

# Instructional Program Review Four Column Report

## Program Review - Chemistry

**Mission Statement:** Chemistry Discipline Mission Statement:

“The Chemistry Discipline provides learning opportunities to diverse students in Chemistry leading to skills (e.g. problem solving and analytical thinking) needed for transfer, health programs, and general education.”

**Has mission statement changed since last review?:** No

**Align your discipline mission to college mission:** 3. encourages academic excellence and professionalism;

**Semester submitted:** Fall 2015

**Major developments and changes:** Added a second full time Faculty member and was awarded an NSF grant for the Flying with Swallows Research project. Students will be carrying out research into water and soil pollution by metals ions, nitrate, and chlorine.

The Faculty is working to develop STEM curriculum in the field of General Chemistry that enhances the transfer potential for students going to UC and CSU.

**Year One Objectives:** Develop Student's Research Based Laboratory Skills Experimental science skills include the ability to:

- (1) collect accurate quantitative data
- (2) collect precise quantitative data
- (3) use both digital and graduated equipment to obtain accurate and precise data
- (4) record the data to correctly communicate the level of accuracy (and precision for the Honors courses).

**Status of Year One Objectives:** Ongoing

**Year Two Objectives:** Acquire RESOURCES needed to offer a complete Chemistry Program at MVC Students currently must transfer or go to RIV or NORCO Colleges to take CHE 12 (Organic Chemistry). For Science Majors to be able to complete their Chemistry program at MVC we need to have: (1) Additional Lab Facilities designed for Organic Chemistry, (2) an additional Full-time Chemistry Faculty, (3) Additional Laboratory Technician, (4) Additional Equipment, and (5) Additional Supply Budget.

**Status of Year Two Objectives:** Ongoing

**Year Three Objectives:** Increase Student Access by Adding Additional Sections of CHE 2A CHE 2A is a prerequisite course for all Chemistry courses, Microbiology, and Allied Health programs. The full wait-lists indicate that we do not offer enough sections to meet demand, which causes a roadblock for many student's progress.

**Status of Year Three Objectives:** Ongoing

**Year Four Objectives:** Enhance student exposure to Scientific Instrumentation through purchase of appropriate equipment for the development of General and Organic Chemistry Research based Laboratory which will enhance STEM transfer opportunities to UC and CSU as well as NSF-REU summer research opportunities.

**Status of Year Four Objectives:** Ongoing

<i>List Program Objectives or Data</i>	<i>Describe Objectives or Data</i>	<i>Evaluation of Objective and/or Data Analysis</i>	<i>Action Plans</i>
<b>Success Rates by Course for Ethnicity, Age and Gender</b> - Analyze course success rates by Ethnicity, Age	<b>Direct: Institutional Research or Other Data</b> - No meaningful correlation was found between	<b>Report Submitted:</b> 2014 - 2015 (Spring 2015) <b>Performance Target Met:</b> Fall 2015 NOTE: Reporting retention data as given in % by ethnicity,	<b>Action Plan:</b> Hiring 1 more Full-time Faculty member in Chemistry

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and Gender  
**Objective Status:** Ongoing  
**Type:** Data Analysis  
**Start Date:** 04/29/2015

ethnicity, age, and gender and success for students in CHE 2A, 2B, 1A, 1AH, 1B, and 1BH when adjusted for sample size.  
**Performance Target :** 80% retention overall for 100 students in an ethnic, age, or gender group is a reasonable goal. A large enough sample size must be considered.

age, and gender is flawed and may lead to faulty conclusions. For example, there was 50% retention in one course for Black students. The course had only 2 students annually and one dropped (due to health issues I happen to know). When the sample size is small the one student dropping gives 50%, if one out of 100 students dropped you would have 99% RETENTION. Sample size should be reported at least! See example below.

would increase success and retention. (04/29/2015)  
**Action Plan Number: 2**

Retention Rates (CHEM 1AH)

Ethnicity

Moreno Valley College, 2008 - 2013

	2008-2009	2009-2010	2010-2011	2011-2012	12/13
Asian	100.0%	100.0%	83.3%	0.0%	100.0%
Black	100.0%	100.0%	100.0%	100.0%	50.0%
Hispanic/Latino	100.0%	83.3%	100.0%	100.0%	83.3%
White	100.0%	100.0%	100.0%	66.7%	100.0%
Other	0.0%	100.0%	100.0%	100.0%	0.0%
MVC All courses	100.0%	94.4%	94.7%	90.9%	87.5%

Count of CCCCCO\_ASSI CHEM 1AH

Row Labels	2008	2009	2010	2011	2012	Grand Total
A	4	4	5	5	18	
B	1	2	1	3	1	8
H	2	5	4	4	10	25
W	5	4	4	2	5	20
Other	2	4	1	7		
Grand Total	12	17	18	10	21	78

Count of CCCCCO\_ASSI CHEM 1AH

Row Labels	2008	2009	2010	2011	2012	Grand Total
A	4	4	6	5	19	1 Asian
B	1	2	1	3	2	9 1 Black
H	2	6	4	4	12	28 3 Hispanic
W	5	4	4	3	5	21 1 White
Other	2	4	1	7		
Grand Total	12	18	19	11	24	84

Over the five year period students of varied ethnicity have dropped without any significant lack of retention by one ethnic group (89% of Hispanic students were retained).

*List Program Objectives or Data*

*Describe Objectives or Data*

*Evaluation of Objective and/or Data Analysis*

*Action Plans*

i. Retention and Success have the same underlying issues. Students who find they have not been successful by the drop deadlines often drop. Other reasons for lack of retention are job and health issues that lead to poor attendance. See part B.

Course Retention Rates for the Chemistry Program at MVC (89.1% for a 5 year average) are higher than those for MVC Transfer (85.6%) and for MVC Credit – Degree Applicable (87.4%) courses. The Chemistry program at MVC has higher rates than Norco (82.4% for a 5 year average) and Riverside City (85.5% for the 5 year average).

Number of A.S. degrees has increased in Biological/Physical Sciences (41 in 2011, 72 in 2012, 89 in 2013) but these figures are not meaningful since most students in the program have other goals. For students taking the 1A/1AH/1B/1BH sequence, transfer is the major goal. Many of these students successfully transfer to UC and CSU for degrees. Last years CHE 1BH class had 3 UC Regents Scholars in it. Others take the CHE 12 series at RCC, since we do not have the faculty and facilities to offer it at this time. For students taking CHE 2A/CHE 2B the goal is usually an Allied Health Program or fulfilling the GE requirement for a laboratory science course. Data is not available to determine completion for Chemistry students on either pathway, though it should be noted that all Dental Hygiene and Physician Assistant students had to have had chemistry courses before entering the program.

Recommendation: We must work to capture as much transfer data and success after transfer as possible.

ii. Course Success Rates for the Chemistry Program at MVC (83.8% for a 5 year average) are higher than those for MVC Transfer (71.2%) and for MVC Credit – Degree Applicable (74.3%) courses. The Chemistry program at MVC has higher rates than Norco (69.6% for a 5 year average) and Riverside City (71.3% for the 5 year average). A slight advantage may stem from MV having the only Honors Chemistry courses across the District, but the number of Honors students is small so it would be less than 1%. Success Rates are lower for initial courses in the sequence CHE 2A (81.8%) and CHE

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		<p>1A (79.5% for a four year average taught by FT Faculty member, 56.7% for 1 year taught by PT Faculty member). Honors Courses, having highly motivated students and taught solely by FT Faculty, have very high success rates --- 1AH (92.5% for 5 year average) and 1BH (96.5%). The majors course 1B (90.6%) has high success since the CHE 1A prerequisite and is taught by the FT Faculty member. CHE 2B (90.0%) has almost exclusively students who are highly motivated to enter careers in Dental Hygiene, Nursing, and similar professions requiring high GPAs in their prerequisite courses.</p> <p>Higher Success and Retention rates for the FT Faculty member occur because of efforts to remediate low initial grades in the course through use of office hours, discussion of study methods, many graded assignments, emphasis on punctuality and preparedness, and some gentle nagging. PT Faculty often don't have the extra time to put into this process. For CHE 2A during 2001/2012 where overall success was 79.7%, the FT Faculty member taught with 82.5% success with 103 students on the first day of class. The PT Faculty success rate was 78.7%. Part of increasing the success rate is having Faculty who will give extra time and effort to help any student who will also put in the effort to succeed.</p> <p>Analysis of the reasons behind lack of student success and retention, based on Marsh grade/attendance data from CHEM 2A Fall 2011 and 2012 with 173 students yield:</p> <ul style="list-style-type: none"> <li>• Withdrawals before first midterm: students find their skills inadequate or the course requires more work than expected. Recommendation: these students need a referral from the professor to a counselor to be advised on possible basic skills remediation or to take a Guidance course. [1 student in 2011]</li> <li>• Withdrawals at 1st midterm: usually student has a very poor grade (39%, 55%, 58%, 43%, 79%) on the exam. I explain that more work, focus, and better attendance will be required and give them a plan to improve their grade if they desire. These are the students that decide they do not wish to put in the time and effort at this time. [5 students in 2011] Recommendation: counseling may also benefit these</li> </ul>	

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		<p>students if it is not a matter that their schedule is too full with work and family obligations to put in the time necessary for success.</p> <ul style="list-style-type: none"> <li>• Withdrawal near the deadline to drop with a W: these students often have repeatedly poor exam results usually with poor attendance or if they attend they are inattentive and passive. These students often repeat the course several times without making any changes in the way that they study. Recommendation: Priority registration should be lost after an unsuccessful attempt at a course that lasts past the census date until the student successfully completes a Guidance course to learn about college study skills and expectations. [6 students]</li> <li>• Unsuccessful grades (D,F, WF): these students don't do assigned HW, have high levels of tardies and absences (one student had 8 absences and 9 tardies), low exam scores with the highest generally 75%, less than 50% on the final exam. They will be repeating to try to improve the grade on their transcript and unless some remediation is done they will be unlikely to be more successful. <ul style="list-style-type: none"> <li>o Some of these students are merely first time college students who need to learn the level of work outside of the classroom and the level of focus within the classroom needed for success.</li> <li>o High absences often occur due to health issues. Continued Health Services on campus is very important, with preventive measures such as flu shots crucial.</li> <li>o Child Care issues are also a factor in absences. The ECD Center and Head Start program are vital to many of our student's success.</li> <li>o These students do not take advantage of Faculty Office Hours and SI sessions that could help them succeed.</li> </ul> </li> </ul> <p>iii. Grades are set to a reasonable performance standards that allow for success in programs and courses for which these courses are prerequisites. No curve is used or is appropriate since the sample size is small. A cooperative rather than a competitive classroom environment results from the lack of a curve. Since all courses are transferable and degree applicable for competitive programs, most</p>	

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<p><b>Develop Student's Research Based Laboratory Skills</b> - Experimental science skills include the ability to:</p> <ol style="list-style-type: none"> <li>(1) collect accurate quantitative data</li> <li>(2) collect precise quantitative data</li> <li>(3) use both digital and graduated equipment to obtain accurate and</li> </ol>	<p>Data will be collected where students perform tasks in the laboratory.</p> <p><b>Performance Target</b> : 70% of students will successfully demonstrate research based laboratory skills.</p>	<p><b>Report Submitted:</b> 2014 - 2015 (Spring 2015)  <b>Performance Target Met:</b> In progress</p> <p>An on-going assessment project has been on SLO's related to student science data collection skills. Difficulties in evaluation of this objective has been: (1) the poor condition of the analytical balances for measuring mass and (2) insufficient equipment for students to work individually.</p>	<p><b>Action Plan:</b> Assessment data has been collected to be analyzed during Summer 2015. Each lab section will continue to collect data on these 4 items. As resources allow, new equipment will be purchased which will allow</p>

students are highly motivated to earn high grades. Course grade distribution varies from year to year, for 2011:

- CHE 2A Fall 2011: A(26%), B(30%), C(30%), D(2%), F (2%), W(10%)
- CHE 2B Spring 2011: A(46%), B(45%), C(0%), D(1%), F (0%), W(7%)
- CHE 1A Fall 2011: A(21%), B(50%), C(21%), D(0%), IF (3.5%), W(3.5%)
- CHE 1AH Fall 2011: A(73%), B(18%), C(0%), D(0%), F (0%), W(9%)
- CHE 1B Spring 2011: A(38%), B(44%), C(12%), D(0%), F (0%), W(6%)
- CHE 1BH Spring 2011: A(40%), B(60%), C(0%), D(0%), F (0%), W(0%)

American Chemical Society guidelines suggest that all of these Chemistry courses have a high percentage of the grade from the laboratory. For students to have laboratory skills needed for their programs and transfers, it is essential that adequate equipment in good repair is available to our students. Budgets cuts have resulted in going many years without replacing broken equipment and with a static supply budget when costs continue to increase. For example, we now have one balance in the lab that does not work (with 4 that are getting quite old and delicate). This means students have to spend about 16% more time in line waiting to use the equipment instead of developing important skills.

Without a strong, supported lab component our courses will not be able to teach the laboratory skills required for transfer.

(04/29/2015)

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<p>precise data (4) record the data to correctly communicate the level of accuracy (and precision for the Honors courses).</p> <p><b>Objective Status:</b> Ongoing <b>Start Date:</b> 04/29/2015</p>		<p>(05/13/2015)</p>	<p>us to assess student performance. (05/13/2015) <b>Action Plan Number:</b> 1</p>
<p><b>Increase Student Access by Adding Additional Sections of CHE 2A</b> - CHE 2A is a prerequisite course for all Chemistry courses, Microbiology, and Allied Health programs. The full wait-lists indicate that we do not offer enough sections to meet demand, which causes a roadblock for many student's progress.</p> <p><b>Objective Status:</b> Ongoing <b>Type:</b> Data Analysis <b>Start Date:</b> 05/05/2015</p>	<p><b>Schedule of Classes</b> - CHE 2A sections fill early in the registration process and the wait-lists usually fill to capacity as well. To serve students transferring in science disciplines, entering allied health programs, and meeting their GE requirement of a science course with a laboratory, MVC needs to have adequate sections of this course. Data supporting this are the wait-lists.</p> <p><b>Performance Target :</b> Offer enough sections of CHE 2A annually that the majority of wait-lists only fill to 2/3.</p>	<p><b>Report Submitted:</b> 2014 - 2015 (Spring 2015) <b>Performance Target Met:</b> In progress To increase CHE 2A sections from 10 lab sections per year to 12 lab sections per year by teaching 2 evening lab sections. To do this we would need: \$1400 additional supply budget, two FT Faculty in Chemistry or a mentored PT Faculty, sufficient Laboratory and adequate Lab Tech support for evening. (05/13/2015)</p>	<p><b>Action Plan:</b> As of Fall 2015, a new FT Faculty member has been hired and a plan is in place to hire an evening Lab Tech. Addition to the supply budget needs to be received. One section of CHE 2A was added this semester. Continued work with Physical Resources will pursue a new Chemistry Laboratory Facility. (09/03/2015) <b>Action Plan Number:</b> 10</p>
<p><b>Acquire RESOURCES needed to offer a complete Chemistry Program at MVC</b> - Students currently must transfer or go to RIV or NORCO Colleges to take CHE 12 (Organic Chemistry). For Science Majors to be able to complete their Chemistry program at MVC we need to have: (1) Additional Lab Facilities designed for Organic Chemistry, (2) an additional Full-time Chemistry Faculty, (3) Additional Laboratory Technician, (4) Additional Equipment, and (5) Additional Supply Budget.</p> <p><b>Objective Status:</b> Ongoing <b>Type:</b> Curriculum</p>	<p><b>College Catalog</b> - Objectives: To advocate for Physical Resource Plans to include construction of a Science Lab building as soon as possible. Data: Collect data to investigate the number of students at MVC that transfer because they can not complete their Chemistry curriculum at this campus.</p> <p><b>Performance Target :</b> Performance would be met by construction of new Laboratory Facilities designed for Instruction of Organic Chemistry (CHEM 12) including stockroom and instrument room that is supplied with the required equipment. This</p>	<p><b>Report Submitted:</b> 2014 - 2015 (Spring 2015) <b>Performance Target Met:</b> No Evaluate the number of students who must go to RIV or NORCO to complete the Chemistry program. (05/13/2015)</p>	<p><b>Action Plan:</b> Increase capacity to meet student need for Organic Chemistry to provide a complete Chemistry Program for transfer to UC and CSU. (09/24/2015)</p>

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<p><b>Start Date:</b> 05/05/2015</p>	<p>would be followed by hire of a FT Faculty member and Additional assigned time for a Laboratory Technician. The Chemistry Supply Budget would have to be increased by a value (greater than \$2000 per year) corresponding to figures from Norco and RIV.</p>		
<p><b>Summary of SLO Assessment for 2015 Four-Year Reports</b> - Status of SLO Assessment  <b>Objective Status:</b> Ongoing  <b>Type:</b> Assessment</p>	<p><b>SLO Assessments</b> - Referring to the "IPR-Report on Assessment" in Ad Hoc Reports, review the SLO Assessment Result Dates to ensure that all SLOs have been assessed in 2012 or later. In narrative form, please describe your progress in assessing your courses and programs over the last four years. Include information about the ways in which you are using assessment results to improve teaching and learning in your courses and/or programs.  <b>Performance Target :</b> (1) All SLOs have an Assessment Result Date of 2012 or later.  (2) Assessment results are used to improve teaching and learning in your courses and/or programs.</p>	<p><b>Report Submitted:</b> 2015 - 2016 (Fall 2015)  <b>Performance Target Met:</b> Yes  100% of courses have all SLO's assessed within the last 4 years. Based on assessment results we will be: (1) implementing new methods of instruction (mapping of processes) are being tested, (2)Doing more regular assessment to prevent procrastination, (3)Developing some instructional materials. (09/24/2015)</p>	<p><b>Action Plan:</b> Faculty will be: (1) implementing new methods of instruction (mapping of processes) are being tested, (2)Doing more regular assessment to prevent procrastination, (3)Developing some instructional materials. (09/24/2015)</p>
<p><b>Summary of Curriculum Status for 2015 Four-Year Report</b> - Status of Course Outlines of Record (CORs)  <b>Objective Status:</b> Ongoing  <b>Type:</b> Curriculum</p>	<p><b>CurricUNET</b> - A major part of the program review process is to complete a thorough review of the Course Outlines of Record (CORs). Referring to the "IPR - Report on CORs and Course Offering/Rotation" in Ad Hoc Reports, review the COR dates to ensure that all CORs are dated 2010 or later. (To make changes to the IPR-Report on CORs, you must return to Course SLO</p>	<p><b>Report Submitted:</b> 2015 - 2016 (Fall 2015)  <b>Performance Target Met:</b> Yes  All COR's were revised on 03/08/2012 (09/24/2015)</p>	<p><b>Action Plan:</b> launch major modifications in Curricunet for 1AH and 1BH (09/24/2015)</p>



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	<p>Assessment.)</p> <p><b>Performance Target :</b> All Course Outlines of Record have a date of 2010 or later.</p>		
<p><b>Successful Completion Analysis for 2015 Four-Year Report</b> - Analysis of data on success (2003-2014)  <b>Objective Status:</b> Ongoing  <b>Type:</b> Data Analysis</p>	<p><b>Direct: Institutional Research or Other Data</b> - Referring to the data in your Four-Year Program Review Data Files folder in the Document Repository, please analyze trends in success that you believe are important for your planning and resource needs. Please also include the data file(s) by relating it to the document.  <b>Performance Target :</b> 70% or better of students will complete the courses successfully.</p>	<p><b>Report Submitted:</b> 2015 - 2016 (Fall 2015)  <b>Performance Target Met:</b> Yes  For 2011 to 2014, Success ranged from 68.9% to 84.0% with a mean % of 80.7%. MVC data ranges from 68.2% to 71.6% with a mean of 70.4%. RCCD data ranges from 65.8% to 67.8% with a mean of 67.0%. Chemistry values compare favorably with the statistics from MVC and RCCD. Higher than average success is expected for Chemistry because all course offerings have a Math prerequisite. (09/24/2015)</p>	<p><b>Action Plan:</b> The Faculty will validate the prerequisites regularly using rigorous content and statistical evaluation from MVC Institutional Research. (09/24/2015)</p>
<p><b>Retention Analysis for 2015 Four-Year Report</b> - Analysis of data on retention (2003-2014)  <b>Objective Status:</b> Ongoing  <b>Type:</b> Data Analysis</p>	<p><b>Direct: Institutional Research or Other Data</b> - Referring to the data in your Four-Year Program Review Data Files folder in the Document Repository, please analyze trends in retention that you believe are important for your planning and resource needs. Please also include the data file(s) by relating it to the document.  <b>Performance Target :</b> 70% or better students will be retained in the course</p>	<p><b>Report Submitted:</b> 2015 - 2016 (Fall 2015)  <b>Performance Target Met:</b> Yes  For 2011-2014, retention ranged from 85.8 to 91.5% with a mean % of 89.1%. MVC data ranges from 85.0 to 87.1% with a mean of 86.4%. RCCD data ranges from 84.4 to 85.7% with a mean of 85.0%. Chemistry courses values compare favorably to the overall statistics of Moreno Valley College and Riverside Community College District. Higher retention should be expected because all courses offered have a math prerequisite. (09/24/2015)</p>	<p><b>Action Plan:</b> The Faculty will validate the prerequisites regularly using rigorous content review and statistical evaluation from MVC Institutional Research. (09/24/2015)</p>
<p><b>Enrollment Analysis for 2015 Four-Year Report</b> - Analysis of data on enrollment (2003-2014)  <b>Objective Status:</b> Ongoing  <b>Type:</b> Data Analysis</p>	<p><b>Direct: Institutional Research or Other Data</b> - Referring to the data in your Four-Year Program Review Data Files folder in the Document Repository, please analyze trends in</p>	<p><b>Report Submitted:</b> 2015 - 2016 (Fall 2015)  <b>Performance Target Met:</b> Yes  For 2011-2015, enrollment ranged from 177 to 201 with a mean of 187. The enrollment has remain very flat due to lack of facilities, faculty, equipments and supplies budget to</p>	<p><b>Action Plan:</b> Increase the capacity because there is an identified documented shortage of STEM majors going to UC (09/24/2015)</p>

List Program Objectives or Data	Describe Objectives or Data	Evaluation of Objective and/or Data Analysis	Action Plans
	<p>enrollment that you believe are important for your planning and resource needs. Please also include the data file(s) by relating it to the document.</p> <p><b>Performance Target :</b> 100% of all classes will be filled to capacity</p>	<p>increase the number of lab sections. (09/24/2015)</p>	
<p><b>Efficiency Analysis for 2015 Four-Year Report</b> - Analysis of data on efficiency (2010-2014) <b>Objective Status:</b> Ongoing <b>Type:</b> Data Analysis</p>	<p><b>Direct: Institutional Research or Other Data</b> - Referring to the data in your Four-Year Program Review Data Files folder in the Document Repository, please analyze trends in efficiency that you believe are important for your planning and resource needs. Please also include the data file(s) by relating it to the document.</p> <p><b>Performance Target :</b> The State target for efficiency is 525. Compare your discipline/program's efficiency levels to this State benchmark, including (if applicable) a discussion of course enrollment limitations that may not allow you to achieve the benchmark.</p>	<p><b>Report Submitted:</b> 2015 - 2016 (Fall 2015) <b>Performance Target Met:</b> No Chemistry efficiencies ranged from 477 to 492 with a mean of 494 for 2011 to 2014. This is comparable to MVC values which range from 478 to 492, but lower than District levels of 538 to 554. The Chemistry programs efficiency levels are limited by laboratory capacities which must meet safety guidelines and American Chemical Society standards. (09/24/2015)</p>	<p><b>Action Plan:</b> Facilities limit the possible efficiency. A large lecture hall that could hold 96 students for lecture could increase efficiency, but would not be pedagogically sound. (09/24/2015)</p>
<p><b>Enhance student exposure to Scientific Instrumentation</b> - Purchase of an Electron Microscope will enhance instruction by: (1) allowing CHE 1A and CHE 1AH students to relate crystal morphology to ion packing patterns, (2) enhance swallows project research through analysis of swallow nest structure and (3) analyze material surfaces for pre-engineering students. <b>Objective Status:</b> Inactive <b>Type:</b> Curriculum</p>	<p><b>Directly related to Outcome</b></p> <p><b>Direct: Institutional Research or Other Data</b> - Objective to enhance the STEM student learning</p>	<p><b>Report Submitted:</b> 2014 - 2015 (Spring 2015) <b>Performance Target Met:</b> In progress If equipment is purchased, enhancement of student interest in STEM will be assessed by the survey developed and being administered to all classes SPRING 2015. (05/13/2015) <b>Related Documents:</b> <a href="#">Assessment of Interest in STEM and.doc</a></p> <p><b>Report Submitted:</b> 2014 - 2015 (Spring 2015) <b>Performance Target Met:</b> In progress Subject to receiving the equipment, students will be</p>	<p><b>Action Plan:</b> Upon purchase of the equipment, curriculum will be implemented to use it in order to stimulate student interest in STEM education and careers. A survey of students will be used to evaluate changes in attitudes. (05/13/2015) <b>Action Plan Number: 2</b></p> <p><b>Action Plan:</b> A baseline survey will be taken this semester for all Chemistry courses. If equipment</p>

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<p><b>Start Date:</b> 05/05/2015  <b>Inactive Date:</b> 09/24/2015</p>	<p>experience and prepare for student transfer by exposure to the use of advanced technology for Scientific Research and Data Collection. STEM would purchase a Hitachi TM3000 Table Top Electron Microscope for use by MVC students and for STEM Outreach to encourage interest in STEM education and careers.  <b>Performance Target :</b> Give at least 90% of all Chemistry students and 100% of all Swallows Project students at least one assignment that incorporates making observations using this piece of equipment.</p>	<p>surveyed on there attitudes about Chemistry and STEM. (05/13/2015)</p>	<p>is purchased a comparison will be made of attitudes before and after and a count of students assignments vs. participants will be taken. (05/13/2015)  <b>Action Plan Number: 2</b></p>

## IPR - Report on Assessment with SLO Status

Course ID	Course Name	SLO Name	SLO Status	Assessment Result Date
CHE-1A	General Chemistry I	SLO 1	Active	07/06/2015
		SLO 2	Active	07/13/2015
		SLO 2	Active	08/27/2015
		SLO 3	Active	07/13/2015
		SLO 4	Active	07/06/2015
CHE-1AH	Honors General Chemistry I	SLO 5	Active	07/06/2015
		SLO 1	Active	08/11/2015
		SLO 2	Active	08/11/2015
		SLO 3	Active	08/11/2015
		SLO 4	Active	02/21/2015
CHE-1B	General Chemistry II	SLO 4	Active	08/11/2015
		SLO 5	Active	08/11/2015
		SLO 1	Active	06/03/2014
		SLO 2	Active	06/03/2014
		SLO 3	Active	08/17/2015
CHE-1BH	Honors General Chemistry II	SLO 4	Active	03/19/2015
		SLO 5	Active	08/17/2015
		SLO 1	Active	08/27/2015
		SLO 2	Active	08/31/2015
		SLO 3	Active	08/31/2015
CHE-2A	Intro Chemistry I	SLO 4	Active	06/23/2014
		SLO 4	Active	08/31/2015
		SLO 5	Active	03/17/2015
		SLO 1	Active	03/24/2015
		SLO 2	Active	09/09/2015
CHE-2B	Intro Chemistry II	SLO 3	Active	03/25/2015
		SLO 4	Active	09/10/2015
		SLO 5	Active	09/09/2015
		SLO 6	Active	09/10/2015
		SLO 1	Active	07/13/2015
		SLO 1	Active	08/27/2015
		SLO 2	Active	08/20/2014
		SLO 3	Active	08/27/2015

Course ID	Course Name	SLO Name	SLO Status	Assessment Result Date
		SLO 4	Active	07/13/2015
		SLO 5	Active	08/27/2015
		SLO 6	Active	07/13/2015

## IPR - Report on CORs and Course Offering/Rotation with Notes and SLO Status

Course ID	Course Name	SLO Status	Official date of COR in CurricUNET	COR Notes	Course Offering and Rotation Plan
CHE-1A	General Chemistry I	Active	03/08/2012		fall
CHE-1AH	Honors General Chemistry I	Active	03/08/2012		fall
CHE-1B	General Chemistry II	Active	03/08/2012		spring
CHE-1BH	Honors General Chemistry II	Active	03/08/2012		spring
CHE-2A	Intro Chemistry I	Active	03/08/2012		fall, winter, spring, summer
CHE-2B	Intro Chemistry II	Active	03/08/2012		spring