



2015

Annual Program Review

Sciences

(Astronomy, Biology, Chemistry,
Geology, Marine Science, Physics)

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Section 1: Program Planning:

Internal Analysis: Astronomy

Enrollment and FTES:

The increases in enrollment and FTEs from 2012-2014 are due to ASTR100 being offered both online and as a hybrid course and the increased numbers of incarcerated students taking the ASTR100 telecourse.

Efficiency (FTEF/30 and fill rates):

The decrease in fill rates from 2012-2014 is due to the increased cap for the hybrid and telecourse offerings for ASTR100.

Student Demographics:

The student demographics have not changed dramatically from 2012-2014 except for the following: there is a larger percentage of African-Americans and students with ages over 50. It is not clear what caused this jump, however they may be related to the increased cap for the Telecourse offering.

Success:

The success rate dropped from 73% in 2011-2012 to 41% in 2012-2013, and then increased to 51% in 2013-2014. These changes may be related to the addition of an 8-week online section and the increased cap for the Telecourse offerings for ASTR100.

Retention:

The retention rate has remained relatively constant from 2012-2014.

Persistence in Subject:

n/a (ASTR100 was the only course offered during this time frame).

Awards (Degrees and Certificates):

n/a

Table 1.1 Program Review Data for Astronomy

Academic Year	2011-12	2012-13	2013-14
ENROLLMENT	232	262	651
FTES:	24	27	57
FTEF30:	0.5	0.6	1.1
WSCH/FTEF:	825	694	895
Fill Rates:	87.3%	75.3%	69.9%
FALL TO SPRING PERSISTENCE WITHIN SUBJECT			
Fall-to-Spring:	0	0	0
F-to-S Persistence:	0%	0%	0%
DEGREES AND CERTIFICATES			
Certificates:	0	0	0
Associate Degrees:	n/a	n/a	n/a
STUDENT DEMOGRAPHICS			
GENDER			
Female:	59.9%	49.6%	28.0%
Male:	38.4%	48.9%	71.7%
Unknown:	1.7%	1.5%	.3%
AGE at TERM			
Less than 19	18.5%	20.6%	6.5%
20 to 24	29.7%	38.5%	24.5%
25 to 29	19.0%	14.5%	18.6%
30 to 34	11.2%	9.9%	14.2%
35 to 39	6.9%	5.7%	9.1%
40 to 49	9.5%	5.3%	17.1%
50 and Older	5.2%	5.3%	10.2%
RACE/ETHNICITY			
African American:	4.7%	2.7%	11.8%
Asian/Pac Islander:	15.1%	19.1%	7.2%
Hispanic:	14.9%	14.9%	24.2%
Multiple Race:	20.7%	16.0%	6.5%
White:	45.7%	37.0%	45.4%
Unknown:	3.4%	10.3%	4.9%

Table 1.2 Program Review Data for Astronomy by Modality

Academic Year	2011-12	2012-13	2013-14
Total SUBJECT Enrollment	232	262	651
- Success Rate	73.2%	41.2%	50.5%
- Retention Rate	84.5%	74.4%	74.8%
SUBJECT ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Correspondence Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Hybrid Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Online Enrollment	206	159	238
- Success Rate	70.9%	35.8%	39.9%
- Retention Rate	83.0%	69.8%	60.9%
Telecourse Enrollment	---	---	391
- Success Rate	0.0%	0.0%	57.3%
- Retention Rate	0.0%	0.0%	83.4%
Traditional Enrollment	26	103	22
- Success Rate	92.3%	49.5%	45.5%
- Retention Rate	96.2%	81.6%	72.7%
COLLEGE ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	875	558	766
- Success Rate	58.4%	57.7%	50.5%
- Retention Rate	86.7%	79.7%	75.7%
Correspondence Enrollment	453	524	813
- Success Rate	56.5%	67.2%	77.6%
- Retention Rate	89.0%	81.5%	89.7%
Hybrid Enrollment	1,245	689	627
- Success Rate	72.9%	72.3%	66.2%
- Retention Rate	89.6%	89.8%	84.4%
Online Enrollment	23,260	22,827	25,551
- Success Rate	64.3%	62.0%	62.9%
- Retention Rate	87.0%	82.2%	81.2%
Telecourse Enrollment	10,657	9,664	15,993
- Success Rate	57.3%	53.7%	55.3%
- Retention Rate	87.8%	80.5%	82.8%
Traditional Enrollment	14,712	12,345	10,517
- Success Rate	81.9%	77.0%	77.6%
- Retention Rate	93.0%	90.1%	88.5%

Internal Analysis: **Biology**

Enrollment and FTES:

Enrollment and FTES were steady from 2011-2014, averaging 3600 and 475 respectively.

Efficiency (FTEF/30 and fill rates):

FTEF/30 has remained steady at ~12, and fill rates have remained steady at ~ 85%.

Student Demographics:

No significant changes from 2012-2014. Approximately 75% of the students are less than 30 years old.

Success:

Success rate has remained steady (~75%).

Retention:

Retention rate has remained steady (~90%).

Persistence in Subject:

Fall to Spring persistence rate has remained steady (~20%). The majority of students are not required to take multiple courses within Biology.

Awards (Degrees and Certificates):

Health Science Certificate-first awarded Spring 2015

ADT for Biology submitted 2014

Table 1.3 Program Review Data for Biology

Academic Year	2011-12	2012-13	2013-14
ENROLLMENT	3,691	3,476	3,637
FTES:	493	463	476
FTEF30:	11.8	11.7	12.1
WSCH/FTEF:	685	648	643
Fill Rates:	87.2%	87.3%	83.7%
FALL TO SPRING PERSISTENCE WITHIN SUBJECT			
Fall-to-Spring:	170	164	168
F-to-S Persistence:	19%	19%	22%
DEGREES AND CERTIFICATES			
Certificates:	0	0	0
Associate Degrees:	n/a	n/a	n/a
STUDENT DEMOGRAPHICS			
GENDER			
Female:	60.1%	57.4%	57.0%
Male:	38.7%	41.4%	41.8%
Unknown:	1.2%	1.2%	1.2%
AGE at TERM			
Less than 19	9.5%	12.8%	10.3%
20 to 24	40.9%	37.8%	36.1%
25 to 29	19.8%	18.2%	20.2%
30 to 34	10.8%	11.5%	11.2%
35 to 39	7.2%	6.6%	6.7%
40 to 49	8.0%	8.1%	9.7%
50 and Older	3.8%	5.0%	5.8%
RACE/ETHNICITY			
African American:	6.9%	7.0%	8.3%
Asian/Pac Islander:	33.5%	35.2%	34.0%
Hispanic:	11.4%	11.4%	16.3%
Multiple Race:	9.4%	10.6%	7.2%
White:	33.5%	27.4%	28.4%
Unknown:	4.4%	8.5%	5.8%

Table 1.4 Program Review Data for Biology by Modality

Academic Year	2011-12	2012-13	2013-14
Total SUBJECT Enrollment	3,691	3,476	3,637
- Success Rate	77.8%	73.1%	73.0%
- Retention Rate	91.3%	88.1%	86.6%

SUBJECT ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Correspondence Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Hybrid Enrollment	136	40	15
- Success Rate	74.3%	85.0%	86.7%
- Retention Rate	83.1%	90.0%	93.3%
Online Enrollment	1,123	1,219	1,488
- Success Rate	84.9%	75.6%	73.5%
- Retention Rate	94.4%	92.5%	87.0%
Telecourse Enrollment	644	404	520
- Success Rate	58.1%	41.6%	49.0%
- Retention Rate	89.9%	78.7%	85.6%
Traditional Enrollment	1,788	1,813	1,614
- Success Rate	80.9%	78.2%	80.1%
- Retention Rate	90.5%	87.3%	86.5%

COLLEGE ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	875	558	766
- Success Rate	58.4%	57.7%	50.5%
- Retention Rate	86.7%	79.7%	75.7%
Correspondence Enrollment	453	524	813
- Success Rate	56.5%	67.2%	77.6%
- Retention Rate	89.0%	81.5%	89.7%
Hybrid Enrollment	1,245	689	627
- Success Rate	72.9%	72.3%	66.2%
- Retention Rate	89.6%	89.8%	84.4%
Online Enrollment	23,260	22,827	25,551
- Success Rate	64.3%	62.0%	62.9%
- Retention Rate	87.0%	82.2%	81.2%
Telecourse Enrollment	10,657	9,664	15,993
- Success Rate	57.3%	53.7%	55.3%
- Retention Rate	87.8%	80.5%	82.8%
Traditional Enrollment	14,712	12,345	10,517
- Success Rate	81.9%	77.0%	77.6%
- Retention Rate	93.0%	90.1%	88.5%

Internal Analysis: Chemistry

Enrollment and FTES:

Enrollment increased from 750 to 1384, and FTEs from 111 to 197 from 2012-2014. These significant increases are due to offering Organic Chemistry sequence and increasing sections of CHEM 130 and CHEM 110.

Efficiency (FTEF/30 and fill rates):

FTEF/30 have nearly doubled from 2012-2014, rising from 3.4 to 6.5. This trend will most likely continue due to the Allied Health and STAR programs. Fill rates have remained steady at about 90%, in spite of the additional offerings described above.

Student Demographics:

No significant changes during 2012-2014.

Success:

Student success has remained high (~ 80%) and stable from 2012-2014.

Retention:

Retention has remained high (~ 90%) and stable.

Persistence in Subject:

Persistence has remained low (~ 10%) and stable, most likely due to the high success rate couple with the majority of students only having to take one course in Chemistry.

Awards (Degrees and Certificates):

n/a Chemistry AS-T has been established, but has not been published yet. Preparatory Steps: 1) Align current CHEM 180 and 185 syllabi with C-ID course descriptors; 2) submit for C-ID approval.

Table 1.5 Program Review Data for Chemistry

Academic Year	2011-12	2012-13	2013-14
ENROLLMENT	752	973	1,387
FTES:	111	142	197
FTEF30:	3.4	4.3	6.5
WSCH/FTEF:	537	547	496
Fill Rates:	90.2%	88.4%	87.0%
FALL TO SPRING PERSISTENCE WITHIN SUBJECT			
Fall-to-Spring:	11	14	18
F-to-S Persistence:	8%	11%	14%
DEGREES AND CERTIFICATES			
Certificates:	0	0	0
Associate Degrees:	n/a	n/a	n/a
STUDENT DEMOGRAPHICS			
GENDER			
Female:	61.6%	59.5%	58.0%
Male:	36.6%	37.1%	41.0%
Unknown:	1.9%	3.4%	.9%
AGE at TERM			
Less than 19	15.6%	17.6%	15.7%
20 to 24	38.4%	35.4%	38.9%
25 to 29	23.4%	24.9%	25.5%
30 to 34	10.1%	10.4%	10.4%
35 to 39	5.3%	5.3%	4.0%
40 to 49	4.5%	4.8%	3.5%
50 and Older	2.7%	1.6%	1.9%
RACE/ETHNICITY			
African American:	3.6%	3.4%	2.9%
Asian/Pac Islander:	47.3%	47.5%	46.2%
Hispanic:	8.0%	8.0%	12.5%
Multiple Race:	9.8%	10.3%	7.7%
White:	25.7%	22.4%	24.9%
Unknown:	7.3%	8.4%	5.8%

Table 1.6 Program Review Data for Chemistry by Modality

Academic Year	2011-12	2012-13	2013-14
Total SUBJECT Enrollment	752	973	1,387
- Success Rate	87.3%	81.2%	82.5%
- Retention Rate	93.6%	89.0%	88.5%
SUBJECT ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Correspondence Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Hybrid Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Online Enrollment	309	389	412
- Success Rate	83.5%	75.8%	77.9%
- Retention Rate	95.1%	89.2%	88.8%
Telecourse Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Traditional Enrollment	443	584	975
- Success Rate	90.1%	84.8%	84.4%
- Retention Rate	92.6%	88.9%	88.4%
COLLEGE ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	875	558	766
- Success Rate	58.4%	57.7%	50.5%
- Retention Rate	86.7%	79.7%	75.7%
Correspondence Enrollment	453	524	813
- Success Rate	56.5%	67.2%	77.6%
- Retention Rate	89.0%	81.5%	89.7%
Hybrid Enrollment	1,245	689	627
- Success Rate	72.9%	72.3%	66.2%
- Retention Rate	89.6%	89.8%	84.4%
Online Enrollment	23,260	22,827	25,551
- Success Rate	64.3%	62.0%	62.9%
- Retention Rate	87.0%	82.2%	81.2%
Telecourse Enrollment	10,657	9,664	15,993
- Success Rate	57.3%	53.7%	55.3%
- Retention Rate	87.8%	80.5%	82.8%
Traditional Enrollment	14,712	12,345	10,517
- Success Rate	81.9%	77.0%	77.6%
- Retention Rate	93.0%	90.1%	88.5%

Internal Analysis: **Ecology** (Note: Ecology is not being offered at this time).

Enrollment and FTES:

n/a (no longer being taught)

Efficiency (FTEF/30 and fill rates):

n/a

Student Demographics:

n/a

Success:

n/a

Retention:

n/a

Persistence in Subject:

n/a

Awards (Degrees and Certificates):

n/a

Table 1.7 Program Review Data for Ecology

Academic Year	2011-12	2012-13	2013-14
ENROLLMENT	114	0	0
FTES:	11	0	0
FTEF30:	0.2	0.0	0.0
WSCH/FTEF:	1,159	n/a	n/a
Fill Rates:	81.5%	n/a	n/a
FALL TO SPRING PERSISTENCE WITHIN SUBJECT			
Fall-to-Spring:	One Term	n/a	n/a
F-to-S Persistence:		n/a	n/a
DEGREES AND CERTIFICATES			
Certificates:	0	0	0
Associate Degrees:	n/a	n/a	n/a
STUDENT DEMOGRAPHICS			
GENDER			
Female:	20.2%	.0%	.0%
Male:	78.1%	.0%	.0%
Unknown:	1.8%	.0%	.0%
AGE at TERM			
Less than 19	2.6%	.0%	.0%
20 to 24	29.8%	.0%	.0%
25 to 29	15.8%	.0%	.0%
30 to 34	13.2%	.0%	.0%
35 to 39	10.5%	.0%	.0%
40 to 49	19.3%	.0%	.0%
50 and Older	8.8%	.0%	.0%
RACE/ETHNICITY			
African American:	13.2%	.0%	.0%
Asian/Pac Islander:	15.8%	.0%	.0%
Hispanic:	.0%	.0%	.0%
Multiple Race:	6.1%	.0%	.0%
White:	44.7%	.0%	.0%
Unknown:	5.3%	.0%	.0%

Table 1.8 Program Review Data for Ecology by Modality

Academic Year	2011-12	2012-13	2013-14
Total SUBJECT Enrollment	114	---	---
- Success Rate	59.6%	0.0%	0.0%
- Retention Rate	93.0%	0.0%	0.0%
SUBJECT ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Correspondence Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Hybrid Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Online Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Telecourse Enrollment	114	---	---
- Success Rate	59.6%	0.0%	0.0%
- Retention Rate	93.0%	0.0%	0.0%
Traditional Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
COLLEGE ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	875	558	766
- Success Rate	58.4%	57.7%	50.5%
- Retention Rate	86.7%	79.7%	75.7%
Correspondence Enrollment	453	524	813
- Success Rate	56.5%	67.2%	77.6%
- Retention Rate	89.0%	81.5%	89.7%
Hybrid Enrollment	1,245	689	627
- Success Rate	72.9%	72.3%	66.2%
- Retention Rate	89.6%	89.8%	84.4%
Online Enrollment	23,260	22,827	25,551
- Success Rate	64.3%	62.0%	62.9%
- Retention Rate	87.0%	82.2%	81.2%
Telecourse Enrollment	10,657	9,664	15,993
- Success Rate	57.3%	53.7%	55.3%
- Retention Rate	87.8%	80.5%	82.8%
Traditional Enrollment	14,712	12,345	10,517
- Success Rate	81.9%	77.0%	77.6%
- Retention Rate	93.0%	90.1%	88.5%

Internal Analysis: **Geology**

Enrollment and FTES:

Enrollments are strong, most geology courses have a wait list and many students who have taken the lecture portion also take the lab.

Efficiency (FTEF/30 and fill rates):

FTEF/30 remained steady at ~ 2.0 over the last three years. Fill rates have also remained relatively steady during this period, averaging 80%.

Student Demographics:

No significant changes during this period.

Success:

Success rates are slightly lower than the College average. Lower success rates primarily due to the Telecourses that contain a large number of incarcerated students and the associated delays in correspondence, feedback, and grade changes.

Retention:

Retention rates are steady, and close to the college averages (~ 60%)

Persistence in Subject:

Low (~10%) as most students are only required to take one course in Geology.

Awards (Degrees and Certificates):

ADT for Geology approved by the State 2015.

Table 1.9 Program Review Data for Geology

Academic Year	2011-12	2012-13	2013-14
ENROLLMENT	1,074	1,151	1,283
FTES:	94	99	111
FTEF30:	1.8	1.6	2.2
WSCH/FTEF:	860	1,020	850
Fill Rates:	83.6%	89.2%	74.0%
FALL TO SPRING PERSISTENCE WITHIN SUBJECT			
Fall-to-Spring:	9	7	11
F-to-S Persistence:	3%	3%	6%
DEGREES AND CERTIFICATES			
Certificates:	0	0	0
Associate Degrees:	n/a	n/a	n/a
STUDENT DEMOGRAPHICS			
GENDER			
Female:	47.0%	40.4%	40.3%
Male:	51.9%	58.1%	58.7%
Unknown:	1.1%	1.5%	1.0%
AGE at TERM			
Less than 19	11.5%	10.6%	8.5%
20 to 24	27.0%	27.7%	23.6%
25 to 29	17.2%	20.6%	18.0%
30 to 34	13.6%	13.1%	16.2%
35 to 39	9.4%	9.7%	10.9%
40 to 49	14.8%	12.1%	14.1%
50 and Older	6.5%	6.2%	8.7%
RACE/ETHNICITY			
African American:	9.7%	10.1%	11.2%
Asian/Pac Islander:	14.8%	13.8%	11.9%
Hispanic:	17.1%	17.1%	20.2%
Multiple Race:	13.3%	10.3%	8.2%
White:	42.5%	41.2%	42.6%
Unknown:	5.6%	7.6%	5.9%

Table 1.10 Program Review Data for Geology by Modality

Academic Year	2011-12	2012-13	2013-14
Total SUBJECT Enrollment	1,074	1,151	1,283
- Success Rate	66.1%	58.4%	66.6%
- Retention Rate	91.2%	84.9%	85.5%

SUBJECT ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Correspondence Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Hybrid Enrollment	99	---	11
- Success Rate	67.7%	0.0%	90.9%
- Retention Rate	90.9%	0.0%	90.9%
Online Enrollment	653	734	761
- Success Rate	64.8%	59.4%	69.8%
- Retention Rate	90.8%	86.4%	86.3%
Telecourse Enrollment	322	417	511
- Success Rate	68.3%	56.6%	61.3%
- Retention Rate	92.2%	82.3%	84.1%
Traditional Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%

COLLEGE ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	875	558	766
- Success Rate	58.4%	57.7%	50.5%
- Retention Rate	86.7%	79.7%	75.7%
Correspondence Enrollment	453	524	813
- Success Rate	56.5%	67.2%	77.6%
- Retention Rate	89.0%	81.5%	89.7%
Hybrid Enrollment	1,245	689	627
- Success Rate	72.9%	72.3%	66.2%
- Retention Rate	89.6%	89.8%	84.4%
Online Enrollment	23,260	22,827	25,551
- Success Rate	64.3%	62.0%	62.9%
- Retention Rate	87.0%	82.2%	81.2%
Telecourse Enrollment	10,657	9,664	15,993
- Success Rate	57.3%	53.7%	55.3%
- Retention Rate	87.8%	80.5%	82.8%
Traditional Enrollment	14,712	12,345	10,517
- Success Rate	81.9%	77.0%	77.6%
- Retention Rate	93.0%	90.1%	88.5%

Internal Analysis: **Marine Science**

Enrollment and FTES:

Enrollment increased by about 20% (380 to 460). FTEs increased by the same relative amount (29 to 42).

Efficiency (FTEF/30 and fill rates):

FTEF/30 remained steady (~0.65). The fill rates dropped from ~95% to ~60% in 2013-2014. This is most likely related to the associated lab course which most students do not have to take.

Student Demographics:

Relatively stable during this time except for a slight increase in the number of students aged 50 and older in 2013-2014.

Success:

Stable at ~ 68%, which is about 10% above the college average.

Retention:

Stable at ~ 85%, which is about 10% above the college average

Persistence in Subject:

Low (~2%). Most students only take one course in Marine Sciences. A small percentage of students also take the associated lab.

Awards (Degrees and Certificates):

n/a

Table 1.11 Program Review Data for Marine Science

Academic Year	2011-12	2012-13	2013-14
ENROLLMENT	382	410	463
FTES:	29	31	42
FTEF30:	0.6	0.6	0.8
WSCH/FTEF:	818	936	865
Fill Rates:	101.6%	91.5%	66.2%
FALL TO SPRING PERSISTENCE WITHIN SUBJECT			
Fall-to-Spring:	2	2	6
F-to-S Persistence:	3%	2%	5%
DEGREES AND CERTIFICATES			
Certificates:	0	0	0
Associate Degrees:	n/a	n/a	n/a
STUDENT DEMOGRAPHICS			
GENDER			
Female:	47.6%	30.0%	21.2%
Male:	50.8%	70.0%	78.4%
Unknown:	1.6%	.0%	.4%
AGE at TERM			
Less than 19	9.9%	5.1%	7.4%
20 to 24	52.9%	30.7%	16.5%
25 to 29	8.4%	18.5%	16.5%
30 to 34	9.2%	16.1%	15.8%
35 to 39	5.2%	10.5%	14.7%
40 to 49	11.0%	14.6%	14.7%
50 and Older	3.4%	4.4%	14.5%
RACE/ETHNICITY			
African American:	5.8%	9.3%	13.6%
Asian/Pac Islander:	14.4%	12.4%	11.9%
Hispanic:	17.1%	17.1%	14.9%
Multiple Race:	13.9%	7.1%	3.9%
White:	46.9%	44.4%	49.4%
Unknown:	5.2%	9.8%	6.3%

Table 1.12 Program Review Data for Marine Science by Modality

Academic Year	2011-12	2012-13	2013-14
Total SUBJECT Enrollment	382	410	463
- Success Rate	73.0%	66.1%	63.1%
- Retention Rate	90.1%	84.6%	84.4%
SUBJECT ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Correspondence Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Hybrid Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Online Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Telecourse Enrollment	260	316	398
- Success Rate	71.2%	65.5%	64.1%
- Retention Rate	89.6%	84.5%	85.2%
Traditional Enrollment	122	94	65
- Success Rate	77.0%	68.1%	56.9%
- Retention Rate	91.0%	85.1%	80.0%
COLLEGE ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	875	558	766
- Success Rate	58.4%	57.7%	50.5%
- Retention Rate	86.7%	79.7%	75.7%
Correspondence Enrollment	453	524	813
- Success Rate	56.5%	67.2%	77.6%
- Retention Rate	89.0%	81.5%	89.7%
Hybrid Enrollment	1,245	689	627
- Success Rate	72.9%	72.3%	66.2%
- Retention Rate	89.6%	89.8%	84.4%
Online Enrollment	23,260	22,827	25,551
- Success Rate	64.3%	62.0%	62.9%
- Retention Rate	87.0%	82.2%	81.2%
Telecourse Enrollment	10,657	9,664	15,993
- Success Rate	57.3%	53.7%	55.3%
- Retention Rate	87.8%	80.5%	82.8%
Traditional Enrollment	14,712	12,345	10,517
- Success Rate	81.9%	77.0%	77.6%
- Retention Rate	93.0%	90.1%	88.5%

Internal Analysis: **Physics**

Enrollment and FTES:

The Enrollment and FTES have remained relatively steady. The anticipated increases in the numbers of STAR and Biology ADT students over the next few years will impact the Phys120/125 courses, and may result in a significant increase in the enrollment.

Efficiency (FTEF/30 and fill rates):

FTEF/30 has remained steady, at ~ 1.2. Fill rates have remained steady at ~ 85%.

Student Demographics:

No changes during this time. Approximately 80% of the students are 18-30.

Success:

Success rate has been steady, averaging ~ 77%, which is about 10% - 20% above the college average for similar modalities (hybrid and online).

Retention:

Retention rate has been steady, averaging ~ 85%.

Persistence in Subject:

Fall to Spring persistence has been steady, averaging ~ 10% relative to the total number of students. This is due primarily to the relatively small number of students who take the Phys120/125 sequence compared to the larger number of online students who take Phys110, which has follow-up course.

Awards (Degrees and Certificates):

n/a. The Physics AST program and the associated C-ID designations were approved in 2014-2015. The first offering of the associated Calculus-based Physics is scheduled for Spring 2016.

Table 1.13 Program Review Data for Physics

Academic Year	2011-12	2012-13	2013-14
ENROLLMENT	339	311	363
FTES:	41	35	40
FTEF30:	1.4	1.2	1.2
WSCH/FTEF:	482	477	552
Fill Rates:	84.4%	86.7%	83.7%
FALL TO SPRING PERSISTENCE WITHIN SUBJECT			
Fall-to-Spring:	14	10	14
F-to-S Persistence:	13%	9%	12%
DEGREES AND CERTIFICATES			
Certificates:	0	0	0
Associate Degrees:	n/a	n/a	n/a
STUDENT DEMOGRAPHICS			
GENDER			
Female:	52.5%	51.8%	58.4%
Male:	45.4%	45.7%	39.9%
Unknown:	2.1%	2.6%	1.7%
AGE at TERM			
Less than 19	7.4%	13.2%	11.0%
20 to 24	41.0%	38.6%	37.7%
25 to 29	23.0%	20.3%	23.1%
30 to 34	11.5%	10.9%	12.7%
35 to 39	8.8%	4.2%	3.3%
40 to 49	4.7%	8.7%	7.7%
50 and Older	3.5%	4.2%	4.4%
RACE/ETHNICITY			
African American:	3.8%	2.9%	4.7%
Asian/Pac Islander:	36.9%	39.2%	38.6%
Hispanic:	8.4%	8.4%	9.9%
Multiple Race:	8.8%	15.1%	7.7%
White:	37.5%	25.1%	32.5%
Unknown:	4.1%	9.3%	6.6%

Table 1.14 Program Review Data for Physics by Modality

Academic Year	2011-12	2012-13	2013-14
Total SUBJECT Enrollment	339	311	363
- Success Rate	80.5%	76.8%	75.2%
- Retention Rate	91.2%	88.1%	83.5%

SUBJECT ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Correspondence Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Hybrid Enrollment	162	124	85
- Success Rate	82.1%	83.1%	72.9%
- Retention Rate	91.4%	88.7%	83.5%
Online Enrollment	177	187	278
- Success Rate	79.1%	72.7%	75.9%
- Retention Rate	91.0%	87.7%	83.5%
Telecourse Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Traditional Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%

COLLEGE ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	875	558	766
- Success Rate	58.4%	57.7%	50.5%
- Retention Rate	86.7%	79.7%	75.7%
Correspondence Enrollment	453	524	813
- Success Rate	56.5%	67.2%	77.6%
- Retention Rate	89.0%	81.5%	89.7%
Hybrid Enrollment	1,245	689	627
- Success Rate	72.9%	72.3%	66.2%
- Retention Rate	89.6%	89.8%	84.4%
Online Enrollment	23,260	22,827	25,551
- Success Rate	64.3%	62.0%	62.9%
- Retention Rate	87.0%	82.2%	81.2%
Telecourse Enrollment	10,657	9,664	15,993
- Success Rate	57.3%	53.7%	55.3%
- Retention Rate	87.8%	80.5%	82.8%
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- Success Rate	81.9%	77.0%	77.6%
- Retention Rate	93.0%	90.1%	88.5%

Program Student Learning Outcome(s)

Summarize PSLO findings and dialog from the spring All College Meeting event.

There is no PSLO data for the Sciences at <http://seaport.coastline.edu/StudentLearningOutcomes.cfm>

Here are the results from our All College Meeting discussions:

Biology:

OUTCOME 1: Explain three fundamental processes present in biology such as metabolism, homeostasis, growth, reproduction, development, genetics or organism physiology.

ASSESSMENT 1: Outcome will be assessed through essays or oral components within midterm and final exams.

OUTCOME 2: Given the appropriate laboratory setting, design and apply the process of science to address a hypothesis.

ASSESSMENT 2: Projects will be assessed in which students create, test and evaluate a novel hypothesis. These projects can be presented as a poster, scientific journal article or oral presentation.

OUTCOME 3: Communicate biological concepts effectively in written and/or oral forms.

ASSESSMENT 3: Students will complete various assignments, including essays, oral presentations, poster presentations, etc.

OUTCOME 4: Find, select and evaluate scientific information present in primary research literature, mass media, online or other sources.

ASSESSMENT 4: Students will identify an article in the primary research literature, evaluate it and present it as a journal club or as a summary report.

Geology:

OUTCOME 1: Communicate scientific concepts effectively in written and/or oral forms

ASSESSMENT 1: Quizzes, exams, skills demonstrations, lab work, mapping, reports, and other written assignments.

OUTCOME 2: Find, select, and evaluate scientific information present in primary research literature, mass media, online, or other sources.

ASSESSMENT 2: Reports, discussions, Q and A, essays, research assignments, and exams.

OUTCOME 3: Design and apply the process of science to address a hypothesis in a laboratory setting.

ASSESSMENT 3: Skills demonstrations, Q and A, lab assignments and reports, and exams.

Physics:

OUTCOME 1: Identify and describe major concepts and theoretical principles as applied to physics.

ASSESSMENT 1: Tests, Quizzes, Homework, and SLOs.

OUTCOME 2: Apply appropriate physical laws and mathematical techniques to analyze various physical situations.

ASSESSMENT 2: Tests, Quizzes, Homework, and SLOs.

OUTCOME 3: Perform various scientific experiments and to analyze data to check agreement with theoretical predictions.

ASSESSMENT 3: Laboratory Reports and Quizzes.

Progress on Forward Strategy Initiative(s)

Table 1.15 Progress on Forward Strategies

Initiative(s)	Status	Progress Status Description	Outcome(s)
Astronomy: Develop Labs and Lab Manuals for ASTR100 Lab (2013-2017)	In Progress	Equipment purchased Spring 2015, Labs being created and revised.	ASTR100 Lab scheduled for Spring 2016
Astronomy: Acquire a minimum of five 8-inch telescopes for hands-on labs and field trips. (2013-2017)	Completed	Equipment purchased, labs being designed.	Telescopes and associated accessories purchased in Spring 2015 (THANKS!!).
Astronomy: Work with OCC to teach advanced ASTR courses. (2013-2018)	Not Started	On hold until CCC ASTR and PHYS curricula are stable.	n/a
Biology: Offer Intro Biology (GE Science) at all sites. (2014-2015)	In Progress	Requires onsite lab development at Le-Jao.	Lec/Lab now offered at GGC and NBC.
Biology: Re-evaluate efficacy of Biotechnology program and certificates (2013-2018).	Not Started	Curriculum needs to be updated. Model curricula being developed at State level through C-ID project.	n/a
Biology: Implementation of Biology major courses (2013-2018)	In Progress	Major courses have received C-ID designations and have been articulated to several universities. Faculty is choosing laboratory manual and determining needed supplies and equipment. Running these lab courses will also require further instructional associate and tutoring support. Two pieces of equipment will be required to offer these courses	
Biology: Redesign Intro Bio Labs and associated Lab Manuals (2013-2018)	Complete		A customized lab manual was chosen and implemented beginning Spring 2014, resulting in higher enrollments and success rates.
Biology: Ensure that students work in a safe and professional lab environment at all sites (2014-2015)	In Progress	Most safety materials are provided from general lab supplies. Microbiology lab coats are periodically	

		sterilized, but require cleaning.	
Biology: Explore offering lower division courses in Bioengineering and Chemical Engineering (2013-2018)	Not Started	Not offered by sister colleges, might enhance Coastline. Would require a new faculty hire.	Not needed at this time
Chemistry: Implement Organic Chemistry sequence for CHEM and BIO majors.	In Progress	Although courses are currently offered, articulation agreements have not been finalized. Additional load to Instructional Associate.	Organic Chemistry started in 2014. Organic Chemistry full time faculty hired.
Chemistry: Establish AS-T Degree	Not Started	Chemistry AS-T has been established, but has not been published yet. Preparatory steps: 1) align current CHEM 180 and 185 syllabi with C-ID course descriptors; 2) submit for C-ID approval	
Chemistry: Offer CHEM130 in hybrid format.	Not Started		
Geology: Continue to update and review modalities for course offering. Add GEOL 105 and 105L for summer.	Complete		Hired two new adjunct instructors and are offering two additional sections of online GEOL C105L Lab
Geology: Develop site-based lab for major.	Not Started		
Marine Science:	n/a	n/a	n/a
Physics: Purchase lab and computer equipment for full set of Phys120/125 labs. (2013-2015)	Complete	Equipment purchased in Spring 2013.	Equipment for 20 new labs has been implemented at NBC beginning Fall 2013.
Physics: Design a full suite of labs and associated lab manuals for Phys120/125. (2013-2015)	In Progress	Labs have been designed and revised. Instructor version of Lab Manuals should be complete by end of Fall 2015.	
Physics: Establish AS-T Degree in Physics (2013-2016)	In Progress	State approval for AS-T and associated C-ID designations granted in 2014-2015. Physics curricula needs to be revised to match Carnegie units.	

Section 2: Human Capital Planning

Staffing

Table 2.1 Staffing Plan

Year	Administrator	Management	F/T Faculty	Adjunct	Classified	Hourly
Previous year			Position Title (# of positions)			
Current year			6 full time faculty 1 part time Instructional Lab Associate, 2 temporary part time Instructional lab associates			
1 year			Full time Instructional Lab Associate; 2 part time needed. Full time Biology instructor needed.			

2016-2017 primary staffing requirements are based on the following:

1. Dr. Pedro Gutierrez (Microbiology) Leave of Absence 2015-2016. It is not clear if Pedro will return.
2. Anticipated increases in Bio and Chem courses due to the Allied Health and STAR programs will require an additional FT Biology Instructor. These are new developments, and cannot be based on the 2013-2014 data provided for this report.
3. Resignation of Full Time Lab Associate in August 2015. Search for replacement is being organized at this time.
4. Increased Lab Associate duties associated with new lab spaces at Newport Center associated increase in numbers of students taking Bio and Chem labs.

Professional Development

Astronomy/Physics: David Devine attended a STEM workshop in Spring 2014 at CSU-LA and continues to utilize materials from previous conferences (2013) on the development of Physics Labs and best practices for teaching Introductory Astronomy. David also joined the Orange Coast Astronomers Club in Summer 2015.

Biology: Randall Warwick published the 5th edition of his textbook *Biology: Independent Study Manual* Debbie Henry attended the following conferences and workshops in 2015: California Association of Neurological Surgeons Annual Meeting, Council of State Neurosurgical Societies, May, Council of State Neurosurgical Societies, CANS Leadership, Western Neurosurgical Society Annual Meeting. Debbie also completed a Reading Apprenticeship course in Spring 2015.

Chemistry: Jean Dupon attended the "Active Learning in Organic Chemistry" workshop in Washington DC in June 2015. Ted Marcus attended a seminar on Adenosine Receptors at UCLA in Fall 2014.

Geology: All instructors have continued training in technology- Debbie Secord has Beta tested the new version of Moodle, is a Canvas early adopter and is a participant in the Statewide Online Educational Initiative; Curtis Williams and Kelly Ruppert also have attended multiple trainings and are early adopters of Canvas. All have also taken Canvas self-directed tutorials.

Section 3: Facilities Planning

Facility Assessment

Developed new lab for Biological Science at Newport Beach Center.

Increased the safety of the Organic Chemistry Lab at Newport Beach Center (added phone; red phone).

Added red phone to the 215 Lab at Newport Beach Center

Revamp the Le-Jao Laboratory to make it ADA compliant. Add a much needed prep room to the Le-Jao lab-Room 121.

Develop a microbiology lab at the Newport Beach Center

Increase faculty office space

Section 4: Technology Planning

Technology Assessment

Utilize the new Canvas course to develop on-line and hybrid courses. Develop a model curriculum for Bio 100 and Bio 100L.

Encourage funding of faculty to develop these model courses.

Develop a faculty web site for the College web site.

Section 5: New Initiatives

Initiative: Create a supportive learning environment enhanced with quality faculty, innovative technology (as exhibit by improved online courses), which will lead to student success and student acquisition of degrees and certificates.

Describe how the initiative supports the college mission:

This initiative makes student success its primary objective.

What college goal does the initiative align with? [Select one](#)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Student Success | <input type="checkbox"/> Partnerships |
| <input type="checkbox"/> Access, Persistence and Retention | <input type="checkbox"/> Culture of planning, evidence and inquiry |
| <input type="checkbox"/> Innovation | <input type="checkbox"/> Growth and efficiency |

What College planning document(s) does the initiative align with? [Select all that apply](#)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Educational Master Plan | <input checked="" type="checkbox"/> Facilities |
| <input checked="" type="checkbox"/> Staffing | <input checked="" type="checkbox"/> Technology |

What evidence supports this initiative? [Select all that apply](#)

- Learning Outcome (SLO/PSLO) assessment
- Internal Research (Student achievement, program performance)
- External Research (Academic literature, market assessment, audit findings, compliance mandates)

Describe how the evidence supports this initiative.

The development of degrees and certificates that help students transfer to four-year and professional schools advances student success.

Recommended resource(s) needed for initiative achievement:

1. Instructional Lab Associates to help maintain the safety and quality of the laboratories across Coastline's three campuses. At a minimum, the Science Department needs a full time Instructional Lab Associate and two Part-time Lab Associates in order to maintain safety and quality.
2. Revamping of the Le-Jao Laboratory to enable it to be ADA compliant, student-lab friendly (encourage groups of students to perform lab experiments), and allow for a much needed prep room.
3. Hire an additional Biology full-time Faculty. This is much needed if Dr. Gutierrez does not return as we have not netted faculty with our recent hire. This is also necessary in order to grow the pre-allied health classes so that quality can be maintained.
4. Ensure that all equipment for all courses is ordered and maintained. Many of our older courses (such as anatomy and physiology) have very old equipment.

What is the anticipated outcome of completing the initiative?

Improved student success exhibited as increased degrees for transfer and certificates. High success for student and faculty in student learning outcomes.

Provide a timeline and timeframe from initiative inception to completion.

1. Instructional Lab Associates-Immediate need (Jan 2016)
2. Le-Jao revamping- 2 years (2018)
3. New faculty- one year (2016-2017)
4. Replace/repair/order equipment- ongoing

Section 6: Prioritization

List and prioritize resource requests

Initiative	Resource(s)	Est. Cost	Funding Type	Health, Safety Compliance	Evidence	College Goal	To be Completed by	Priority
ASTRONOMY EQUIPMENT	Funds for Carts and Dollies for telescopes	1,000	1-time	yes	Existing need	Student Success	2016	5
BIOLOGY EQUIPMENT (EACH YEAR)	Funds for Classroom/Lab Equipment	20,000	Ongoing	yes	Standard yearly purchases	Student Success	2016	3
BIOLOGY EQUIPMENT (Anatomy/Physiology)	Funds for Classroom/Lab Equipment	40,000	1-time	yes	Existing needs, New Labs at NBC	Student Success	2016	1
CHEMISTRY EQUIPMENT	Funds for Start Up Lab Equipment	13,000	1-time	yes	New Labs at NBC	Student Success	2016	2
GEOLOGY EQUIPMENT	Funds for Classroom Equipment	2000	1-time	no	Existing needs	Student Success	2016	4
PHYSICS EQUIPMENT	Funds for Classroom/Lab Equipment	1000	Ongoing	no	Existing needs	Student Success	2016	6

List and prioritize staffing requests. For full-time positions, include a Coast District approved job description.

Initiative	Resource(s)	Est. Cost	Funding Type	Health, Safety Compliance	Evidence	College Goal	To be Completed by	Priority
1-2 FT Biology Instructors	Funding	??	Ongoing	no	FTEF30 ~12, we currently have one FT Bio. May also need replacement for Pedro Gutierrez	Student Success	2017	3
Lab Assistant 1 FT	Funding	50,000	Ongoing	yes	Replacement for Kevin Pegg	Student Success	2016	1
2 Lab Assitant PT	Funding	20,000	Ongoing	yes	Need based on new labs at Newport	Student Success	2016	2



Orange Coast College
Golden West College
Coastline Community College

JOB SPECIFICATION

INSTRUCTIONAL ASSOCIATE	Range: E-48
(Biological Science/Chemistry)	Spec ID: 94041
Technical	Class:
06/2008	Date:

DEFINITION:

Under general supervision, provides instructional assistance and support tasks to students in the Biological Science and Chemistry classes in accordance with assignments and directions from a course instructor or other academic personnel; provides technical assistance to students, faculty, and staff in the use of technology in instructional programs; monitors and reports student progress; maintains Biological Science and Chemistry lab operations; provides instructional support for the students enrolled in Biological Science and Chemistry classes/labs requiring technical competence in basic math, general biology, chemistry, use of instructional equipment and software, and basic academic skills.

DISTINGUISHING CHARACTERISTICS:

Positions assigned to the class of Instructional Associate perform duties to assist and support a classroom instructor or other academic personnel, in a tutorial program, classroom, lab, or office setting. Classification in the instructional associate area requires individual emphasis, based on the instructional assignment. Each specialized emphasis (i.e.: Instructional Associate/ Arts) constitutes a separate classification.

Specific tasks may vary depending upon the subject area and discipline to which assigned. Work is performed within a framework of established procedures which may not require the physical presence of the instructor or other academic personnel.

Positions in this class may exist in any of the instructional departments or divisions. Incumbents in the class of Instructional Associate are expected to have completed a minimum of two years of college with a major in the subject area to which their position is assigned. Recruitment to fill a position in this class should include the instructional area of assignment, such as “Instructional Associate (Art)” or “Instructional Associate (Mathematics)”.

EXAMPLES OF DUTIES: Duties may include, but are not limited to, the following:

- a. Assist instructional staff with the instruction, demonstration, and presentation of course assignments and materials for groups of students in the Biological Science and Chemistry courses.
- b. Assist in the preparation of instructional activities.
- c. Assist students with assignments, course content, and study skills; evaluate student work and coordinate appropriate tutorial sessions and supplemental instruction as needed.
- d. Assist in the coordination, operation, and maintenance of the science laboratory set up, including preparation of solutions, dispensing chemicals, preparing specimens, setting up equipment, and disposing of chemicals and specimens.
- e. Set up and maintain specialized instruments and equipment and present information in a logical, accurate and interesting manner to students.
- f. Orient students and new faculty on the procedures used and technology available to facilitate learning.
- g. Monitor and record student progress and attendance; prepare and maintain related records and reports; evaluate student needs; confer with instructors regarding student progress.
- h. Recommend appropriate instructional materials and technology to be used by students; maintain and test instructional materials and technology to ensure instructional methods and course content is current, accurate, and relevant in accordance with instructor’s curriculum guidelines.
- i. Demonstrate or describe the proper operation of equipment, instruments and supplies used in lab work.
- j. Assist students with technical difficulties regarding assignments.
- k. Respond to student questions and provide information regarding subject matter.
- l. Research and troubleshoot technical problems when students, staff, and faculty have difficulty with the instructional equipment, course management systems, or log-on procedures.
- m. Assist in recruiting, hiring, training, and supervising student assistants.
- n. Assist instructors in preparation of manuals, handouts, and training/teaching materials.
- o. Demonstrate and enforce proper health and safety procedures and regulations in the laboratories and ensure that students are aware of such regulations.
- p. Perform general clerical functions critical to the maintenance and efficiency of the laboratories.
- q. Participate in development of the budget and monitor expenditures.
- r. Make minor repairs and adjustments to laboratory equipment, such as microscopes; and arrange for necessary repairs of other equipment.
- s. Oversee schedule and training of students and maintain hourly employee records.
- t. Maintain accurate records.
- u. Consult with vendors regarding supplies, materials and equipment as needed.
- v. Monitor inventory and order materials and equipment needed to maintain office, lab, and/or classroom.

- w. Participate in department meetings with instructional staff to exchange information, provide periodic reports and to remain current in instructional support techniques and procedures.
- x. Perform related duties and responsibilities as required.

MINIMUM QUALIFICATIONS:

Knowledge of:

1. Basic math, general biology and chemistry at the community college level.
2. Supplies and equipment of a life science and chemistry laboratories and record keeping consistent with inventory control.
3. Proper laboratory techniques for preparation and storage of solutions.
4. Appropriate safety precautions and procedures as directed by District Health and Safety Officers.
5. Instructional and tutorial methods and techniques.
6. Student guidance principles and practices.
7. Community college curriculum and educational requirements.
8. Correct English usage, grammar, spelling, punctuation, and vocabulary.
9. Oral and written communication skills.
10. Computer assisted instruction, word processing software, and network applications.
11. Principles and procedures of record keeping.
12. Tools, techniques, equipment, basic study skills, and applicable technology used in the Biological Sciences/Chemistry laboratory.
13. Interpersonal skills using tact, patience and consideration.

Ability to:

14. Properly set up, operate and demonstrate the correct operation/handling of materials and equipment used in biology and chemistry laboratories.
15. Work with biological sciences and chemistry chemicals, specimens, and related equipment.
16. Perform basic math, chemistry calculations, and college level work in assigned academic field.
17. Maintain chemicals and dispose of waste according to procedures specified by District Health and Safety.
18. Supervise the work of student assistants and maintain hourly employee records.
19. Maintain an inventory on a computer in compliance with the Office of Health and Safety.
20. Understand and carry out oral and written instructions.
21. Provide effective instruction and assistance to students enrolled in the biology and chemistry classes.
22. Present and demonstrate instructional materials and tutor in at least one subject area.
23. Assess student achievement and encourage student participation.
24. Troubleshoot and maintain instructional materials and technology.
25. Respond to questions and assist students as needed.
26. Maintain accurate records.
27. Work independently in the absence of supervision.
28. Plan, organize, and schedule a variety of work and activities.
29. Oversee the work of others.

30. Understand and follow oral and written instructions.
31. Recommend appropriate instructional materials and resources.
32. Communicate clearly and concisely, both orally and in writing.
33. Perform basic clerical duties and work with statistical data.
34. Establish and maintain effective working relationships with those contacted in the course of work, including individuals from diverse academic, socioeconomic, cultural, and ethnic and disability backgrounds.

Education and Experience:

35. Completion of two years of college with major course work in chemistry or biology or the equivalent (must include organic chemistry and general biology classes).
36. Two years experience in an instructional setting as a tutor or in a similar position.
37. Or, any combination of experience and training that would likely provide the required knowledge and abilities.

LICENSES OR OTHER REQUIREMENTS:

Some positions in this classification may require a valid California driver's license and/or possession of a certificate of completion from an accredited college or agency relative to the assigned area. Continuing education, training or certification may be required.

PHYSICAL DEMANDS AND WORK ENVIRONMENT

- Incumbent must be able to meet and perform the physical requirements of the position which may include sitting or standing for prolonged periods of time.
- The physical demands are representative of those that must be met by an employee to successfully perform the essential functions of this job.
- The work environment characteristics are representative of those an employee encounters while performing the essential functions of this job.
- Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

DRC: 07/02 – 07/03/08 E-Meeting

BOARD APPROVAL DATE: 07/16/2008