DEPARTMENT OR PROGRAM: Physics

DIVISION: Math/Science

I. DESCRIPTION OF PROGRAM

The Physics department at CSM offers 4 sequences for students. Which sequence students take depends on their major and the institution they plan to transfer to.

Physics 100 is a one-sequence course which satisfies the GE requirement of a Physical Science for transfer or AA/AS degree. A course outline was completed for a companion one-unit laboratory course, Physics 101, in the 2006/07 academic year. This course was only offered in the 2007/08 academic year, with one section offered in Fall 2007 and one section offered in Spring 2008. The department was not allowed to teach this course again due to budget considerations and the need to cut course sections across the division and the college.

The Physics 210-220 sequence is designed for students majoring in some field of letters and science. It is required for students planning to enter Medicine, Dentistry, Pharmacy, Optometry, Agriculture, or Forestry. The Phys 210-220 sequence is required of most biological sciences majors transferring to CSU campuses. Phys 210 is required by many architecture programs and physical therapy programs.

The Physics 210-211-220-221 sequence is required by some transfer institutions for students majoring in some fields of letters and science. The one-unit courses Phys 211 and Phys 221 were added as supplements to Phys 210 and 220 to satisfy transfer programs that require a one-year calculus-based physics sequence. This sequence is required by many UCs for students majoring in biological sciences.

Physics 250-260-270 constitute a three-semester program designed to give students majoring in Engineering, Physics, Chemistry, or other physical sciences a thorough foundation in the fundamentals of physics. Physics 250 is required at some transfer schools for students majoring in architecture.

The department also offers a preparation course, Physics 150, which is designed to get underprepared students ready for the Physics 210-220 or 250-260-270 sequences.

In addition, a three-course sequence, Phys 126-127-128 (cross-listed as BIOL 126-127-128) was added for students interested in careers in science education. These one-unit courses were developed in Fall of 2008 as part of the Aurora project, which in turn is part of the CalTeach project. Phys 126 was offered as experimental course in Fall 2008 and Phys 127 was added in Spring 2009. The courses became permanent CSM courses beginning in Fall 09. Each class is limited to a maximum of six students, due to funding for the stipends that students receive. Currently, one physics faculty member and one biology faculty member each get one unit of load for all three courses. It is the opinion of the majority of the physics department that these courses be redesignated and listed as Physical Science 126, 127, and 128 as their scope is not limited to students interested in teaching physics, but include also students interested in teaching science in the other physical sciences: chemistry, geology, astronomy, etc. These courses should not be included in the LOAD calculations for the physics department due to the special nature and history of the courses."

II. STUDENT LEARNING OUTCOMES (SLOs)

a. Briefly describe the department's assessment of SLOs. Which courses or programs were assessed? How were they assessed? What are the findings of the assessments?

All course SLOs have been assessed with the exception of Physics 101 which has not been offered since spring 2008. Physics 126, 127, and 128 were assessed with their cross-listed biology counterparts Biology 126, 127, and 128.

For a listing of assessment methods used, results, and determined action steps for physics courses taught in the 2009-2010 academic year, please see the attached report from tracdat.

b. Briefly evaluate the department's assessment of SLOs. If applicable, based on past SLO assessments, 1) what changes will the department consider or implement in future assessment cycles; and 2) what, if any, resources will the department or program require to implement these changes? (Please itemize these resources in section VII of this document.)

The department has done well implementing semesterly assessment of SLOs. Although, assessing each SLO each semester is not necessary, the physics department has started with this assessment cycle due to the small sample size of students each semester.

Most SLOs for physics courses are evaluated using a question on the final. One thing that the department has discovered is that we must carefully construct final questions for assessing SLOs. Questions on finals often have more than one way to validly solve. For example, many problems can be solved using either conservation of energy or Newton's Second Law. If we are trying to evaluate whether students can ***identify problems that should be solved using conservation of energy and correctly solve them***, we need to make sure that the question we use for assessment can only be solved using conservation of energy. For each SLO that is evaluated using a question on the final, the department will decide as a whole on a set of final questions from which a question can be selected. It is not expected that this will require any additional resources.

c. Below please update the program's SLO Alignment Grid below. The column headings identify the General Education (GE) SLOs. In the row headings (down the left-most column), input the course numbers (e.g. ENGL 100); add or remove rows as necessary. Then mark the corresponding boxes for each GE-SLO with which each course aligns.

If this *Program Review and Planning* report refers to a vocational program or a certificate program that aligns with alternative institutional-level SLOs, please replace the GE-SLOs with the appropriate corresponding SLOs.

Nearly every SLO in Physics involves critical thinking. Students must understand the range of validity of the laws of physics in order to know when they are applicable.

Physics 101 has been omitted from the list since its SLOs have never been assessed. The assessment of the SLOs for Physics 101 were scheduled in for Fall 2008 and Spring 2009, but the course was cut from the schedule both semesters and has not been taught

since. Physics 126, 127, and 128 are cross-listed with Biology 126, 127, and 128 and their assessment is recorded with those courses.

GE-SLOs→ Program Courses ↓	Effective Communication	Quantitative Skills	Critical Thinking	Social Awareness and Diversity	Ethical Responsibility
Physics 100	X	X	X		
Physics 150	X	X	X		
Physics 210	X	X	X		
Physics 211	X	X	X		
Physics 220	X	X	X		
Physics 221	X	X	X		
Physics 250	X	X	X		
Physics 260	X	X	X		
Physics 270	X	X	X		

III. DATA EVALUATION

See attached data from PRIE as well as the tables with individual course WSCH, FTEF and LOAD calculated from FLC and Census Enrollment.

a. Referring to the Enrollment and WSCH data, evaluate the current data and projections. If applicable, what programmatic, course offering or scheduling changes do trends in these areas suggest? Will any major changes being implemented in the program (e.g. changes in prerequisites, hours by arrangement, lab components) require significant adjustments to the Enrollment and WSCH projections?

There are some interesting changes to WSCH that have occurred in the past 3 years. In Spring of 2009, the college began maximizing WSCH by counting an average of 1.2 contact hours per student per week for "a minimum of 16 hours-by-arrangement per term" (Phys 100, 150, 210, and 220). For courses with "a minimum of 32 hours-by-arrangement per term" (Phys 250, 260, and 270), an average of 2.5 contact hours per student per week has been used to maximize WSCH.

WSCH was also elevated in the Fall 2009 semester for classes with Thursday labs due to the scheduled Flex Days. With only 15 Thursdays in the semester and fewer than 48 lecture days, an extra 15 minutes was added to each Thursday lab to meet the lab hour requirements for science courses with Thursday labs. Thus, creating havoc with student schedules, but generating an extra 0.3 contact hours per student per week.

WSCH is also reported in error for Spring 2007, 2008, 2009, and 2010 where Physics 260 and 270 were not allocated their 2 hours-by-arrangement as they were, correctly, for Fall semesters. This error was corrected for the Spring 2011 semester.

Being mindful of these facts, we can look at the WSCH trends. WSCH was around 1200 beginning in Fall 2006 and continuing through Fall 2008. WSCH went up over 1400 in Spring 2009 if calculated with the correct "minimum of 32 hours-by-arrangement" per term for Physics 260 and 270. Even without the change the college made to maximize WSCH, the WSCH would have been over 1350. WSCH then grew to about 1450 in Fall

2009, 1540 in Spring 2010 and 1580 in Fall 2010. In the current semester, Spring 2011, WSCH has fallen to 1275. This one semester drop is not enough to indicate a trend and is still higher than the Fall 2008 WSCH.

Enrollment changes mostly parallel the WSCH changes. From Fall 2006 to Fall 2008, enrollments were between 174 and 207. In Spring 2009, enrollments were 210. Although this was not a large change, WSCH went up because enrollment shifted from Physics 100 (which has no lab) to physics classes with labs and hence, more contact hours. Enrollments continued to increase to 223 in Fall 2009, 231 in Spring 2010, and 242 in Fall 2010. Enrollments have dropped to 209 for the current semester, Spring 2011. But, like with WSCH this one semester does not indicate a trend and is still above the Fall 2008 level.

b. Referring to the Classroom Teaching FTEF data, evaluate the current data and projections. If applicable, how does the full-time and part-time FTE affect program action steps and outcomes? What programmatic changes do trends in this area suggest?

Semester	Classroom FTEF	Part-Time Classroom FTEF
Fall 2006	3.08	0
Spring 2007	3.35	0.2
Fall 2007	3.67	0.92
Spring 2008	3.51	1.01
Fall 2008	2.72	0.23
Spring 2009	3.21	0.72
Fall 2009	2.95	0
Spring 2010	3.21	0
Fall 2010	2.95	0
Spring 2011	3.21	0.52

FTEF has been steady the past 5 semesters. Part-Time FTEF has gone up for the current semester, Spring 2011, and is expected to continue at 0.3 to 0.5 for the next two years as Professor Locke serves as the SLO Coordinator for CSM. With good communication between part-time and full-time instructors, this is not expected to affect action steps or outcomes.

From the 2007-2008 academic year to the 2008-2009 academic year, FTEF was greatly reduced. From Fall 2007 to Fall 2008, Physics 101, one section of Physics 150 and one section of Physics 250 were removed from the schedule. From Spring 2008 to Spring 2009, Physics 101 was removed from the schedule and the two sections of Physics 250 went from independent single sections to one double section.

Since then, Fall offerings have varied. From Fall 2008 to Fall 2009, Physics 220 was removed, but a section of Physics 210 was added. From Fall 2009 to Fall 2010, one section of Physics 210 was removed and one section of Physics 150 was added. Both of these led to increases of over 100 in WSCH.

c. Referring to the Productivity [LOAD] data, discuss and evaluate the program's productivity relative to its target number. If applicable, what programmatic changes or other measures will the department consider or implement in order to reach its productivity target? If the productivity target needs to be adjusted, please provide a rationale.

Physics 126, 127, 128 and the 680 course that preceded them have been reported as having LOADs of 0 with the exception of Physics 126 this semester which has a LOAD of 16. To have reasonable LOAD values for making predictions and/or describing trends, LOAD has been recalculated (see attached) by Professor Locke without counting these courses. LOAD was recalculated as WSCH divided by Classroom FTEF for each course and for the total semester. To view trends LOADs were calculated using both the unmaximized hours-by-arrangement used through the Fall 2008 semester and the hours-by-arrangement WSCH used beginning in 2009. For comparison, the values provided by PRIE are reported in the far right column, with the exception of the current semester which all parties have determined had erroneous information.

Semester	**LOAD calculated without including FTEF assigned to the Integrated Science Center or WSCH and FTEF from Physics 126, 127, and 128**		**LOAD values supplied by PRIE which include FTEF assigned to the ISC and WSCH and FTEF for PHYS 126, 127, and 128**
	Pre 2009 Method for calculating WSCH captured by HBA	**Post 2008 Method for calculating WSCH captured by HBA**	
Fall 2006	381	398	379
Spring 2007	358	374	348
Fall 2007	340	351	338
Spring 2008	341	356	333
Fall 2008	432	450	422
Spring 2009	431	450	421
Fall 2009	481	502	465
Spring 2010	469	489	429
Fall 2010	526	549	486
Spring 2011	389	405	Known to be in Error

As the table shows, LOAD was low and dropping from Fall 2006 through Spring 2008. With strategic class offering reductions in the 2008-2009 academic year, LOAD increased by about 100 from the previous academic year's LOAD. This trend continued with an increase in LOAD of 40-50 for the 2009-2010 academic year. For Fall 2010 there was again an increase in LOAD of about 50. However, for the current semester, Spring 2011, LOAD dropped by nearly 100 from SPRING 2010. This one semester drop is not enough to indicate a trend, but is of concern for the department. The department has discussed several scheduling changes to keep LOAD above 450.

To consider programmatic changes, the department has looked at LOAD for individual courses. For the current academic year, LOAD in Physics 260 was 213 each semester, down from 472 in Fall 2009 and 590 in Spring 2010. Although this one year decrease is not enough to indicate a trend, the physics department has moved the lab for this course in the Fall 2011 semester from Tuesday to Monday. Although pedagogically it is better to see the students 4 days per week (MWF for lecture and Tuesday for lab), it

may be possible to accommodate more students by scheduling class meetings for just 3 days per week.

Physics 220 was added into the fall schedule in Fall 2007. The LOAD in Fall 2007 and Fall 2008 were 200 and 220, respectively. As a result, the department stopped offering Physics 220 in the Fall. Spring LOAD for Physics 220 has been up and down: 360, 280, 440, 460, and 160 for the Spring 2007-2011 semesters. One thing that contributed quite positively to Spring 2010 LOAD in Physics 220 was that the department offered 3 sections of Physics 210 in the Fall 2009 semester. The third section of Physics 210 was added last minute and had no enrollment on the first day of the class. As a result, the overall LOAD for Physics 210 in Fall 2009 was only 392. A third section of Physics 210 is more likely to fill if advertised earlier. The best way that the enrollment and LOAD for Physics 220 can be increased would be to offer a third section of Physics 210 in the Fall, perhaps as an additional day section, perhaps as an evening section. Another change being planned for Spring 2012 is offering a cross-listed Physics 220 course in which students would have the option of taking the lecture portion of the class online or in the classroom. All students would still need to attend lab on campus for the course to remain transferrable. The department wishes to proceed very cautiously with offering an online physics course. Measure G funds will be requested both for developing the course in the Fall 2011 semester and for evaluating the relative effectiveness of the online option during the Spring 2012 semester. The department does not want to proceed with offering online courses if they are detrimental to student learning as measured by success and retention rates and assessment methods already in place for course SLOs.

IV. STUDENT SUCCESS EVALUATION AND ANALYSIS

a. Considering the overall "Success" and "Retention" data, briefly discuss how effectively the program addresses students' needs relative to current, past, and projected program and college student success rates. If applicable, identify unmet student needs related to student success and describe programmatic changes or other measures the department will consider or implement in order to improve student success. (*Note that item IV b, below, specifically addresses equity, diversity, age, and gender.*)
Overall success and retention rates for the department compared to the Math/Science division and to CSM:

07-08		retention(%)	success(%)
	Phys	81	62
	M/S	81	66
	CSM	84	70
08-09		retention(%)	success(%)
	Phys	74	57
	M/S	82	67
	CSM	84	70
09-10		retention(%)	success(%)
	Phys	73	58
	M/S	82	66
	CSM	85	70

Overall success and retention rates appear very constant for the division and the college and have dropped somewhat for the physics department over the three-year

period. Physics department rates are somewhat lower than for the division and the college overall. Physics courses, especially in the 210-211-220-221 and 250-260-270 sequences are demanding courses that students frequently take while taking a full load of other demanding courses. Faculty members in the physics department have been working to increase student success rates by a number of means.

- Some of us hold extra office hours to try to allow for all students in the class to attend at least one or two office hours per week. Some of us have held up to 8 or more hours by arrangement each week so that all students can fulfill the HBA requirement. These typically are guided problem-solving sessions where the instructor checks each step in the students' work and points out errors or give hints as to better approaches to solving the problems.
- We have added more computer-based experiments to the physics labs where appropriate so that students quickly see the result of the experiment and can analyze the results.

b. Briefly discuss how effectively the program addresses students' needs specifically relative to equity, diversity, age, and gender. If applicable, identify unmet student needs and describe programmatic changes or other measures the department will consider or implement in order to improve student success with specific regard to equity, diversity, age, and gender.

Not many conclusions can be drawn from one year's data of a not very large number of students. Based on data provided for 2009-2010, students who identify themselves as Asian, white, or Filipino have success rates somewhat higher than the department average. Students who identify themselves as Hispanic or other have lower success rates than the average. This is generally true for the college and division as well. Relatively few students who self-identified as black, Native American, or Pacific Islander enroll in physics courses at CSM so it is not statistically meaningful to include data about success and retention rates here.
Females made up 33% of students enrolled in physics classes; males 62%; and unrecorded 4%. The percentage of female students taking physics classes is lower than for the college or division. The success rate for female students was 61% vs. 56% for male students.

V. REFLECTIVE ASSESSMENT OF INTERNAL AND EXTERNAL FACTORS AND PROGRAM/STUDENT

a. Using the matrix provided below and reflecting on the program relative to students' needs, briefly analyze the program's strengths and weaknesses and identify opportunities for and possible threats to the program (SWOT). Consider both external and internal factors. For example, if applicable, consider changes in our community and beyond (demographic, educational, social, economic, workforce, and, perhaps, global trends); look at the demand for the program; program review links to other campus and District programs and services; look at similar programs at other area colleges; and investigate auxiliary funding.

	INTERNAL FACTORS	EXTERNAL FACTORS
Strengths	Courses are taught with integrity at an appropriate college level. Physics faculty are committed to helping students learn the physics they need to succeed in subsequent courses at CSM and after transfer. Most faculty members spend more than the required number of office hours to help students succeed. The Physics 250-260-270 sequence prepares students well for the engineering program at CSM. ("The strong preparation provided by CSM's math and physics programs continues to produce students who are well prepared for engineering courses." – Engineering Department Program Review.)	
Weaknesses	Perception in recent semesters by some students that physics instructors are too hard and demand too much work from students. Unfortunately, physics **is** hard. The amount of work assigned is not different from what it has always been; students need to do enough problems to understand the material.	Some students continue to enter the Physics 210 and 250 sequences ill prepared to do college level work. Our sister colleges to the north and south both have active MESA programs. Incoming students interested in math, science, and engineering may be drawn to Skyline and especially to Canada for the added support provided by MESA.
Opportunities	Developing online and hybrid courses to increase student opportunities for enrollment.	
Threats	Low enrollments in some courses continue to be a concern, especially in the current fiscal climate.	Cuts to the District Allocation from the State Budget may lead to reduction in classes and therefore student opportunity.

	The possible loss of one of room 36-114. One of the two lab rooms that our higher enrolled and feeder lab courses (Physics 150, 210 and 250) can be scheduled in.	Skyline College has changed its course outlines for the Physics 250-260-270 sequence. Moving content from Physics 250 to Physics 270 and eliminating content from Physics 270. Students completing Physics 250 at Skyline College and then taking Physics 260 and/or 270 at CSM are at a great disadvantage having not covered Fluids or Mechanical Waves.

b. If applicable, discuss how new positions, other resources, and equipment granted in previous years have contributed towards reaching program action steps and towards overall programmatic health. If new positions have been requested but not granted, discuss how this has impacted overall programmatic health. (You might reflect on data from Core Program and Student Success Indicators for this section.)

VI. Goals, Action Steps, and Outcomes

a. Identify the program's goals. Goals should be broad issues and concerns that incorporate some sort of measurable action and should connect to CSM's *Institutional Priorities 2008-2011*, *Educational Master Plan, 2008*, the Division work plan, and GE- or certificate SLOs.

The major goals are to increase enrollments and success/retention rates while maintaining the academic integrity of the program. Specifically we are looking at ways to improve enrollments in Phys 220 in the spring semester. We are also concerned with the lower enrollments in Phys 260 in 2010-2011 and in Phys 270 in Spring 2011. Since this drop in enrollment has only occurred this year, it is impossible to say if it is trend or an anomaly.

b. Identify the action steps your program will undertake to meet the goals you have identified.

The action steps are

a. continue to offer courses at the appropriate college level and cover all of the material included in the course outline as required for articulation with transfer schools
b. move the lab portion of Phys 260 from Tuesday afternoons to Monday afternoons. (This allows working students to complete the class with a MWF schedule. We have implemented this for Fall 2011 and will assess the impact on enrollments and also on performance of students in the class.)
c. Phys 250 is offered in the summer and had been a double-section class (maximum enrollment of 48) until budget cuts in 2009 and was offered as a single-section (maximum enrollment of 24) in summer 2009 and summer 2010. It is being offered as a double-section again in Summer 2011. The department hopes that this will improve enrollments in Phys 260 and 270 in the Fall and Spring semesters.
d. two possible approaches could help with the Phys 220 enrollments in Spring
    1. Adding an additional section of Phys 210 in the fall to try to increase enrollments in Phys 220 in the spring. The waitlist for Physics 210 in the Fall is almost always full. Adding a third section before the schedule comes out so that students know it is

available should increase enrollments in Phys 210 in the Fall and therefore in Phys 220 in the Spring.

2. Developing and analyzing the effectiveness of an online lecture while continuing to offer the lab on campus. The department has identified Violeta Grigorescu, in her role as adjunct professor, to work on developing an online version of the lectures for Physics 220, with the overall result of offering a Hybrid Physics 220 course. For at least the first time the online lecture is offered the department needs to offer it cross-listed with the on-campus lecture. This is needed to evaluate effects on enrollments; we do not want to offer this as only an on-line lecture and lose students who prefer an on-campus lecture. We also need to evaluate the effectiveness of the online lecture by comparing performance of students in the on-line portion to that of students in the traditional lecture. We are anticipating that we would be requesting funds for developing the online component of this hybrid course, from Measure G.

c. Briefly explain, specifically, how the program's goals and their actions steps relate to the *Educational Master Plan*.

The action steps of the department are in line with the college's Educational Master Plan. The departments action steps are designed to (1) increase enrollment by offering courses at times that fit students schedules and (2) increase enrollment by offering additional advertised sections of "feeder" courses, Physics 210 and 250. The Educational Master Plan calls for increased enrollment through marketing, outreach, recruiting, and retention.

The department's goals of increased retention and success rates as well as increased enrollment align with the Educational Master Plans goal for increased transfer rates, since students completing the Physics 210-220 or Physics 250-260-270 sequences are transfer students.

d. Identify and explain the program's outcomes, the measurable "mileposts" which will allow you to determine when the goals are reached.

The outcomes are increased enrollment, success and retention rates, and increased student learning. A "milepost" for enrollment would be having all sections of lab courses enroll with at least 20 students per lab section. Physics 100 is the only course without a lab and it has been enrolling well above this number.

A "milepost" for retention rate would be 75% (which we are almost at). An 80% retention rate would be a second milestone. However, an 80% retention rate may not be within the control of the department. Retention rates in Physics courses are greatly dependent on preparation the students have had in previous math courses.

A "milepost" for success rate would be 60% (which is 80% of the 75% of students retained). A second milepost would be a 68% (which is 85% of the 80% of students retained).

A "milepost" for student learning is meeting the success criteria of each assessment

method for the course level SLOs while at the same time increasing the enrollment and success and retention rates.

VII. SUMMARY OF RESOURCES NEEDED TO REACH PROGRAM ACTION STEPS

a. In the matrices below, itemize the resources needed to reach program action steps and describe the expected outcomes for program improvement.***** Specifically, describe the potential outcomes of receiving these resources and the programmatic impact if the requested resources cannot be granted.

***** *Note:* Whenever possible, requests should stem from assessment of SLOs and the resulting program changes or plans. Ideally, SLOs are assessed, the assessments lead to planning, and the resources requested link directly to those plans.

Full-Time Faculty Positions Requested	**Expected Outcomes if Granted and Expected Impact if Not Granted**	**If applicable, briefly indicate how the requested resources will link to achieving department action steps based on SLO assessment.**
Two full-time faculty members will likely retire within the next 5 years. We will likely need to hire one full-time faculty member in two or three years and another in four or five years.	Full-time faculty are essential for student access to faculty outside of class hours. Part-time faculty have limited availability due to commitments to additional employment in industry or in other community college districts. It is essential for student success for there to be access to instructors over more hours of the week.	

Classified Positions Requested	**Expected Outcomes if Granted and Expected Impact if Not Granted**	**If applicable, briefly indicate how the requested resources will link to achieving department action steps based on SLO assessment.**
None requested at this time.		

b. For instructional resources including equipment and materials, please list the exact items you want to acquire and the total costs, including tax, shipping, and handling. Include items used for instruction (such as computers, furniture for labs and centers) and all materials designed for use by students and instructors as a learning resource (such as lab equipment, books, CDs, technology-based materials, educational software, tests, non-printed materials). Add rows to the tables as necessary. If you have questions as to the specificity required, please consult with your division dean. Please list by priority.

Resources Requested	Expected Outcomes if Granted and Expected Impact if Not Granted	If applicable, briefly indicate how the requested resources will link to achieving department action steps based on SLO assessment.
Item: Supplies budget **Number:** **Vendor:** **Unit price:** **Total Cost:** $2000.00 **Status*:** Repair and maintenance of existing lab and demo equipment; replacement of consumable items used in laboratory experiments.	If we have money to maintain our current laboratory and demonstration equipment we will be able to continue to meet course requirements and SLOs.	
Item: Replacement Field Plates **Number:** 24 **Vendor:** Sargent-Welch **Unit price:** $33.39 **Total Cost:** $880.00 (estimate) **Status*:** Replacement	The Field Plates are used to study electric potential and electric fields. The plates allow for students to visualize electric potential lines and electric field lines. The current plates have outlived their operable life. The plates are coated in graphite, which is badly scratched on the plates the department currently has.	
Item: Start Up Equipment for Online Lectures **Number:** **Vendor:** **Unit price:** **Total Cost:** $2500 Estimated Itemization: $1800 Tablet PC $ 250 Live Scribe Echo Smart Pen $ 350 Video Camera $ 100 Digital Editing Tools **Status*:** New for online lecturing – to be requested from Measure G Innovation funds.	Increase in enrollments by offering a hybrid course in Physics 220.	

***Status = New, Upgrade, Replacement, Maintenance or Repair.*

VIII. Course Outlines

a. By course number (e.g. CHEM 210), please list all department or program courses included in the most recent college catalog, the date of the current Course Outline for each course, and the due date of each course's next update.

Course Number	Last Update Date	Six-Year Update Due Date
PHYS 100	November-10*	2016
PHYS 101	December-06	2012
PHYS 126	February-09	2015
PHYS 127	February-09	2015
PHYS 150	November-10*	2016
PHYS 210	November-10*	2016
PHYS 211	November-10*	2016
PHYS 220	February-09	2015
PHYS 221	April-11*	2017
PHYS 250	December-06	2012
PHYS 260	February-09	2015
PHYS 270	February-09	2015
PHYS 128	February-09	2015

*Submission dates in the 2010-11 academic year.

IX. Advisory and Consultation Team (ACT)

a. Please list non-program faculty who have participated on the program's Advisory and Consultation Team. Their charge is to review the *Program Review and Planning* report before its submission and to provide a brief written report with comments, commendations, and suggestions to the Program Review team. Provided that they come from outside the program's department, ACT members may be solicited from faculty at CSM, our two sister colleges, other community colleges, colleges or universities, and professionals in relevant fields. The ACT report should be attached to this document upon submission.

List ACT names here. Laura Demsetz, professor of engineering at CSM
Robert Hasson, professor of mathematics at CSM

Attach or paste ACT report here.

From Laura Demsetz:

The physics program is critical to students a variety of majors at CSM beyond the sciences. Physics courses represent roughly a quarter of the major preparation for transfer students in engineering and are also required for students transferring in architecture and - for most schools - math and computer science. The quality of instruction and academic rigor of CSM's physics classes provide excellent preparation for the demands of upper division work in these fields. Physics classes are where engineering students really learn problem solving skills. Those who have taken physics courses at CSM are well-prepared for advanced engineering courses at CSM (ENGR 230, ENGR 260) and beyond. Engineering alumni frequently comment on the benefits of the solid foundation they acquired in CSM physics classes. The physics program is to be commended for the excellent education it provides to students.

The program review notes the impact of changes in Physics 250 content at Skyline. Because students take courses at multiple colleges in the district, it is important that the topics be brought into alignment. Students who take Physics 250 at Skyline miss topics that are covered at CSM and are not fully prepared to succeed in Physics 260 and 270 at CSM; this may increase the perception that CSM classes are difficult. Students who complete Physics 250 at Skyline and then travel to CSM for engineering or advanced math classes may be therefore be hesitant to also enroll in physics at CSM.

Students in physics classes typically have very little flexibility in their daily schedule due to multiple lab courses; the full time physics faculty are to be commended for providing a variety of times at which students can carry out their supervised hour by arrangement work. Adjunct faculty are not often able to provide the same flexibility. The physics department should consider coordinating hour by arrangement assignments and schedules so that students from any course would have access to a physics instructor at designated hours.

The proposed introduction of a distance education component to the physics curriculum seems well-planned and appropriately cautious.

From Bob Hasson:

ACT report for Physics program review, Spring 2011

ACT person: Bob Hasson, Math Department, CSM.

I commend the Physics department for their implementation of SLO assessment, their awareness of their program and their students, and their ideas to improve their offerings and student success as their assessment data indicates. The report shows careful assessment and careful thinking.

A couple of clarifications that would help the reader:

1. From page 4 of the Program Review document: "It is the opinion of the majority of the physics department that these courses be reassigned as Physical Science as their scope is not limited to physics, but include also students interested in teaching science in the other physical sciences: chemistry, geology, astronomy, etc. These courses should not be included in the LOAD calculations for the physics department due to the special nature and history of the courses."

Does that mean the courses should be listed as Physical Science 126-127-128 instead of Physics (and Bio) 126-127-128?

2. On page 8 there is a discussion of recalculation of LOAD values with regard to the Physics 126, 127, and 128. Again, I don't quite understand why the adjustments to LOAD are significant as an idea. I note that they don't seem to make a lot of difference.

A couple of suggestions:

1. Might seek out discussions with other parts of the college interested in student success across diversity to get ideas on how some groups of students may be more successful. Might seek out models on student success in Physics across diversity from the larger educational world outside of the college, again for the same purpose.

2. Students in online Physics courses may, as a group, be pretty different from students in on-campus Physics courses. Hence prototyping, assessing, and re-prototyping will probably be necessary.

b. Briefly describe the program's response to and intended incorporation of the ACT report recommendations.

First, two changes were made to the program review to address the clarifications sought by Bob Hasson.

1. The wording in question: "It is the opinion of the majority of the physics department that these courses be reassigned as Physical Science as their scope is not limited to physics, but include also students interested in teaching science in the other physical sciences: chemistry, geology, astronomy, etc. These courses should not be included in the LOAD calculations for the physics department due to the special nature and history of the courses."

   For clarification, has been changed to: "It is the opinion of the majority of the physics department that these courses be ***redesignated and listed*** as Physical Science ***126, 127, and 128*** as their scope is not limited to ***students interested in teaching*** physics, but include also students interested in teaching science in the other physical sciences: chemistry, geology, astronomy, etc. These courses should not be included in the LOAD calculations for the physics department due to the special nature and history of the courses."

2. The table included in the original report

Semester	LOAD (Pre 2009 Method)	LOAD (Post 2008 Method)
Fall 2006	381	398
Spring 2007	358	374
Fall 2007	340	351
Spring 2008	341	356
Fall 2008	432	450
Spring 2009	431	450
Fall 2009	481	502
Spring 2010	469	489
Fall 2010	526	549
Spring 2011	389	405

has had the columns renamed and one additional column added to include the department LOAD including hours covered by instructors in the ISC and the low enrolled Physics 126, 127 and 128 which are planned to be redesignated as Physical Science 126, 127, and 128. The reason for the two calculated columns was to eliminate changes in accounting which led to artificial changes in LOAD and hence made it impossible to comment on trends.

Semester	LOAD calculated without including FTEF assigned to the Integrated Science Center or WSCH and FTEF from Physics 126, 127, and 128		LOAD values supplied by PRIE which include FTEF assigned to the ISC and WSCH and FTEF for PHYS 126, 127, and 128
	Pre 2009 Method for calculating WSCH captured by HBA	Post 2008 Method for calculating WSCH captured by HBA	
Fall 2006	381	398	379
Spring 2007	358	374	348
Fall 2007	340	351	338
Spring 2008	341	356	333
Fall 2008	432	450	422
Spring 2009	431	450	421
Fall 2009	481	502	465
Spring 2010	469	489	429
Fall 2010	526	549	486
Spring 2011	389	405	Known to be in Error

Next, the advice and suggestions from Bob Hasson and Laura Demsetz concerning distance education development, student success for a diverse population, coordination of Hours by Arrangement scheduling and working with our sister college will be useful as we spend the next years working to increase enrollment through new modes of delivery and increase student retention and success.

X. PROGRAM REVIEW PARTICIPANTS AND SIGNATURES

Date of Program Review evaluation:

Please list the department's *Program Review and Planning* report team:

Primary program contact person: David Locke
Phone and email address: 574-6624 locke@smccd.edu
Full-time faculty: Barbara Uchida
Part-time faculty: Violeta Grigorescu
Administrator: Charlene Frontiera
Classified staff: Violeta Grigorescu
Students:

Primary Program Contact Person's Signature	*Date*
Full-time Faculty's Signature	*Date*
Part-time Faculty's Signature	*Date*
Administrator's Signature	*Date*
Classified Staff Person's Signature	*Date*
Student's Signature	*Date*
Dean's Signature	*Date*

Unit Course Assessment Report - Four Column

San Mateo CCCD

CSM Dept - Physics

Department Assessment Coordinator: David Locke

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CSM Dept - Physics - CSM PHYS 100 - Descript Intro To Physics - Newton's Laws of Motion - State Newton's Law's of Motion, explain the meaning of each, and identify applications of each. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** A question on the final exam asking for the student to state a specified Law and explain its meaning. For each of Newton's 3 Laws of Motion, a question on the final which requires its application. Check percentage of students correct on each of these 4. **Assessment Method Category:** Exam **Success Criterion:** 75% of students being able to state one of Newton's Laws of Motion. 70% of students being able to apply each of Newton's Laws to answer a specific question.	06/08/2010 - 100% of students were able to state one of Newton's Laws of Motion. 93% of students being able to apply each of Newton's Laws to answer a specific question. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 100 - Descript Intro To Physics - Energy - List and identify forms of energy and ways in which one form of energy can be transformed into another form (e.g. mechanical energy being transformed to electrical energy by a water wheel). This may include kinetic energy, potential energy, thermal energy, temperature, work, heat, atomic energy, nuclear energy, and photons. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** A question on the final requiring the use of conservation of energy. Check the percentage of students who: For a problem on the Final Exam requiring energy concepts to answer: Identify the problem as requiring conservation of energy. Identify the forms of energy present. Correctly answer the question. **Assessment Method Category:** Exam **Success Criterion:** 75% of students being able to identify a problem as an energy problem of those, 70% of students scoring at or	06/08/2010 - 100% of students being able to identify a problem as an energy problem of those, 89% of students scoring at or above C-level. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	above C-level.		
CSM Dept - Physics - CSM PHYS 100 - Descript Intro To Physics - Electric and Magnetic Fields - State the source of electric and magnetic forces and fields. Describe phenomena relating to electricty and magnetism. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** A question on the final exam asking for the student to state the source of electric and/or magnetic fields or a problem asking the student to describe a phenomenon relating to electric and magnetic fields. **Assessment Method Category:** Exam **Success Criterion:** 70% of students being able to answer the question correctly	06/08/2010 - Did not cover this material, hence not assessed **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	06/08/2010 - Exclude some of the optional section to make time for this topic.
CSM Dept - Physics - CSM PHYS 100 - Descript Intro To Physics - Matter and Waves - Describe matter on the atomic scale, the properties and nature of the different states of matter, and the properties of different types of waves which may include light and sound. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** A question on the final exam asking for the student to describe matter on the atomic scale, the properties and nature of the different states of matter, and the properties of different types of waves. **Assessment Method Category:** Exam **Success Criterion:** 70% of students being able to answer the question correctly	06/08/2010 - 81% could describe matter on the atomic scale, the properties and nature of the different states of matter, and the properties of different types of waves. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 101 - Conceptual Physics Lab - Lab SLO - Identify and understand Newton's Laws of Mechanics, thermal and electromagnetic properties of matter, and basic laws of optics by setting up and conducting experiments. **Course Outcome Status:** Inactive			
CSM Dept - Physics - CSM PHYS 150 - Preparation for Physics - Symbolic Algebra - Solve symbolic algebra	**Assessment Method:** Student performance on Symbolic Algebra Portion of Final Exam	06/11/2010 - 83% of students who passed the course scored at or above 75% on the symbolic algebra portion of the final exam.	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
equations and systems of equations for specified variables. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method Category:** Exam **Success Criterion:** 80% of students scoring at a passing rate (75% or higher) on the Symbolic Algebra Portion of the Final.	**Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 150 - Preparation for Physics - Scientific Graphing - Create and analyze scientific graphs with appropriate accuracy. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Mastery Test Section on Scientific Graphing **Assessment Method Category:** Exam **Success Criterion:** 80% of students scoring at a passing rate (75% or higher) on the Scientific Graphing portion of a Mastery Test	06/11/2010 - All students who passed the course scored at a passing rate on the Scientific Graphing portion of the Mastery Test. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 150 - Preparation for Physics - Vector Addition - Solve problems which require vector addition. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Vector Addition Problem on the Final Exam **Assessment Method Category:** Exam **Success Criterion:** 80% of students scoring at a passing rate (75% or higher) on the Vector Addition Problem(s) of the Final.	06/11/2010 - 78% of students scored at or above 75% on the vector addition portion of the final exam. **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 150 - Preparation for Physics - Kinematics Graphs - Analyze graphs of position, velocity and acceleration and answer qualitative and quantitative questions using the graphs. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Student performance on Kinematics Graphs Portion of Final Exam **Assessment Method Category:** Exam **Success Criterion:** 80% of students scoring at a passing rate (75% or higher) on the Kinematics Graphs Portion of the Final.	06/11/2010 - 61% of students who passed the course scored at or above 75% on the Kinematics Graphs portion of the final exam. **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	06/11/2010 - Budget time in the class so that there is more time to cover Kinematics and the end of the course. Lobby to remove flex days to give more classroom instruction days.
CSM Dept - Physics - CSM PHYS 150 - Preparation for Physics - Kinematics Problems - Set-up and solve	**Assessment Method:** Student performance on Kinematics Problems on Final Exam	06/11/2010 - 65% of students who passed the course scored at or above 75% on the Kinematics Problems on the final.	06/11/2010 - Budget time in the class so that there is more time to

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
kinematics problems. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method Category:** Exam **Success Criterion:** 80% of students scoring at a passing rate (75% or higher) on the Kinematics Problems on the Final.	**Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	cover Kinematics and the end of the course. Lobby to remove flex days to give more classroom instruction days.
CSM Dept - Physics - CSM PHYS 150 - Preparation for Physics - Lab SLO - Collect and analyze data to verify physics principles. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Percentage of Students who complete the lab exercises for the course. **Assessment Method Category:** Other **Success Criterion:** 100% of students meet the criteria.	06/11/2010 - All students who passed the course completed the lab exercises. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 210 - General Physics I - Newton's Laws of Motion - Identify problems that should be solved using Newton's Laws of Motion and correctly solve them. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Newton's Law Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Problem requiring one or more of Newton's Laws of Motion, 70% of those students score at or above C-level on the problem.	06/03/2010 - 100% of students correctly identified the problem and of those 100% scored C or higher on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 12/22/2009 - 100% of students identified the problem as Newton's Second Law and 80% of those students scored at or above C-level. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 210 - General Physics I - Work-Energy - Identify problems that should be solved using the Work-Energy Theorem and correctly solve them. **Start Date:** 08/01/2008 **Course Outcome Status:**	**Assessment Method:** Work-Energy Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a problem that should be solved by the Work-Energy Theorem or	06/03/2010 - 83% of students correctly identified the probem; 100% of these students scored C or higher on the problem **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Active - Currently Assessing	Conservation of Energy, 70% of those students score at or above C-level on the problem.	12/22/2009 - On the Fall 2009 final, there was no problem that had to be solved by conservation of energy. There were two problems that could be solved by conservation of energy or by another method. One problem could be solved by conservation of energy (easiest) or with kinematic equations (required more work). 40% of the students approached the problem by conservation of energy and 100% of those students solved the problem correctly. The other 60% of students attempted the problem using kinematics. Only 33% of those students scored at or above C-level on the portion of the problem. One problem could be solved by conservation of energy (easiest) or with Newton's Laws (required more work). 50% of the students approached the problem by conservation of energy and 100% of those students solved the problem correctly. The other 50% of students attempted the problem using kinematics. Only 40% of those students scored at or above C-level on the portion of the problem. **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	12/22/2009 - Stress to students the importance of choosing the easiest method. It is true that the alternate methods are perfectly valid, but as the data shows fewer students who choose those methods score at or above C-level on the problems. Perhaps quoting this data to students would be very helpful in encouraging them to choose the easier method for solving a problem.
CSM Dept - Physics - CSM PHYS 210 - General Physics I - Conservation of Momentum - Identify problems that should be solved using Conservation of Momentum (Linear and Angular) and correctly solve them. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Conservation of Momentum Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Conservation of Momentum (Linear or Angular) Problem, 70% of those students score at or above C-level on the problem.	06/03/2010 - 100% of students correctly identified the angular momentum and linear momentum conservation problems. 100% of students scored at or above C level. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 12/22/2009 - On the Fall 2009 final students were not asked to solve a conservation of momentum	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		problem, but were asked to state the condition under which the total momentum of a system is conserved. 100% of students answered at C-level or above. **Result Type:** Inconclusive **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 210 - General Physics I - Ideal Gases - Identify and correctly solve problems involving ideal gases. This may include defining an ideal gas, using the ideal gas law (equation of state), problems involving work and energy, distribution of speeds, definition of temperature, and explanation of Cv for a diatomic gas. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Ideal Gas Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as an Ideal Gas Problem, 70% of those students score at or above C-level on the problem.	06/03/2010 - 100% of students identified the problem as an ideal gas problem. Of these, 67% completed the problem at C level or higher. **Result Type:** Inconclusive **Reporting Cycle:** 2009 - 2010	
		12/22/2009 - 100% of students identified the problem as an ideal gas law problem and 100% of students scored at or above C-level on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 210 - General Physics I - First and Second Law of Thermodynamics - Identify problems that should be solved using the First and/or Second Law of Thermodynamics and correctly solve them. This may include heat engine cycles and their efficiency. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** First and/or Second Law of Thermodynamics Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a First and/or Second Law of Thermodynamics Problem, 70% of those students score at or above C-level on the problem.	06/03/2010 - 100% of students identified that the problem involved the first law of thermodynamics. 50% of these scored at C level or higher on the problem. **Result Type:** Inconclusive **Reporting Cycle:** 2009 - 2010	06/03/2010 - Problem involved multiple concepts so students got incorrect results due to other errors. On future final exam include a problem that only requires use of the First and/or Second Law of Thermodynamics.
		12/22/2009 - 100% of students identified the problem as requiring the First Law of Thermodynamics. Of those students, 90% scored at or above C-level on the problem.	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Result Type: Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 210 - General Physics I - Lab SLO - Collect and analyze data to verify physics principles. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Any student passing the lab portion of the course (70% or higher) will be considered to have satisfied this. **Assessment Method Category:** Other **Success Criterion:** 100% of students meet the criteria.	06/03/2010 - 100% of students met this criteria. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		12/22/2009 - 100% of students received 84% or higher in the lab portion of the course. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 211 - General Physics I-Calculus Sup - Application of Differential Calculus - Identify mechanics and thermodynamics problems that should be solved using differential calculus and correctly solve them. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** An Exam Problem requiring the use of Differential Calculus **Assessment Method Category:** Exam **Success Criterion:** 75% of students identify the problem as requiring differential calculus. 70% of those students score at or above C-level.	06/08/2010 - 100% of students identified problem as requiring differential calculus. 100% of those students scored at or above C level. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		12/22/2009 - 100% of students identified the problem on the final that required differential calculus. 89% of those students scored at or above C-level on the part of the problem that required differential calculus. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		12/19/2008 - 100% of students identified problem as requiring differential calculus. 100% of those students scored at or above C level. **Result Type:** Criterion met **Reporting Cycle:**	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		2009 - 2010	
CSM Dept - Physics - CSM PHYS 211 - General Physics I-Calculus Sup - Application of Integral Calculus - Identify mechanics and thermodynamics problems that should be solved using integral calculus and correctly solve them. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** An Exam Problem requiring the use of Integral Calculus. **Assessment Method Category:** Exam **Success Criterion:** 75% of students identify the problem as requiring integral calculus. 70% of those students score at or above C-level on that problem.	06/08/2010 - 100% of students identify the problem as requiring integral calculus. 100% scored at or above C level. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		12/22/2009 - 100 % of students identified that the problem required integral calculus. 89% of those students scored at or above C-level. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		12/19/2008 - 100 % of students identified that the problem required integral calculus. 97% of those students scored at or above C-level. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 220 - General Physics II - Electric and Magnetic FIelds - Identify problems involving electric and/or magnetic fields and forces and correctly solve them. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Electric and/or Magnetic Force or Field Problem on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students identify the problem as an Electric and/or Magnetic Field/Force problem 70 % of those students score at or above C-level on the problem	06/08/2010 - 100% of students identified the problem as an Electric and/or Magnetic Field/Force problem 88% of those students scored at or above C-level on the problem **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CSM Dept - Physics - CSM PHYS 220 - General Physics II - DC Circuits - Analyze DC Circuits. **Start Date:** 08/01/2010 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Problem on Final Exam requiring DC Circuit analysis. **Assessment Method Category:** Exam **Success Criterion:** 75% of students identify the problem as a DC Circuit problem 70 % of those students score at or above C-level on the problem	06/08/2010 - 100% of students identified the problem as a DC Circuit problem 94% of those students scored at or above C-level on the problem. * **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 220 - General Physics II - Geometric Optics - Identify problems that should be solved using concepts of geometric optics and correctly solve them. This includes but is not limited to solving image formation problems. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Geometric Optics Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Geometric Optics Problem, 70% of those students score at or above C-level on the problem.	06/08/2010 - 100% of students correctly identified the problem as a Geometric Optics Problem, 81% of those students scored at or above C-level on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 220 - General Physics II - Physical Optics - Identify problems that should be solved using physical optics and correctly solve them. This includes but is not limited to solving single and double slit problems. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Physical Optics Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Physical Optics Problem, 70% of those students score at or above C-level on the problem.	06/08/2010 - 94% of students correctly identified the problem as a Physical Optics Problem, 87% of those students scored at or above C-level on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 220 - General Physics II - Photons/Quantization of Energy - Identify	**Assessment Method:** Quantization of Energy Problem given on Final Exam	06/08/2010 - 94% of students correctly identify the problem as a Quantization of Energy Problem,	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
problems involving quantization of energy and correctly solve them. This includes but is not limited to the photoelectric effect and energy levels in atoms. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Quantization of Energy Problem, 70% of those students score at or above C-level on the problem.	93% of those students scored at or above C-level on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 220 - General Physics II - Atomic and Nuclear Structure - Identify problems involving the structure of the atom and the nucleus and correctly solve them. This includes but is not limited to the quantum-mechanical view of atoms and nuclear binding energy and radioactivity. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Atomic or Nuclear Structure Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Atomic or Nuclear Structure Problem, 70% of those students score at or above C-level on the problem.	06/08/2010 - 94% of students correctly identify the problem as a Atomic or Nuclear Structure Problem, 87% of those students score at or above C-level on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 220 - General Physics II - Lab SLO - Collect and analyze data to verify physics principles. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Any student passing the lab portion of the course (70% or higher) will be considered to have satisfied this **Assessment Method Category:** Other **Success Criterion:** 100% of students meet the criteria.	06/08/2010 - 100% of the students met the criteria. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 221 - Gen Physics II Calculus Sup - Application of Differential Calculus - Identify electricity and magnetism, optics, and modern physics problems that should be solved using differential calculus and correctly solve them. **Start Date:** 07/31/2008	**Assessment Method:** An Exam Problem requiring the use of Differential Calculus **Assessment Method Category:** Exam **Success Criterion:** 75% of students identify the problem as requiring differential calculus. 70% of those students score at or above C-level on the problem.	06/08/2010 - 100% of students identified the problem as requiring differential calculus. 100% of those students scored at or above C-level on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Course Outcome Status: Active - Currently Assessing			
CSM Dept - Physics - CSM PHYS 221 - Gen Physics II Calculus Sup - Application of Integral Calculus - Identify electricity and magnetism, optics, and modern physics problems that should be solved using integral calculus and correctly solve them. **Start Date:** 07/31/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** An Exam Problem requiring the use of Integral Calculus **Assessment Method Category:** Exam **Success Criterion:** 75% of students identify the problem as requiring integral calculus. 70% of those students score at or above C-level on the problem.	06/08/2010 - 100% of students identified the problem as requiring integral calculus. 100% of those students scored at or above C-level on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 250 - Physics with Calculus I - Newton's Laws of Motion - Identify problems that should be solved using Newton's Laws of Motion and correctly solve them. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Newton's Law Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as requiring at least one of Newton's Laws of Motion, 70% of those students score at or above C-level on the problem.	06/03/2010 - 67% of students identified that the problem could be solved by Newton's Second Law, of those 100% scored at or above C-level. The remaining 33% attempted a different valid method (conservation of energy), 50% of those students scored at or above C-level. So, a total of 100% identified a valid method for solving the problem and 83% of students scored at or above C-level. **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 250 - Physics with Calculus I - Work-Energy - Identify problems that should be solved using the Work-Energy Theorem and correctly solve them. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Work-Energy Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Work-Energy or Conservation of Energy Problem, 70% of those students score at or above C-level on the problem.	06/03/2010 - 83% of students identified that the problem required Conservation of Energy, of those 80% scored at or above C-level. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CSM Dept - Physics - CSM PHYS 250 - Physics with Calculus I - Conservation of Momentum - Identify problems that should be solved using Conservation of Momentum (Linear and Angular) and correctly solve them. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Conservation of Momentum Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Conservation of Momentum (Linear or Angular) Problem, 70% of those students score at or above C-level on the problem.	06/03/2010 - 100% of students identified the problem which required Conservation of Linear Momentum, of those 67% scored at or above C-level on the problem. 83% of students identified the Conservation of Angular Momentum Problem on the final. 100% of those students scored at or above C-level on the problem. **Result Type:** Inconclusive **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 250 - Physics with Calculus I - Lab SLO - Collect and analyze data to verify physics principles. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Any student passing the lab portion of the course (70% or higher) will be considered to have satisfied this **Assessment Method Category:** Other **Success Criterion:** 100% of students meet the criteria.	06/03/2010 - 100% of the students successfully completing the course received 70% or higher in the lab portion of the course. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 260 - Physics with Calculus II - Coulomb's Law - Identify problems that should be solved using Coulomb's Law for electric forces and electric fields and correctly solve them **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Force or Electric Field Problem on Final Exam which requires the use of Coulomb's Law **Assessment Method Category:** Exam **Success Criterion:** 75% of students identify the problem as a Coulomb's Law problem 70% of students score at or above C-level on the problem	06/08/2010 - 100% of students correctly identified the two problems that involved Coulomb's Law. 55% of students scored C or higher on the continuous charge distribution problem. 74% of students scored C or higher on the discrete charges problem. **Result Type:** Inconclusive **Reporting Cycle:** 2009 - 2010	
		12/22/2009 - 89% of students identified the problem as a Coulomb's Law problem Of that 89%, 75% scored at C-level or above on the problem. **Result Type:** Criterion not met	03/12/2010 - Since Coulomb's is the first topic of the course, more review of Coulomb's Law should be done in the last week or two of the course.

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Reporting Cycle: 2009 - 2010	
CSM Dept - Physics - CSM PHYS 260 - Physics with Calculus II - Gauss's Law - Identify problems that should be solved using Gauss's Law for electric fields and correctly solve them. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Problem on Final Exam which requires the use of Gauss's Law (or that is most easily solved with Gauss's Law) **Assessment Method Category:** Exam **Success Criterion:** 75% of students identify the problem as a Gauss's Law problem 70% of students score at or above C-level on the problem	06/08/2010 - 100% of students identified the problem as a Gauss's Law problem. 95% of students received a C or higher on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		12/22/2009 - 78% identified the problem as best-solved by Gauss's Law (the other 22% identified correctly that the problem could be solved by Coulomb's Law). Of the 78% who identified the problem as a Guass's Law Problem, 71% scored at or above C-level. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 260 - Physics with Calculus II - Ampere's Law - Identify problems that should be solved using Ampere's Law and correctly solve them. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Problem on Final Exam which requires the use of Ampere's Law **Assessment Method Category:** Exam **Success Criterion:** 75% of students identify the problem as a Ampere's Law problem 70% of students score at or above C-level on the problem	06/08/2010 - 100% of students identified the problem as an Ampere's Law problem. 95% of students scored C or higher on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		12/22/2009 - 89% of students identified the problem as an Ampere's Law Problem, of those 100% scored at or above C-level on the problem **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CSM Dept - Physics - CSM PHYS 260 - Physics with Calculus II - Faraday's Law - Identify problems that should be solved using Faraday's Law and correctly solve them. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Problem on Final Exam which requires the use of Faraday's Law to solve **Assessment Method Category:** Exam **Success Criterion:** 75% of students identify the problem as a Faraday's Law problem 70% of those students score at or above C-level on the problem	06/08/2010 - 100% of students identified the problem as a Faraday's Law problem. 50% of students achieved a score of C or higher on the problem. **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	06/11/2010 - Review Faraday's Law more before the final exam. Removal of flex days would allow for more review time at the end of the semester.
		12/22/2009 - 89% of students identified the problem as a Faraday's Law Problem, only 50% of students scored at or above C-level on the problem. **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 260 - Physics with Calculus II - Circuits - Analyze DC and AC circuits. **Start Date:** 08/01/2010 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Problem on Final Exam requiring circuit analysis. **Assessment Method Category:** Exam **Success Criterion:** 75% of students identify the problem as a circuit problem 70% of those students score at or above C-level on the problem	06/08/2010 - 100% of students identified the problem as a DC circuit problem. 95% of students scored C or higher on the problem. No AC circuit problem was included on the final exam since it was only covered in the last week of classes due to missing classes due to extra flex days. **Result Type:** Inconclusive **Reporting Cycle:** 2009 - 2010	
		12/22/2009 - 89% of students identified the DC Circuit problem, of those 100% scored at or above C-level 100% of students identified the AC Circuit problem, of those 78% scored at or above C-level **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CSM Dept - Physics - CSM PHYS 260 - Physics with Calculus II - Lab SLO - Collect and analyze data to verify physics principles. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Any student passing the lab portion of the course (70% or higher) will be considered to have satisfied this **Assessment Method Category:** Other **Success Criterion:** 100% of students meet the criteria.	06/08/2010 - 100% of students met the criteria. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 12/22/2009 - 100% of students who passed the course scored at or above 70% in lab. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 270 - Physics with Calculus III - Geometric Optics - Identify problems that should be solved using concepts of geometric optics and correctly solve them. This includes but is not limited to solving image formation problems. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Geometric Optics Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Geometric Optics Problem, 70% of those students score at or above C-level on the problem.	06/08/2010 - 100% of students correctly identified the problem as a Geometric Optics Problem, 87% of those students scored at or above C-level on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 270 - Physics with Calculus III - Physical Optics - Identify problems that should be solved using physical optics and correctly solve them. This includes but is not limited to solving single and double slit problems. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Physical Optics Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Physical Optics Problem, 70% of those students score at or above C-level on the problem.	06/08/2010 - 100% of students correctly identified the problem as a Physical Optics Problem, 80% of those students scored at or above C-level on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 270 - Physics with Calculus III - Heat and Temperature - Identify and	**Assessment Method:** Heat and Temperature Problem given on Final Exam	06/08/2010 - 100% of students correctly identify the problem as a Heat and Temperature Problem, 80% of those students score at or above C-level	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
correctly solve problems involving heat and temperature. This may include calorimetry, heat transfer, and thermal expansion. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Heat and Temperature Problem, 70% of those students score at or above C-level on the problem.	on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 270 - Physics with Calculus III - Ideal Gases - Identify and correctly solve problems involving ideal gases. This may include defining an ideal gas, using the ideal gas law (equation of state), problems involving work and energy, distribution of speeds, definition of temperature, and explanation of Cv for a diatomic gas. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Ideal Gas Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as an Ideal Gas Problem, 70% of those students score at or above C-level on the problem.	06/09/2010 - 100% of students correctly identified the problem as an Ideal Gas Problem, 93% of those students score at or above C-level on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 270 - Physics with Calculus III - First and Second Law of Thermodynamics - Identify problems that should be solved using the First and/or Second Law of Thermodynamics and correctly solve them. This may include heat engine cycles and their efficiency. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** First and/or Second Law of Thermodynamics Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a First and/or Second Law of Thermodynamics Problem, 70% of those students score at or above C-level on the problem.	06/08/2010 - 93% of students correctly identified the problem as a First and/or Second Law of Thermodynamics Problem, 79% of those students scored at or above C-level on the problem. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 270 - Physics with Calculus III - Photons/Quantization of Energy - Identify problems involving quantization of energy and correctly solve them. This includes but is	**Assessment Method:** Quantization of Energy Problem given on Final Exam **Assessment Method Category:** Exam	06/09/2010 - 100% of students correctly identified the problem as a Quantization of Energy Problem, 93% of those students scored at or above C-level on the problem. **Result Type:**	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
not limited to the photoelectric effect and energy levels in atoms. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Success Criterion:** 75% of students correctly identify the problem as a Quantization of Energy Problem, 70% of those students score at or above C-level on the problem.	Criterion met **Reporting Cycle:** 2009 - 2010	
CSM Dept - Physics - CSM PHYS 270 - Physics with Calculus III - Wavefunctions - Identify problems that should be solved using wavefunctions and correctly solve them. These may involve using Schrodinger's Equation to verify that a wavefunction is a solution and to find energy levels. These may also include problems involving probability. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Wavefunction Problem given on Final Exam **Assessment Method Category:** Exam **Success Criterion:** 75% of students correctly identify the problem as a Wavefunction Problem, 70% of those students score at or above C-level on the problem.	06/08/2010 - Did not have enough time to cover it sufficiently in order to test the students **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	06/08/2010 - Adhere to the schedule by skipping more optional sections
CSM Dept - Physics - CSM PHYS 270 - Physics with Calculus III - Lab SLO - Collect and analyze data to verify physics principles. **Start Date:** 08/01/2008 **Course Outcome Status:** Active - Currently Assessing	**Assessment Method:** Any student passing the lab portion of the course (70% or higher) will be considered to have satisfied this **Assessment Method Category:** Other **Success Criterion:** 100% of students meet the criteria.	06/08/2010 - 100% of students met the criteria. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

WSCH, FTEF, FTES and LOAD provided by PRIE

FALL 2006			CENSUS	FTE	FTES	WSCH	LOAD	WSCH/Census	Notes
PHYS	100 AA	82795	23	0.2	3.07	92.00	460	4	
PHYS	150 AA	86456	9	0.36	2.1	63.00	175	7	
PHYS	150 AB	90410	19	0.36	4.43	133.00	369	7	
PHYS	210 AX	82797	22	0.36	5.13	154.00	428	7	
PHYS	210 BX	83388	17	0.16	3.97	119.00	744	7	
PHYS	211 AA	85472	13	0.07	0.43	13.00	195	1	
PHYS	250 AA	82799	13	0.43	3.9	117.00	274	9	
PHYS	250 AB	85703	17	0.43	5.1	153.00	359	9	
PHYS	260 AA	82800	20	0.36	5.33	160.00	444	8	
PHYS	270 AA	82801	21	0.36	5.6	168.00	467	8	
PHYS			**174**	**3.09**	**39.06**	**1172.00**	**379**		

PRING 2007			CENSUS	FTE	FTES	WSCH	LOAD		
PHYS	100 AA	32653	36	0.20	4.80	144.00	720	4	
PHYS	150 AA	36456	22	0.36	5.13	154.00	428	7	
PHYS	150 BA	37067	12	0.36	2.96	88.80	247	7.4	This is correct - Physics 150 was 4 times per week at 1.6 contact hours per meeting.
PHYS	210 AA	40804	18	0.36	4.20	126.00	350	7	
PHYS	211 AA	40808	5	0.07	0.17	5.00	75	1	
PHYS	220 AA	32655	18	0.36	4.20	126.00	350	7	
PHYS	221 AA	35262	8	0.07	0.27	8.00	120	1	
PHYS	250 AA	32656	23	0.43	6.90	207.00	485	9	
PHYS	250 CA	37512	12	0.43	3.60	108.00	253	9	
PHYS	260 AA	32657	16	0.36	3.73	112.00	311	7	These are incorrect! Should have 3 lecture, 3 lab and 2 HBA hours!
PHYS	270 AA	34041	13	0.36	3.03	91.00	253	7	These are incorrect! Should have 3 lecture, 3 lab and 2 HBA hours!
PHYS			**183**	**3.36**	**38.99**	**1169.80**	**348**		

FALL 2007			CENSUS	FTE	FTES	WSCH	LOAD		
PHYS	100 AA	82795	44	0.20	5.87	176.00	880	4	
PHYS	101 AA	91106	15	0.16	1.65	49.50	309	3.3	This is correct - Physics 100 met on Monday and due to one fewer Monday in the fall was 3.3 contact hours.
PHYS	150 AA	86456	7	0.36	1.63	49.00	136	7	
PHYS	150 AB	90410	17	0.36	3.97	119.00	331	7	
PHYS	210 AX	82797	25	0.36	5.83	175.00	486	7	
PHYS	210 BX	83388	23	0.16	5.37	161.00	1006	7	
PHYS	211 AA	85472	13	0.07	0.43	13.00	195	1	
PHYS	220 AA	91009	10	0.36	2.33	70.00	194	7	
PHYS	221 AA	91010	3	0.07	0.10	3.00	45	1	
PHYS	250 AA	82799	15	0.43	4.50	135.00	316	9	
PHYS	250 AB	85703	6	0.43	1.80	54.00	127	9	
PHYS	260 AA	82800	12	0.36	3.20	96.00	267	8	
PHYS	270 AA	82801	17	0.36	4.76	142.80	397	8.4	
PHYS	**TOTAL**		**207**	**3.68**	**41.44**	**1243.30**	**338**		

WSCH, FTEF, FTES and LOAD provided by PRIE

PRING 2008			CENSUS	FTE	FTES	WSCH	LOAD	WSCH/Census	Notes
PHYS	100 AA	32653	42	0.20	5.60	168.00	840	4	
PHYS	101 AA	41322	17	0.16	1.70	51.00	319	3	
PHYS	150 AA	36456	16	0.36	3.73	112.00	311	7	
PHYS	150 BA	37067	14	0.36	3.45	103.60	288	7.4	This is correct - Physics 150 was 4 times per week at 1.6 contact hours per meeting.
PHYS	210 AA	40804	22	0.36	5.13	154.00	428	7	
PHYS	211 AA	40808	7	0.07	0.23	7.00	105	1	
PHYS	220 AA	32655	14	0.36	3.45	103.60	288	7.4	Need a schedule of classes to check this one!
PHYS	221 AA	35262	2	0.07	0.07	2.00	30	1	
PHYS	250 AA	32656	8	0.43	2.40	72.00	169	9	
PHYS	250 CA	37512	16	0.43	4.91	147.20	345	9.2	This is incorrect! Should be the same as the AX section.
PHYS	260 AA	32657	16	0.36	3.95	118.40	329	7.4	These are incorrect! Should have 3 lecture, 3 lab and 2 HBA hours!
PHYS	270 AA	34041	19	0.36	4.43	133.00	369	7	These are incorrect! Should have 3 lecture, 3 lab and 2 HBA hours!
PHYS	**TOTAL**		**193**	**3.52**	**39.05**	**1171.80**	**333**		

FALL 2008			CENSUS	FTE	FTES	WSCH	LOAD	
PHYS	100 AA	82795	43	0.2	5.73	172.00	860	4
PHYS	150 AA	86456	19	0.41	4.43	133.00	327	7
PHYS	210 AX	82797	27	0.36	6.3	189.00	525	7
PHYS	210 BX	83388	23	0.16	5.37	161.00	1006	7
PHYS	211 AA	85472	18	0.07	0.6	18.00	270	1
PHYS	220 AA	91009	11	0.36	2.57	77.00	214	7
PHYS	221 AA	91010	2	0.07	0.07	2.00	30	1
PHYS	250 AA	82799	22	0.43	6.6	198.00	464	9
PHYS	260 AA	82800	16	0.36	4.27	128.00	356	8
PHYS	270 AA	82801	12	0.36	3.2	96.00	267	8
PHYS			**193**	**2.78**	**39.14**	**1174.00**	**422**	

PRING 2009			CENSUS	FTE	FTES	WSCH	LOAD		**Semester when new method of calculating WSCH generated by HBAs was implemented. Explains 0.2's and 0.5's.**
PHYS	100 AA	32653	31	0.20	4.34	130.20	651	4.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	150 AA	36456	17	0.36	4.08	122.40	340	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	150 BA	37067	25	0.36	6.00	180.00	500	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	210 AA	40804	28	0.36	6.72	201.60	560	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	211 AA	40808	6	0.07	0.20	6.00	90	1	
PHYS	220 AA	32655	22	0.36	5.28	158.40	440	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	221 AA	35262	13	0.07	0.43	13.00	195	1	
PHYS	250 AX	32656	12	0.43	3.80	114.00	267	9.5	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.5 coming from???
PHYS	250 BX	37512	22	0.23	6.97	209.00	922	9.5	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.5 coming from???
PHYS	260 AA	32657	17	0.36	4.08	122.40	340	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	270 AA	34041	16	0.41	3.84	115.20	283	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	680MA AA	42318	1	0.07	0.00	0.00	0	0	WSCH of zero????
TOTAL			**210**	**3.26**	**45.74**	**1372.20**	**421**		

WSCH, FTEF, FTES and LOAD provided by PRIE

FALL 2009			CENSUS	FTE	FTES	WSCH	LOAD	WSCH/Census	Notes
PHYS	100 AA	82795	57	0.20	7.98	239.40	1197	4.2	Checking the Schedule of Classes - Class does have extra minutes so where is the 0.2 coming from???
PHYS	126 AA	92600	3	0.07	0.00	0.00	0	0	WSCH of zero????
PHYS	128 AA	92601	1	0.03	0.00	0.00	0	0	WSCH of zero????
PHYS	150 AA	86456	30	0.36	7.20	216.00	600	7.2	Checking the Schedule of Classes - Class does have extra minutes so where is the 0.2 coming from???
PHYS	210 AX	82797	15	0.45	3.75	112.50	252	7.5	Checking the Schedule of Classes - Lab meets for 3.3 contact hours per week (FLEX DAYS!) - should be 7.3!
PHYS	210 BX	83388	12	0.16	3.00	90.00	563	7.5	Checking the Schedule of Classes - Lab meets for 3.3 contact hours per week (FLEX DAYS!) - should be 7.3!
PHYS	210 CA	92649	19	0.36	4.75	142.50	396	7.5	Checking the Schedule of Classes - Lab meets for 3.3 contact hours per week (FLEX DAYS!) - should be 7.3!
PHYS	211 AA	85472	17	0.07	0.57	17.00	255	1	
PHYS	250 AX	82799	18	0.43	5.88	176.40	413	9.8	Checking the Schedule of Classes - Lab meets for 3.3 contact hours per week (FLEX DAYS!) - should be 9.3!
PHYS	250 BX	85703	15	0.23	4.90	147.00	648	9.8	Checking the Schedule of Classes - Lab meets for 3.3 contact hours per week (FLEX DAYS!) - should be 9.3!
PHYS	260 AA	82800	20	0.41	5.67	170.00	418	8.5	Checking the Schedule of Classes - Class does have extra minutes so where is the 0.5 coming from???
PHYS	270 AA	82801	16	0.36	4.53	136.00	378	8.5	Checking the Schedule of Classes - Class does have extra minutes so where is the 0.5 coming from???
PHYS			**223**	**3.11**	**48.23**	**1446.80**	**465**		

PRING 2010			CENSUS	FTE	FTES	WSCH	LOAD		
PHYS	100 AA	32653	44	0.20	6.16	184.80	924	4.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	126 AA	42710	1	0.00	0.00	0.00	0	0	WSCH of zero????
PHYS	127 AA	42577	1	0.07	0.00	0.00	0	0	WSCH of zero????
PHYS	150 AA	36456	25	0.36	6.00	180.00	500	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	150 BA	37067	20	0.51	4.80	144.00	283	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	210 AA	40804	24	0.36	5.76	172.80	480	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	211 AA	40808	7	0.07	0.23	7.00	105	1	
PHYS	220 AA	32655	23	0.36	5.52	165.60	460	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	221 AA	35262	10	0.07	0.33	10.00	150	1	
PHYS	250 AX	32656	18	0.43	5.70	171.00	401	9.5	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.5 coming from???
PHYS	250 BX	37512	12	0.31	3.80	114.00	362	9.5	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.5 coming from???
PHYS	260 AA	32657	25	0.36	6.00	180.00	500	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS	270 AA	34041	21	0.36	5.04	151.20	420	7.2	Checking the Schedule of Classes - No classes have extra minutes so where is the 0.2 coming from???
PHYS			**231**	**3.45**	**49.35**	**1480.40**	**429**		

FALL 2010			CENSUS	FTE	FTES	WSCH	LOAD	
PHYS	100 AA	82795	60	0.20	8.40	252.00	1260	4.2
PHYS	126 AX	92600	2	0.07	0.00	0.00	0	0
PHYS	127 AX	92814	0	0.00	0.00	0.00	0	
PHYS	128 AX	92601	1	0.00	0.00	0.00	0	0
PHYS	150 AA	86456	22	0.36	5.28	158.40	440	7.2
PHYS	150 AB	90410	31	0.36	7.44	223.20	620	7.2
PHYS	210 AX	82797	24	0.40	5.76	172.80	428	7.2
PHYS	210 BX	83388	18	0.16	4.32	129.60	810	7.2
PHYS	211 AA	85472	14	0.07	0.47	14.00	210	1
PHYS	250 AX	82799	22	0.43	6.97	209.00	490	9.5
PHYS	250 BX	85703	15	0.23	4.75	142.50	629	9.5
PHYS	260 AA	82800	9	0.62	2.55	76.50	123	8.5
PHYS	270 AA	82801	24	0.36	6.80	204.00	567	8.5
PHYS	690 AA	83780	0	0.00	0.00	0.00	0	
PHYS	690 BB	83781	0	0.00	0.00	0.00	0	
PHYS	690 CC	92960	0	0.00	0.00	0.00	0	
PHYS			**242**	**3.25**	**52.73**	**1582.00**	**486**	

WSCH, FTEF, FTES and LOAD provided by PRIE

PRING 2011			CENSUS	FTE	FTES	WSCH	LOAD	WSCH/Census	Notes
PHYS	100 AA	32653	57	0.20	7.98	239.40	1197	4.2	
PHYS	126 AX	42710	2	0.07	0.04	1.10	16	0.54855	
PHYS	127 AX	42577	2	0.00	0.04	1.10	0	0.54855	
PHYS	128 AX	43103	1	0.00	0.04	1.17	0	1.1658	
PHYS	150 AA	36456	25	0.58	10.17	305.00	524	12.2	
PHYS	150 BA	37067	22	0.36	5.28	158.40	440	7.2	
PHYS	210 AA	40804	32	0.36	7.68	230.40	640	7.2	
PHYS	211 AA	40808	10	0.07	0.33	10.00	150	1	
PHYS	220 AA	32655	8	0.38	2.05	61.60	161	7.7	
PHYS	221 AA	35262	7	0.07	0.23	7.00	105	1	
PHYS	250 AX	32656	11	0.43	3.48	104.50	245	9.5	
PHYS	250 BX	37512	16	0.23	5.07	152.00	670	9.5	
PHYS	260 AA	32657	9	0.36	2.55	76.50	213	8.5	
PHYS	270 AA	34041	7	0.36	1.98	59.50	165	8.5	
PHYS			209	3.46	46.92	1407.66	407		

Physics FTEF, FTES, WSCH, and LOAD for courses and semester totals not including FTEF assigned to the ISC or Phys 126, 127 and 128

							Traditional Accounting		New Accounting	
FALL 2006			**CENSUS**	**FLC**	**FTE**	**FTES**	**WSCH**	**LOAD**	**WSCH**	**LOAD**
PHYS	100 AA	82795	23	3	0.2	3.0667	92.00	460	96.60	483
PHYS	150 AA	86456	9	5.4	0.36	2.1	63.00	175	64.80	180
PHYS	150 AB	90410	19	5.4	0.36	4.4333	133.00	369	136.80	380
PHYS	210 AX	82797	22				154.00		158.40	
PHYS	210 BX	83388	17				119.00		122.40	
PHYS	**210 AX/BX**		**39**	**7.80**	**0.52**	**9.1**	**273.00**	**525**	**280.80**	**540**
PHYS	211 AA	85472	13	1	0.0667	0.4333	13.00	195	13.00	195
PHYS	250 AA	82799	13	6.4	0.4267	3.9	117.00	274	123.50	289
PHYS	250 AB	85703	17	6.4	0.4267	5.1	153.00	359	161.50	379
PHYS	**250 Tot**		**30**	**12.80**	**0.8533**	**9**	**270.00**	**316**	**285.00**	**334**
PHYS	260 AA	82800	20	5.4	0.36	5.3333	160.00	444	170.00	472
PHYS	270 AA	82801	21	5.4	0.36	5.6	168.00	467	178.50	496
PHYS			**174**	**46.20**	**3.08**	**39.07**	**1172**	**381**	**1225.5**	**398**

SPRING 2007			**CENSUS**	**FLC**	**FTE**	**FTES**	**WSCH**	**LOAD**	**WSCH**	**LOAD**
PHYS	100 AA	32653	36	3	0.2	4.8	144.00	720	151.20	756
PHYS	150 AA	36456	22	5.4	0.36	5.1333	154.00	428	158.40	440
PHYS	150 BA	37067	12	5.4	0.36	2.96	88.80	247	91.20	253
PHYS	210 AA	40804	18	5.4	0.36	4.2	126.00	350	129.60	360
PHYS	211 AA	40808	5	1	0.0667	0.1667	5.00	75	5.00	75
PHYS	220 AA	32655	18	5.4	0.36	4.2	126.00	350	129.60	360
PHYS	221 AA	35262	8	1	0.0667	0.2667	8.00	120	8.00	120
PHYS	250 AA	32656	23	6.4	0.4267	6.9	207.00	485	218.50	512
PHYS	250 CA	37512	12	6.4	0.4267	3.6	108.00	253	114.00	267
PHYS	**250 Tot**		**35**	**12.80**	**0.8533**	**10.5**	**315.00**	**369**	**332.50**	**390**
PHYS	260 AA	32657	16	5.4	0.36	4.2667	128.00	356	136.00	378
PHYS	270 AA	34041	13	5.4	0.36	3.4667	104.00	289	110.50	307
PHYS			**183**	**50.2**	**3.3467**	**39.96**	**1198.8**	**358**	**1252**	**374**

FALL 2007			**CENSUS**	**FLC**	**FTE**	**FTES**	**WSCH**	**LOAD**	**WSCH**	**LOAD**
PHYS	100 AA	82795	44	3	0.2	5.8667	176.00	880	184.80	924
PHYS	101 AA	91106	15	2.40	0.16	1.65	49.50	309	49.50	309
PHYS	150 AA	86456	7	5.4	0.36	1.6333	49.00	136	50.40	140
PHYS	150 AB	90410	17	5.4	0.36	3.9667	119.00	331	122.40	340
PHYS	210 AX	82797	25				175.00		180.00	
PHYS	210 BX	83388	23				161.00		165.60	
PHYS	**210 AX/BX**		**48**	**7.80**	**0.52**	**11.2**	**336.00**	**646**	**345.60**	**665**
PHYS	211 AA	85472	13	1	0.0667	0.4333	13.00	195	13.00	195
PHYS	220 AA	91009	10	5.4	0.36	2.6667	80.00	222	72.00	200
PHYS	221 AA	91010	3	1	0.0667	0.1	3.00	45	3.00	45
PHYS	250 AA	82799	15	6.4	0.4267	4.5	135.00	316	142.50	334
PHYS	250 AB	85703	6	6.4	0.4267	1.8	54.00	127	57.00	134
PHYS	**250 Tot**		**21**	**12.80**	**0.8533**	**6.3**	**189.00**	**221**	**199.50**	**234**
PHYS	260 AA	82800	12	5.4	0.36	3.2	96.00	267	102.00	283
PHYS	270 AA	82801	17	5.4	0.36	4.5333	136.00	378	144.50	401
PHYS	**TOTAL**		**207**	**55.00**	**3.6667**	**41.55**	**1246.5**	**340**	**1286.7**	**351**

Physics FTEF, FTES, WSCH, and LOAD for courses and semester totals not including FTEF assigned to the ISC or Phys 126, 127 and 128

							Traditional Accounting		New Accounting	
PRING 2008			**CENSUS**	**FLC**	**FTE**	**FTES**	**WSCH**	**LOAD**	**WSCH**	**LOAD**
PHYS	100 AA	32653	42	3	0.2	5.6	168.00	840	176.40	882
PHYS	101 AA	41322	17	2.40	0.16	1.87	56.10	351	56.10	351
PHYS	150 AA	36456	16	5.4	0.36	3.7333	112.00	311	115.20	320
PHYS	150 BA	37067	14	5.4	0.36	3.4533	103.60	288	106.40	296
PHYS	210 AA	40804	22	5.4	0.36	5.1333	154.00	428	158.40	440
PHYS	211 AA	40808	7	1	0.0667	0.2333	7.00	105	7.00	105
PHYS	220 AA	32655	14	5.4	0.36	3.2667	98.00	272	100.80	280
PHYS	221 AA	35262	2	1	0.0667	0.0667	2.00	30	2.00	30
PHYS	250 AA	32656	8	6.4	0.4267	2.4	72.00	169	76.00	178
PHYS	250 CA	37512	16	6.4	0.4267	4.8	144.00	338	152.00	356
PHYS	**250 Tot**		**24**	**12.80**	**0.8533**	**7.2**	**216.00**	**253**	**228.00**	**267**
PHYS	260 AA	32657	16	5.4	0.36	4.2667	128.00	356	136.00	378
PHYS	270 AA	34041	19	5.4	0.36	5.0667	152.00	422	161.50	449
PHYS	**TOTAL**		**193**	**52.60**	**3.5067**	**39.89**	**1196.70**	**341**	**1247.80**	**356**

FALL 2008			**CENSUS**	**FLC**	**FTE**	**FTES**	**WSCH**	**LOAD**	**WSCH**	**LOAD**
PHYS	100 AA	82795	43	3	0.2	5.7333	172.00	860	180.60	903
PHYS	150 AA	86456	19	5.4	0.36	4.4333	133.00	369	136.80	380
PHYS	210 AX	82797	27				189.00		194.40	
PHYS	210 BX	83388	23				161.00		165.60	
PHYS	**210 AX/BX**		**50**	**7.80**	**0.52**	**11.667**	**350.00**	**673**	**360.00**	**692**
PHYS	211 AA	85472	18	1	0.0667	0.6	18.00	270	18.00	270
PHYS	220 AA	91009	11	5.4	0.36	2.5667	77.00	214	79.20	220
PHYS	221 AA	91010	2	1	0.0667	0.0667	2.00	30	2.00	30
PHYS	250 AA	82799	22	6.4	0.4267	6.6	198.00	464	209.00	490
PHYS	260 AA	82800	16	5.4	0.36	4.2667	128.00	356	136.00	378
PHYS	270 AA	82801	12	5.4	0.36	3.2	96.00	267	102.00	283
PHYS			**193**	**40.80**	**2.72**	**27.467**	**1174.00**	**432**	**1223.60**	**450**

PRING 2009			**CENSUS**	**FLC**	**FTE**	**FTES**	**WSCH**	**LOAD**	**WSCH**	**LOAD**
PHYS	100 AA	32653	31	3	0.2	4.1333	124.00	620	130.20	651
PHYS	150 AA	36456	17	5.4	0.36	3.9667	119.00	331	122.40	340
PHYS	150 BA	37067	25	5.4	0.36	5.8333	175.00	486	180.00	500
PHYS	210 AA	40804	28	5.4	0.36	6.5333	196.00	544	201.60	560
PHYS	211 AA	40808	6	1	0.0667	0.2	6.00	90	6.00	90
PHYS	220 AA	32655	22	5.4	0.36	5.1333	154.00	428	158.40	440
PHYS	221 AA	35262	13	1	0.0667	0.4333	13.00	195	13.00	195
PHYS	250 AX	32656	12				108.00		114.00	
PHYS	250 BX	37512	22				198.00		209.00	
PHYS	**250 Tot**		**34**	**9.80**	**0.6533**	**10.2**	**306.00**	**468**	**323.00**	**494**
PHYS	260 AA	32657	17	5.4	0.36	4.5333	136.00	378	144.50	401
PHYS	270 AA	34041	16	5.4	0.36	4.2667	128.00	356	136.00	378
PHYS			**209**	**47.2**	**3.1467**	**45.233**	**1357**	**431**	**1415.1**	**450**

FALL 2009			**CENSUS**	**FLC**	**FTE**	**FTES**	**WSCH**	**LOAD**	**WSCH**	**LOAD**
PHYS	100 AA	82795	57	3	0.2	7.6	228.00	1140	239.40	1197
PHYS	150 AA	86456	30	5.4	0.36	7	210.00	583	216.00	600
PHYS	210 AX	82797	15				109.50		112.50	
PHYS	210 BX	83388	12				87.60		90.00	
PHYS	210 CA	92649	19				138.70		142.50	
PHYS	**210 Tot**		**46**	**13.20**	**0.88**	**11.193**	**335.80**	**382**	**345.00**	**392**
PHYS	211 AA	85472	17	1	0.0667	0.5667	17.00	255	17.00	255
PHYS	250 AX	82799	18				167.40		176.40	
PHYS	250 BX	85703	15				139.50		147.00	
PHYS	**250 Tot**		**33**	**9.80**	**0.6533**	**10.23**	**306.90**	**470**	**323.40**	**495**
PHYS	260 AA	82800	20	5.4	0.36	5.3333	160.00	444	170.00	472
PHYS	270 AA	82801	16	5.4	0.36	4.2667	128.00	356	136.00	378
PHYS			**265**	**43.20**	**2.88**	**46.19**	**1385.70**	**481**	**1446.80**	**502**

Physics FTEF, FTES, WSCH, and LOAD for courses and semester totals not including FTEF assigned to the ISC or Phys 126, 127 and 128

							Traditional Accounting		New Accounting	
PRING 2010			**CENSUS**	**FLC**	**FTE**	**FTES**	**WSCH**	**LOAD**	**WSCH**	**LOAD**
PHYS	100 AA	32653	44	3	0.2	5.8667	176.00	880	184.80	924
PHYS	150 AA	36456	25	5.4	0.36	5.8333	175.00	486	180.00	500
PHYS	150 BA	37067	20	5.4	0.36	4.6667	140.00	389	144.00	400
PHYS	210 AA	40804	24	5.4	0.36	5.6	168.00	467	172.80	480
PHYS	211 AA	40808	7	1	0.0667	0.2333	7.00	105	7.00	105
PHYS	220 AA	32655	23	5.4	0.36	5.3667	161.00	447	165.60	460
PHYS	221 AA	35262	10	1	0.0667	0.3333	10.00	150	10.00	150
PHYS	250 AX	32656	18				162.00		171.00	
PHYS	250 BX	37512	12				108.00		114.00	
PHYS	**250 Tot**		**30**	**9.80**	**0.6533**	**9**	**270.00**	**413**	**285.00**	**436**
PHYS	260 AA	32657	25	5.4	0.36	6.6667	200.00	556	212.50	590
PHYS	270 AA	34041	21	5.4	0.36	5.6	168.00	467	178.50	496
PHYS			**229**	**47.2**	**3.1467**	**49.167**	**1475**	**469**	**1540.20**	**489**

FALL 2010			**CENSUS**	**FLC**	**FTE**	**FTES**	**WSCH**	**LOAD**	**WSCH**	**LOAD**
PHYS	100 AA	82795	60	3.00	0.20	8.00	240.00	1200	252.00	1260
PHYS	150 AA	86456	22	5.40	0.36	5.13	154.00	428	158.40	440
PHYS	150 AB	90410	31	5.40	0.36	7.23	217.00	603	223.20	620
PHYS	210 AX	82797	24				168.00		172.80	
PHYS	210 BX	83388	18				126.00		129.60	
PHYS	**210 AX/BX**		**42**	**7.80**	**0.52**	**9.8**	**294.00**	**565**	**302.40**	**582**
PHYS	211 AA	85472	14	1.00	0.07	0.47	14.00	210	14.00	210
PHYS	250 AX	82799	22				198.00		209.00	
PHYS	250 BX	85703	15				135.00		142.50	
PHYS	**250 Tot**		**37**	**9.80**	**0.6533**	**11.1**	**333.00**	**510**	**351.50**	**538**
PHYS	260 AA	82800	9	5.40	0.36	2.40	72.00	200	76.50	213
PHYS	270 AA	82801	24	5.40	0.36	6.40	192.00	533	204.00	567
PHYS			**239**	**43.2**	**2.88**	**50.533**	**1516.00**	**526**	**1582.00**	**549**

PRING 2011			**CENSUS**	**FLC**	**FTE**	**FTES**	**WSCH**	**LOAD**	**WSCH**	**LOAD**
PHYS	100 AA	32653	57	3	0.2	7.6	228.00	1140	239.40	1197
PHYS	150 AA	36456	25	5.4	0.36	5.8333	175.00	486	180.00	500
PHYS	150 BA	37067	22	5.4	0.36	5.1333	154.00	428	158.40	440
PHYS	210 AA	40804	32	5.4	0.36	7.4667	224.00	622	230.40	640
PHYS	211 AA	40808	10	1	0.0667	0.3333	10.00	150	10.00	150
PHYS	220 AA	32655	8	5.4	0.36	1.8667	56.00	156	57.60	160
PHYS	221 AA	35262	7	1	0.0667	0.2333	7.00	105	7.00	105
PHYS	250 AX	32656	11				99.00		104.50	
PHYS	250 BX	37512	16				144.00		152.00	
PHYS	**250 Tot**		**27**	**9.80**	**0.6533**	**8.1**	**243.00**	**372**	**256.50**	**393**
PHYS	260 AA	32657	9	5.4	0.36	2.4	72.00	200	76.50	213
PHYS	270 AA	34041	7	5.4	0.36	1.8667	56.00	156	59.50	165
PHYS			**209**	**47.2**	**3.1467**	**40.833**	**1225**	**389**	**1275.30**	**405**