⊕ PHS-1	1	1	24	2.53	0.20	12.75	404.95
⊕ PHY-10	2	2	52	5.20	0.40	13.00	416.16
⊕ PHY-2A	3	3	63	13.28	1.20	11.15	354.27
⊕ PHY-2B	1	1	11	2.32	0.40	5.85	185.67
⊕ PHY-4A	4	4	103	21.72	1.60	13.66	434.57
⊕ PHY-4B	3	3	85	17.93	1.20	15.04	478.32
⊖ PHY-4C							
PHY-4C-34158	1	1	33	6.96	0.40	17.53	557.01
Total	1	1	33	6.96	0.40	17.53	557.01
Total	15	15	371	69.94	5.40	13.04	414.62
Total	15	15	371	69.94	5.40	13.04	414.62

Summer 2025:

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
⊖ Schl Nat Sci, H & Kin - SciKin							
⊕ PHS-1	1	1	28	2.80	0.20	14.00	448.17
⊕ PHY-10	1	1	39	3.90	0.20	19.50	624.24
Total	2	2	67	6.70	0.40	16.75	536.20
Total	2	2	67	6.70	0.40	16.75	536.20

Fall 2025:

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
⊖ Schl Nat Sci, H & Kin - SciKin							
⊕ PHS-1	2	2	51	5.21	0.40	13.03	416.96
⊕ PHY-10	2	2	65	6.50	0.40	16.25	520.20
⊕ PHY-2A	2	2	53	11.18	0.80	13.98	447.37
⊕ PHY-2B	1	1	31	6.54	0.40	16.35	523.40
⊕ PHY-4A	5	5	151	31.69	2.00	15.85	507.23
⊕ PHY-4B	3	3	73	15.39	1.20	12.83	410.56
⊖ PHY-4C							
PHY-4C-37648	1	1	20	4.22	0.40	10.55	337.73
Total	1	1	20	4.22	0.40	10.55	337.73
Total	16	16	444	80.73	5.60	14.42	461.49
Total	16	16	444	80.73	5.60	14.42	461.49

Winter 2026:

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
⊖ Schl Nat Sci, H & Kin - SciKin							
⊕ PHS-1	1	1	18	1.80	0.20	9.00	288.11
⊕ PHY-10	1	1	31	3.10	0.20	15.50	496.19
Total	2	2	49	4.90	0.40	12.25	392.15
Total	2	2	49	4.90	0.40	12.25	392.15

Spring 2026:

Faculty Hiring Resource Requests

Department	All Sec Counts	Primary Sections	Enrollments	Enrolled FTES	FTEF	FTES/FTEF	WSCH/FTEF
☐ Schl Nat Sci, H & Kin - SciKin							
☑ PHS-1	2	2	64	6.40	0.40	16.00	512.20
☑ PHY-10	2	2	80	8.00	0.40	20.00	640.24
☑ PHY-2A	2	2	57	12.02	0.80	15.03	480.98
☑ PHY-2B	1	1	20	4.22	0.40	10.55	337.73
☑ PHY-4A	4	4	125	26.37	1.60	16.48	527.60
☑ PHY-4B	3	3	101	21.29	1.20	17.74	567.95
☐ PHY-4C							
PHY-4C-32220	1	1	30	6.33	0.40	15.83	506.59
PHY-4C-33348	1	1	15	3.16	0.40	7.90	252.90
Total	2	2	45	9.49	0.80	11.86	379.74
Total	16	16	492	87.79	5.60	15.68	501.85
Total	16	16	492	87.79	5.60	15.68	501.85

Instructional Data

Total number of sections offered in the discipline for the primary semesters in the previous year:
36 (Summer 2025 - Spring 2026)

Are any of the sections cross-listed?

No

If so, how many?

0

Total number of units offered in the discipline for the primary semesters in the previous year:
132 units total (12 sections at 3 units and 24 sections at 4 units)

Proportion of full-time vs adjunct instruction

Full-time instructors by headcount currently in the discipline:

2

Full-time instructors by FTEF:

2 (As of Spring 2026)

Associate faculty instructors by headcount currently in the discipline:

12

Associate faculty instructors by FTEF:

3.2 (As of Spring 2026)

Total FTEF reassign NOT reoccurring each year (do not include dept. chair):

0

How many additional full-time faculty can this discipline support towards reaching a 75/25 full-time to adjunct ratio?

1.0 (however, due to the units of physics courses, a 1.0 load is actually 10 units, not 15). Adjusting the values, 60 total units - 20 for Full Time Faculty (on a 1.0 load) = 40 units $40/10 = 4.0$

Educational Program - Responses should provide detailed information specifically addressing what is asked. This section will be scored as a whole, so please avoid redundancy, there will be no advantage to restating the same information in multiple answers. Please do not include data that is already included in the above sections. Also, the information you provide should reflect justifications in program review sections. (50 Points)

Describe how this discipline/program/unit contributes to the Educational Master Plan with regard to the Goals and Objectives. If relevant to this application, provide data for certificates, degrees, employment opportunities, etc...

Goal 1: Expand college access by doubling current headcount and full-time equivalent students (FTES).

A full-time physics faculty member would directly support enrollment growth by increasing our capacity to offer additional sections of physics courses. In addition, hiring a faculty member with an astronomy or astrophysics background would allow the college to introduce introductory astronomy courses (AST 1A and 1B), which are

Faculty Hiring Resource Requests

traditionally high-enrollment courses over at RCC and MVC. These types of general education classes attract both STEM (for interest) and non-STEM majors (to satisfy their IGETC or CALGETC requirements). Being able to offer two new courses as well as increased offerings of our current courses will contribute to FTES growth in both physics and the college.

Goal 3: Close all student equity gaps.

A full-time faculty member increases the department's ability to provide consistent, structured academic support outside of class through office hours, mentoring of students and PT faculty, and targeted interventions. In a challenging subject like physics, these supports are critical for disproportionately impacted students. A full-time presence also helps ensure more consistent course design, expectations, and alignment across sections, reducing variability in student experience that can contribute to equity gaps.

Goal 7: Become the regional college of choice by offering a comprehensive range of programs that prepare students for the future and meet employer workforce needs.

Hiring a full-time faculty member with expertise in astronomy or astrophysics would allow the college to expand its science offerings to include astronomy courses, an area currently not represented in the curriculum. Expanding into this area strengthens the college's academic portfolio, making it more competitive regionally and more attractive to prospective students seeking a well-rounded science program.

Indicate what this new hire will contribute to your department or discipline that currently cannot be accomplished by the existing faculty.

At the moment, neither of the full-time faculty has an astronomy or astrophysics background. Despite multiple years worth of attempts to get an FSA for astronomy, continued HR delays hinder our ability to offer the astronomy courses (AST 1A and AST 1B) at Norco College, something both RCC and MVC can currently offer their students. AST courses can be taught online or face-to-face, which allows us to offer flexible options to complete their general education requirements. In addition, adding astronomy to our catalogue will help us become a more comprehensive college in the area and being able to offer an online version of astronomy will increase our FTES as students from anywhere in California can take advantage of our course offerings to satisfy their IGETC or CALGETC requirements.

Explain the impact this hire will have on other disciplines, programs, and the college.

At the moment, we are limited in the number of sections we can offer of particularly challenging courses, such as PHY 2A and PHY 2B. These courses are for life-science majors. These students are often completing courses in biology (BIO 60, 61), and chemistry (CHE 12A, and CHE 12B) at the same time as physics. As such, we try to schedule classes such that these major courses do not overlap, however, it is extremely difficult. For example in Fall 2025, PHY 2B (single section) overlapped with CHE 12B (single section) and as a result, the enrollments were affected in both courses as students had to choose between taking physics or taking chemistry that semester.

In addition, PHY 2A and PHY 2B are classes that are not preferred by part time faculty due to the pace of the material (often covering 17+ chapters in only 15 weeks) and the focus on life science applications rather than the physics/engineering applications that they are often more familiar with. For all PT physics faculty with preference, only 4-series courses are requested, never 2-series. Having another FT faculty member who can help teach 2-series courses will allow us to offer more than one section each semester of PHY 2A and PHY 2B. Offering multiple sections provides students with greater scheduling flexibility, allowing them to select class times that better align with their other course requirements and non-academic responsibilities and will decrease the likelihood of course enrollments being affected by students having to choose between two single section courses. In regard to the 4-series, we face similar challenges in our single section of PHY 4C each semester, which must avoid MAT 2, MAT 3, ENE 35 (all of which are also usually single-section courses). PHY 4C is another challenging course, often not taught by PT faculty because of the level of material and the specialization of the topics covered in the course. Being able to offer more than one section of PHY 4C would allow us to again provide much needed flexibility to our pre-engineering and physics students.

Explain the impact if this faculty position is NOT hired.

If a FT hire is not granted, physics may not be able to offer enough sections to meet student demand. This can delay students' progress in sequences (especially in our single-section physics courses such as PHY 2B and 4C), which impacts time to degree, transfer timelines, and equity in access. Students who rely more heavily on instructor

Faculty Hiring Resource Requests

access (first-generation, underprepared, or balancing work, home, and other responsibilities with their coursework) are disproportionately impacted when support structures are limited. A lack of FT faculty can widen these gaps as FT faculty are available for office hours each week and can work in cooperation with student services on campus (such as the Disability Resource Center or MESA) in order to get students the supports that they need to be successful in our classes.

I will address the limitations of PT in more depth below, but with high PT turnover, course alignment (content coverage, rigor, assessment practices) becomes harder to maintain. Without enough FT faculty to provide continuity and coordination, students may have very different experiences depending on the section they enroll in. Without another FT faculty member, the two existing FT faculty will continue absorbing responsibilities beyond their assigned load, such as supporting students from other sections within office hours, being the predominant offerers of ZTC courses, mentoring PT faculty, and developing coordinated material used across multiple sections (such as lab manuals).

Please describe any other factors not already addressed that reinforce the need for a full-time faculty hire. Due to our single lab room, with 32 seats, the idea of simply increasing enrollments in our courses is not an option. This is both from the logistical standpoint (there are only 8 lab set ups) to safety considerations (some of our 4B labs involve live high current circuits on the table, have too many students in the room is a genuine hazard as they need to be watched carefully). In order to accommodate growing enrollments, our only option is to add more sections. And that can either come in the form of even more PT faculty, or another FT faculty hire.

In thinking of the students, particularly in terms of support, I want to address some of the structural limitations that specifically affect PT faculty. For example, PT faculty are not required to have office hours, and with a challenging subject like physics, being able to get help from the instructor is critical. At the moment, both full-time faculty, myself and Dan, often support students from other sections of physics courses in our office hours in order to meet this need. Also, many PT faculty rely on paid homework platform systems (i.e., Mastering Physics) for homework, quizzes, or even exams. While these systems can be effective and certainly are efficient, both FT faculty prioritized using Openstax ZTC textbooks, which require more individualized grading and feedback (by hand). Our ability to offer even more ZTC physics courses would be founded on the addition of another FT faculty. Finally, many of our PT faculty teach at multiple colleges, which greatly limits the time they are able to dedicate outside of scheduled class and lab hours to helping students. A FT physics hire would teach only at Norco, and be able to provide more consistent availability, contribute to program development, such as in astronomy, and would be able to invest their time and experience into help Norco students succeed in and out of the classroom.

Please add any relevant documents here.

Instructional Summary - Complete this section for Instructional Faculty only

1. How many additional full-time faculty can this discipline support towards reaching a 75/25 full time to adjunct ratio?

1.0 (however, due to the units of physics courses, a 1.0 load is actually 10 units, not 15). Adjusting the values, 60 total units - 20 for Full Time Faculty (on a 1.0 load) = 40 units $40/10 = 4.0$

2. How many approved hires within this discipline are currently unfilled?

0

3. How many growth positions in this discipline are being requested and prioritized before this position?

0

4. Complete the calculation = (1-2-3) =

1

5. How many full-time faculty were employed in the discipline in the most recent Fall term?

2

6. Department Relative need total:

0.5 (if using 15 credit calculation), 2 (if using 10 credit calculation)

Faculty Hiring Resource Requests

Counseling Summary - Complete this section for Counseling Faculty only

1. The number of students for the most recent Fall term relevant to your program.
2. How many full-time faculty are in your discipline, including retiring faculty?
3. How many growth positions in this discipline are being requested and prioritized before this position?
4. Calculation: $(2) + (3) =$
5. Please provide a state-mandated or institutional set student per faculty target ratio.
6. Complete the calculation using the above questions $[(1)-(5) \times (4)] / (5) =$
7. Relevant Need: $(6/4) =$

Library Summary- Complete this section for Library Faculty only

1. The number of FTES for the most recent Fall term.
2. How many full-time faculty are in your discipline, including retiring faculty?
3. How many growth positions in this discipline are being requested and prioritized before this position?
4. Calculation: $(2) + (3) =$
5. The state-mandated or institutional set FTE per faculty ratio.
6. Complete the calculation using the above questions $[(1)-(5) \times (4)] / (5) =$
7. Relevant Need: $(6/4) =$

Submit

Ready to Submit?

Yes

For Administrative Use Only

Funding Status

APC Ranking

Notes

Program Review Reflections

What would make program review meaningful and relevant for your unit?

N/A

I appreciate all the guidance that the program review committee has provided with the templates, the trainings, the drop in hours etc.

What questions do we need to ask to understand your program plans, goals, needs?

This is something that is probably most applicable to the sciences, but a fair number of our program review requests are to replace equipment that is outdated or broken. Replacement of this equipment is necessary for the continuation of the lab courses as part of the program. In the Resource Request section, it would be helpful if there was a drop-down option for “replacement of existing resource” in addition to the “new” or “existing” categories. While there are resource requests for new equipment, which are tied to one of our program goals, the replacement equipment is essential for certain classes, such as those with lab components, to keep running in accordance with the COR and CID requirements. In the program review requests, it would be helpful if we could upload supporting documentation as a means to help justify the importance of the request. This could include price quotes for equipment, schedules showing enrollment (to justify the need of a resource), and in our particular case, a copy of the tutoring schedule from Fall 2023 and Spring 2024 showing that there are only 2 physics tutors with extremely limited availability and only 1 physics embedded tutor in a single course.

What types of data do you need to support your program plans, goals, needs?

In the dashboards for the SLO Mastery - if the n-values could be provided for all dashboards, especially for the breakdown by declared major, it would help in determining if there is any arbitrary inflation/deflation of the data due purely to small n-values.

One resource that I wanted to include in the program review was a new faculty member request. However, I was unable to include it in this resource request because I lacked access to the necessary data needed to justify a new hire. It would be helpful if we could have access to all the data associated with our respective disciplines through Power BI.

Having access to all the data for our discipline might also better help in the creation of discipline goals as well as future schedule creation based on previous enrollment.

If there are any supporting documents you would like to attach, please attach them here.

Submission

All parts of my Program Review have been completed and it is ready for review.

Yes

Program Review Reflections

What would make program review meaningful and relevant for your unit?

Something that we have discussed within Program Review meetings that would improve this process is a section to provide a yearly update on what has been done in pursuit of achieving programmatic goals. That way, data can be used to show progress on achieving the goals, which may also justify additional resource requests.

What questions do we need to ask to understand your program plans, goals, needs?

This is something that is probably most applicable to the sciences, but a fair number of our program review requests are to replace equipment that is outdated or broken. Replacement of this equipment is necessary for the continuation of the lab courses as part of the program. In the Resource Request section, it would be helpful if there was a drop-down option for “replacement of existing resource” in addition to the “new” or “existing” categories. While there are resource requests for new equipment, which are tied to one of our program goals, the replacement

Reflections and Submission

equipment is essential for certain classes, such as those with lab components, to keep running in accordance with the COR and CID requirements.

In the program review requests, it would be helpful if we could upload supporting documentation as a means to help justify the importance of the request. This could include price quotes for equipment, schedules showing enrollment (to justify the need of a resource), and in our particular case, a copy of the tutoring schedule from Fall 2023 and Spring 2024 showing that there are only 2 physics tutors with extremely limited availability and only 1 physics embedded tutor in a single course.

What types of data do you need to support your program plans, goals, needs?

In the dashboards for the SLO Mastery - if the n-values could be provided for all dashboards, especially for the breakdown by declared major, it would help in determining if there is any arbitrary inflation/deflation of the data due purely to small n-values.

One resource that I wanted to include in the program review was a new faculty member request. However, I was unable to include it in this resource request because I lacked access to the necessary data needed to justify a new hire. It would be helpful if we could have access to all the data associated with our respective disciplines through Power BI.

Having access to all the data for our discipline might also better help in the creation of discipline goals as well as future schedule creation based on previous enrollment.

If there are any supporting documents you would like to attach, please attach them here.

Submission

All parts of my Program Review have been completed and it is ready for review.

Yes

2026 Update

Program Review Reflections

What would make program review meaningful and relevant for your unit?

The current process is already comprehensive enough for us to reflect on our assessment data, our goals, and our actions over the previous year. I think going forward, now that I am not a solo-discipline faculty (as of this year) having a meeting in late Fall semester to go over each of the parts of the program review as a unit would be helpful as we continue to grow in our enrollments and other changes (such as common course numbering) are coming down the line.

Within resource requests, it would be nice if we could update ourselves if something was funded, no longer needed, etc. At the moment, there are over a dozen items in our resource requests that say not funded, but we did receive them over the summer and fall semester. I think it would be helpful if we could keep that list updated each year so that we are truly only asking for items that are still needed. Else, have the lists be specific to each year and not roll over across multiple years.

What questions do we need to ask to understand your program plans, goals, needs?

One thing that is unique to STEM, or really lab courses is that under resource requests, I think there needs to be general category for ongoing lab equipment purchases. While lottery money can be used for consumable things like chemicals or batteries, as our equipment breaks, we need to be able to fix or replace it quickly. This is not "new" equipment we are requesting to replace an entire classroom set, but maybe just one set up of a classroom set. Having completed classroom sets, especially of lab equipment is necessary to keep our lab courses running. On that note, having to wait almost a year for new lab equipment to replace broken equipment causes an equity issue for our students, as now we are still running 30+ person labs, but with only 7 pieces of equipment instead of 8, decreasing student access to the hands-on learning experience that the lab provides.

Something that I included in my request for a new full-time faculty member was monitoring enrollments, sections, FTES, and FTEF for both PT and FT faculty. I was keeping track of this data on the back end, but I think it is useful to monitor how these numbers change with time in order to give a heads up to disciplines that they may have need of another faculty member. I think this would help the administration by providing a quick snapshot of the programs.

Reflections and Submission

What types of data do you need to support your program plans, goals, needs?

One of the questions asked about how many times CPL was granted in our program. Since all of our CPL offerings are done by standardized exam (AP exams) Admissions and Records would likely have the data on how many times CPL was offered in the past year. Being able to have access to that data would allow for better reporting in the CPL section.

If there are any supporting documents you would like to attach, please attach them here.

Submission

All parts of my Program Review have been completed and it is ready for review.

Yes