Degree Program Student Learning Report (rev. 7/14)

Fall 2013 – Spring 2014

The Department of Mathematics & Physical Sciences in the School of Mathematices, Science & Health Sciences

Physical Science, A.S.

Effectively assessing a degree program should address a number of factors:

1) Valid student learning outcomes should be clearly articulated;
2) Valid assessment measures should be used, consistent with the standards of professional practice;
3) There should be evidence that assessment data are being used by faculty to make necessary instructional or assessment changes; and there should be evidence that instructional or assessment changes are being implemented to improve student learning.

PART 1 (A & B)

Relationship of Degree Program Learning Outcomes to Departmental and University Missions

A. Clearly state the school, department and degree program missions.

University Mission	School Mission	Department Mission	Degree Program Mission
Our mission is to ensure students develop the skills and knowledge required to achieve professional and personal goals in dynamic local and global communities.	Central to the mission of the School is the preparation of students to achieve professional and personal goals in their respective disciplines and to enable their success in	The mission of the Department of Mathematics and Physical Sciences at Rogers State University is to support students in their pursuit of knowledge in mathematics and physical science	The Associate of Science in Physical Science consists of general education curriculum and courses supporting other departmental programs. In support of the mission of the university,

University Mission	School Mission	Department Mission	Degree Program Mission
	dynamic local and global communities. Three departments comprise this School, the Departments of Biology, Health Science, and Math and Physical Science. These departments pledge to deliver existing and newly developed programs that meet student demands, and to be responsive to the evolving culture of academia in general and the sciences in particular. Our Strategy is to foster an		the school, and the department, the degree seeks to provide a solid general education component for all university students, provide curriculum in the physical sciences for students who are preparing for a baccalaureate-granting program, and provide programs of study to students presently in the work force, allowing them the opportunity to continue their education.

B. Clearly state school purposes, department purposes and degree program student learning outcomes. Align student learning outcomes with their appropriate school and department purposes, and these outcomes and purposes with their appropriate university commitments.

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
To provide quality associate, baccalaureate, and graduate degree opportunities and educational experiences which foster student excellence in oral and written communications, scientific reasoning and critical and creative thinking.	*The* ***Curriculum*** *utilizes academically rigorous methodologies delivered by* a *quality faculty who possess* a *broad base of content knowledge and promote the acquisition, application and discussion of current subject matter. The School uses effective instructional techniques, empirical and evidenced-based inquiry, innovative technology, and* a *variety of learning environments for the purpose of enhancing student*	To increase the student's critical thinking and reasoning abilities. To increase the student's understanding and appreciation of the physical world, and the ability to apply this understanding in his/her personal and professional life. To increase the student's ability to interpret and understand his/her world mathematically.	Demonstrate problem solving skills through critical thinking and the scientific method in mathematics and science courses. Apply problem solving skills through critical thinking and the scientific method. Explain and predict quantitative, analytical and graphical situations.

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
	learning	To increase the student's awareness of the benefits of incorporation of technology into Science and Math studies.	
To promote an atmosphere of academic and intellectual freedom and respect for diverse expression in an environment of physical safety that is supportive of teaching and learning.	The School promotes a challenging, positive, and inquisitive ***Collegial*** environment of high ethical standards and of frequent interactions between faculty and students to foster independent thought and the collegial exchange of ideas.		
To provide a general liberal arts education that supports specialized academic program sand prepares students for lifelong learning and service in a diverse society.	The School recognizes the importance of scientific literacy in general education and its contribution to the liberal studies curriculum of the university.	To prepare a student to matriculate into a four-year degree program in math or science-related fields.	Demonstrate an ability to design and conduct experiments, as well as to analyze and interpret data.
To provide students with a diverse, innovative faculty dedicated to excellence in teaching, scholarly pursuits and continuous improvement of programs.			
To provide university-wide student services, activities and resources that complement academic programs.			
To support and strengthen student, faculty and administrative structures that promote shared governance of the institution.			
To promote and encourage student, faculty, staff and community interaction in a positive academic climate that creates opportunities for cultural, intellectual and personal	Our commitment to ***Service*** enhances the public welfare and economic development potential of our region by cultivating strategic partnerships with health and science-related industries,	To serve as a resource for the community, utilizing the expertise of the faculty.	

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
enrichment for the University and the communities it serves.	secondary and higher education institutions, and through active participation and leadership in civic and professional organizations by our faculty and students. These collaborative efforts are based on the belief that through shared relationships, service reinforces and strengthens learning, and learning reinforces and strengthens service. An emphasis of service encourages social awareness and responsibility among faculty and students.		

PART 2

Discussion of Instructional Changes Resulting from 2012-2013 Degree Program Student Learning Report

List and discuss all instructional or assessment changes proposed in Part 5 of last year's Degree Program Student Learning Report, whether implemented or not. Any other changes or assessment activities from last year, but not mentioned in last year's report, should be discussed here as well. Emphasis should be placed on student learning and considerations such as course improvements, the assessment process, and the budget. If no changes were planned or implemented, simply state "No changes were planned or implemented."

Instructional or Assessment Changes	Changes Implemented (Y/N)	Impact of Changes on Degree Program Curriculum or Budget
No changes.		

PART 3

Discussion About the University Assessment Committee's 2012-2013 Peer Review Report

The University Assessment Committee in its Degree Program Peer Review Report provided feedback and recommendations for improvement in assessment. List or accurately summarize all feedback and recommendations from the committee, and state whether they were implemented or will be implemented at a future date. If they were not or will not be implemented, please explain why. If no changes were recommended last year, simply state "No changes were recommended."

Feedback and Recommended Changes from the University Assessment Committee	Suggestions Implemented (Y/N)	Changes that Were or Will Be Implemented, or Rationale for Changes that Were Not Implemented
Department purposes and student learning outcomes listed in a way that looks like one-to-one alignment, but	Y	No curricular or budgetary impact is expected. However, the listed in a way that looks like one-to-one alignment, but alignment of the student learning outcomes and the corresponding based on content it is not clear whether they align department purposes are now presented in a clearer format.
Make explicit that all students listed are AS majors	Y	The low number of students assessed in the MPS Program assessment is equivalent to the number of majors in those degree programs. The students who are not assessed are majoring in other programs outside of the MPS Department and therefore, cannot be included in the Program assessment. This will be listed along with the assessment data.
Goal is 50% of students on the majors list-why 50% rather than a higher percentage?	Y	Due to the low sample number, it is difficult to use a higher percentage of students as the assessment goal (i.e. 70% of 2 students vs. 50% of 2 students).
3b and 4a missing data for 12-13.	Y/N	Data for 3b is missing because the faculty member responsible for this information in both years has left institution and resides overseas making acquisition of the data impossible.

PART 4

Analysis of Evidence of Student Learning Outcomes

For all student learning outcomes (as listed in Part 1 B above), describe the assessment measures and performance standards used, as well as the sampling methods and sample sizes. For each measure, document the results of the activity measured and draw relevant conclusions related to strengths and weaknesses of their performance.

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
1a. Demonstrate problem solving skills through critical thinking and the scientific method in mathematics and science courses.	1a. Student scores from CHEM 1415: General Chemistry II on the American Chemical Society (ACS) academic assessment exam.	1a. At least 50% of students who take the American Chemical Society (ACS) standardized exam will score in the 36th percentile or higher.	1a. Student scores for AS degree majors from CHEM 1415: General Chemistry II on the American Chemical Society (ACS) academic assessment exam.	1a. Only AS program majors sampled. 1 (13-14) 3 (12-13) 3 (11-12) 5 (10-11) 2 (09-10) 13 Total	1a. 100% (1/1) of students met the assessment performance standard in 2012-13; 0% (0/3) of students met the assessment performance standard in 2012-13; 66.7% (2/3) of students met the assessment performance standard in 2011-12; 60% (3/5) of students met the assessment performance standard in 2010-11; 100% (2/2) of students met the assessment performance standard in 2009-10. A 4-year "moving average" showed that 12/12 (100%, N = 12) students met the assessment performance standard.	1a. A majority of students in CHEM 1415 possess basic knowledge of chemistry, and have an understanding of its principles and their applications. With small N annual fluctuations are to be expected. Keeping a moving average of the data reveals any on-going trends.	1a. Y. (2013-14) N (2012-13) Y (2011-12) Y (2010-11) Y (2010-09) Y: four year avg.
	1b. **Indirect Measures**: Student (on the majors	1b. At least 70% of students earned a	1b. Student scores from three topics in MATH 1613	3 (13-14) 6 (12–13) 12(11-12) 21 Total	1b. 3 of 3 students (majors) taking MATH 1613 Trigonometry (13-14) scored 70% or better	1b. Trigonometry assessment (went from the last two exams to all four exam) in 13-14. 3 of 3	Y

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
	list) scores on hourly exams in MATH 1613 Trigonometry.	grade of 70% or better on the four hourly exams in MATH 1613. Trigonometry	Trigonometry.		on the "four" exams.	(100%) made an A in the class, representative of total student achievement.	
	Direct Measures: During the year 13-14 in MATH 1613, three topics (from the course description) were evaluated. These topics included trigonometric functions, inverse trigonometric functions, and complex numbers.	The Performance Standard for MATH 1613 (Trigonometry) read "At least 70% of students (on the majors list) will earn a grade of 70% or better on three selected homework assignments in MATH 1613."			3 of 3 (100%) of the students (on the majors list) taking a trigonometry class (scored 70% or better on the homework assignment "trigonometric functions"). 3 of 3 (100%) of the students (on the majors list) taking a trigonometry class (scored 70% or better on the homework assignment "inverse trigonometric functions"). 3 of 3 (100%) of the students (on the majors list) taking a trigonometry class (scored 70% or better on the homework assignment "complex numbers").	The use of direct measurements allowed for better understanding of student learning trends within the scope of the course.	Y
	1c. Student scores in MATH 2364 on four sections	1c.) At least 50% of students (on the majors list) will earn a	1c. Students scores from MATH 2364.	1c. 14 (12-13)	1c. 64% (9/14) of students met the assessment performance standard in 2012-2013 and 60% (3/5) in 2011-12. For two years	1c. Students possess knowledge and understanding of basic principles and applications of calculus. This is	1c. Y (11-12) Y(12-13) No data for Y(13-14) Y: (Two year

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
	related to various application of integration; geometrical (measures of geometric shapes) and physical problems (masses and work).	grade of 70% or better on assignments and exam scores related to two sections pertaining to applications of integration; geometrical (measures or geometric shapes) and physical problems (masses and work).			the performance is 63.2% (12/19). The difference between average scores of >70% an <70% is 86.56-13.38 = 32 which may be attributed to individual attitudes of students (in 2011-2012 this equaled 32).	necessary for their successl in Engineering Physics I and further courses.	Average)
	1d. Student scores on PHYS 2015 Engineering Physics I lecture exams and unit laboratory reports.	1d. Students must score 70% or greater on three lecture exams and on unit laboratory reports.	1d. Student scores from Engineering Physics I lecture and laboratory	1d. 9 AY13-14 Only AS majors sampled.	1d. 8/9 (89%) students completed the course with a 70% or higher grade. 8/9 (89%) scored a 70% or higher on unit laboratory reports. 4/9 (44%) scored 70% or higher on 3 hourly lecture exams.	1d. Program majors were able to apply general physics principles to solving complex physics problems.	1d. Y/N (2013-14) Y (2011 – 12) N (2010 – 11) Y (2010 - 09 Y: four year average
2. Apply problem solving skills through critical	2 Student scores on Titration lab and Beers Law lab in	2. At least 50% of CHEM 1415 students who successfully	2. Student scores for AS degree majors on these labs for	2. 3 (13-14) 3 (12-13) 3 (11-12) 5 (10-11)	2. 100% (3/3) of students met the assessment performance standard in 2013-14; 100% (3/3) of students met the	2. This measure was met in four of the past five years. With small N annual fluctuations are to be expected. Keeping a	2. Y (2013-14) Y (2012-13) Y (2011-12) N (2010-11) Y (2010-09)

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
thinking and the scientific method.	CHEM 1415: General Chemistry CHEM 1415: General Chemistry II.	complete CHEM 1415: General Chemistry II will earn a grade of 70% or higher.	CHEM 1415.	2 (09-10) 16 Total	assessment performance standard in 2012-13; 100% (3/3) of students met the assessment performance standard in 2011-12; 40% (2/5) of students met the assessment performance standard in 2010-11; 100% (2/2) of students met the assessment performance standard in 2009-10;. A 4-year “moving average” showed that 11/14 (78%, N = 14) students met the assessment performance standard.	moving average of the data reveals any on-going trends.	Y: four year avg
3. Explain and predict quantitative, analytical and graphical situations.	3a. Direct measure: Unit laboratory reports in PHYS 1114: General Physics and 2015 Engineering Physics I. 3b. Student scores in two	3a. At least 50% of students will average 70% or better on unit laboratory reports in PHYS 1114: General Physics I and PHYS 2015 Engineering Physics I. 3b. At least 50% of	3a. Unit laboratory reports in PHYS 1114: General Physics I and PHYS 2015 Engineering Physics I. 3b. Student scores from	3a. Sample includes only AS majors. 15(12 -13) 4 (11-12) 4 (10-11) 10 (09-10) 33 Total 3b.No data	3a. 13/15 (87%) of MPS majors met the assessment performance standard. [scored a semester total of 70% or higher on unit laboratory reports in PHYS1114 and PHYS 2015. 3b. No data available as faculty member left RSU	3a. A majority of students in PHYS1114 & PHYS2015 were able to show their ability to design and conduct experiments, as well as to analyze and interpret the data using mathematical/graphical tools.	3a. Y(2012-13) Y (2011-12) N (2010-11) Y (2010-09) Y: four year avg 3b. Y (09-10)

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
	sections related to various applications of integration: geometrical (measures of geometric shapes) and physical problems (masses and work).	students will earn a grade of 70% or better on assignments and exams scores related to two sections pertaining to applications of integration: geometrical (measures of geometric shapes) and physical problems (masses and work).	MATH 2364: Calculus II.	available for (12-13) as faculty member left RSU.			Y (10-11) Y (11-12) Y: Three year Ave
4. Design and conduct experiments, as well as to analyze and interpret data.	4a. Student lab grade scores in CHEM 1415 General Chemistry II.	4a. At least 50% of students who successfully complete CHEM 1415: General Chemistry II will earn a lab grade of 70% or higher.	4a. Student scores for AS degree majors on the labs for CHEM 1415 General Chemistry II.	4a. Only AS program majors sampled. 3 (13-14) 3 (12-13) 3 (11-12) 5 (10-11) 2 (09-10) 16 Total	4a. 100% (3/3) of students met the assessment performance standard in 2013-14; 100% (3/3) of students met the assessment performance standard in 2012-13; 100% (3/3) of students met the assessment performance standard in 2011-12; 60% (3/5) of students met the assessment performance standard in 2010-11;	4a. A majority of students in CHEM 1415 were able to design and conduct experiments, and successfully analyze and interpret the data gathered from them. With small N annual fluctuations are to be expected. Keeping a moving average of the data reveals any on-going trends.	4a. Y (2013-14) Y (2012-13) Y (2011-12) Y (2010-11) Y (2010-09) Y: four year avg

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
					100% (2/2) of students met the assessment performance standard in 2009-10;. A 4-year "moving average" showed that 11/14 (78%, N = 14) students met the assessment performance standard.		
	4b. **Direct measure**: Unit laboratory reports in PHYS 1114: General Physics I and 2015 Engineering Physics	4b. At least 50% of students will average 70% or better on Unit laboratory reports in PHYS 1114: General Physics I and PHYS 2015 Engineering Physics I.	4b. Unit laboratory reports in PHYS 1114: General Physics I and PHYS 2015 Engineering Physics I.	4b.Only AS program majors sampled. 15(12 -13) 4 (11-12) 4 (10-11) 10 (09-10) 33 Total	4b. 13/15 (87%) of MPS majors met the assessment performance standard. [scored a semester total of 70% or higher on unit laboratory reports in PHYS1114 and PHYS 2015]	4b. A majority of students in PHYS1114 and PHYS2015 were able to show their ability to design and conduct experiments, as well as to analyze and interpret the data using mathematical/graphical tools.	4b. Y(2012-13) Y (2011-12) N (2010-11) Y (2010-09) Y: four year avg

PART 5

Proposed Instructional Changes Based on Conclusions Drawn from Evidence Presented Above

State any proposed instructional or assessment changes to be implemented for the next academic year. They should be based on conclusions reported in Part 4 (above) or on informal activities, such as faculty meetings and discussions, conferences, pilot projects, textbook adoption, new course proposals, curriculum modifications, etc. Explain the rationale for these changes and how they will impact student learning and other considerations, such as curriculum, degree plan, assessment process, or budget. If no changes are planned, simply state "No changes are planned."

Student Learning Outcomes	Instructional or Assessment Changes	Rationale for Changes	Impact of Planned Changes on Student Learning and Other Considerations.
Faculty plans to design measure(s) to assess our last program student learning outcome of "To increase the student's awareness of the benefits of incorporation of technology into Science and Math studies."			

PART 6

Shared Pedagogical Insight that Improves Student Learning or Classroom Engagement

(OPTIONAL) If your department or a faculty member has developed a method or technique of teaching that seems especially effective in improving student learning or student engagement in the classroom, please provide a brief description below. More detail can be communicated during the face to face peer review session.

Description
1**. Dr. Grenier** utilizes graphing calculators in his Calculus I class to allow students to understand the abilities and limitations of technology to analyze calculus problems. He also uses Maple software in his Calculus III class to model and analyze complex multivariable problems in real world scenarios. 2. **Dr. Voska's** students in General Chemistry and Organic Chemistry use the OU Supercomputing Center for Education & Research (OSCER) to construct and analyze models of molecules. This also helps them develop their abstract visualization skills. 3. **Dr. Voska's** Organic Chemistry II students prepare a written and oral presentation that relates chemistry to their everyday consumer experience. Last year they described the history of a consumer product and identified the functions of ingredients on the ingredients label. This year they will present chemistry topics related to food and cooking.

PART 7 (A & B)

Assessment Measures and Faculty Participation

A. Assessment Measures:

1) How many different assessment measures were used? 14

2) List the direct measures (see rubric):

Trigonometry (MATH 1613): This year (13-14) in MATH 1613, three topics (from the course description) were evaluated. These topics included:

1. Trigonometric functions,
2. Inverse trigonometric functions, and
3. Complex numbers.

General Chemistry II (CHEM 1415): Student scores on:

1. Tritration Lab and
2. Beer's Law Lab.

Calculus (MATH 2364):

1. Student scores on homework with particularly selected assignments.
2. Student scores on and student research projects.

General Physics I (PHYS 1114): Lecture exams and unit laboratory reports.

Engineering Physics (PHYS 2015): Lecture exams and unit laboratory reports.

3) List the indirect measures (see rubric):

Trigonometry (MATH 1613): Students' successful completion of the course with 70% or better in overall final grade.

General Chemistry II (CHEM1415): Student scores on the ACS exam. Composite student laboratory grades.

Calculus (MATH 2364): Students final grades for the course.

General Physics I (PHYS 1114): None

Engineering Physics (PHYS 2015): None

B.

1) Provide the names and signatures of all faculty members who contributed to this report and indicate their respective roles:

Faculty Members	**Roles in the Assessment Process** (e.g., collect data, analyze data, prepare report, review report, etc.)	**Signatures**
Dr. Doug Grenier	Collected and analyzed math assessment data for MATH 1613.	
Mr. Sam Richardson, Assistant Professor of Mathematics	Collected and analyzed math assessment data for MATH 1613.	Sam Richardson no longer works at RSU and is unavailable for a signature.
Dr. Min Soe, Professor of Physics	Collected and analyzed physics assessment data for PHYS 1114 and PHYS 2015.	
Dr. Kirk Voska, Professor of Chemistry	Collected and analyzed chemistry assessment data for CHEM 1415.	
Dr. Kasia Roberts, Professor of Chemistry	Collected and analyzed chemistry assessment data for CHEM 1415.	
Dr. Jalalidin Jaenbai, Associate Professor of Mathematics	Collected and analyzed math assessment data for MATH 2364 Calculus II.	Dr. Jaenbai no longer works at RSU and has moved out of the country.

2) Reviewed by:

Titles	**Names**	**Signatures**	**Date**
Department Head	Dr. Jamie M. Graham		
Dean	Dr. Keith Martin		

RUBRIC FOR STUDENT LEARNING STUDENT LEARNING REPORT

1) A. Are the school, department and program missions clearly stated?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
The program, department, and school missions are clearly stated.	The program, department, and school missions are stated, yet exhibit some deficiency (e.g., are partial or brief).	The program, department, and school missions are incomplete and exhibit some deficiency (e.g., are partial or brief).	The program, department, and school missions are not stated.

B. Are student learning outcomes and department purposes aligned with university commitments and school purposes?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
Student learning outcomes and department purposes are aligned with university commitments and school purposes.	Student learning outcomes and department purposes demonstrate some alignment with university commitments and school purposes.	Student learning outcomes and department purposes demonstrate limited alignment with university commitment and school purposes.	Student learning outcomes and department purposes do not demonstrate alignment with university commitment and school purposes.

2) How well did the department incorporate instructional or assessment changes from last year's report or from other assessment activities?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
All planned changes were listed, whether they were implemented or not, and their impact on curriculum or program budget was discussed thoroughly.	Most planned changes were listed, and their status or impact on curriculum or program budget was discussed.	Some planned changes were listed, and their status or impact on curriculum or program budget was not clearly discussed.	No planned changes were listed, and their status or impact on curriculum or program budget was not discussed.

3) Did the department include peer review feedback and provide rationale for implementing or not implementing suggestions?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
All reviewer feedback was listed, and for each suggestion a clear rationale was given for its being implemented or not.	Most reviewer feedback was listed, and for most suggestions a rationale was given for their being implemented or not.	Some reviewer feedback was listed, and for some suggestions a rationale was given for their being implemented or not.	Feedback from reviewers was not included.

4) A. Are the student learning outcomes listed and measurable?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
All student learning outcomes are listed and measurable in student behavioral action verbs (e.g., Bloom's Taxonomy).	Most student learning outcomes are listed and measurable in student behavioral action verbs (e.g., Bloom's Taxonomy).	Some student learning outcomes are listed and measurable in student behavioral action verbs (e.g., Bloom's Taxonomy).	Student learning outcomes are either not listed or not measurable.

B. Are the assessment measures appropriate for the student learning outcomes?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
All assessment measures are appropriate to the student learning outcomes.	Most assessment measures are appropriate to the student learning outcomes.	Some assessment measures are appropriate to the student learning outcomes.	None of the assessment measures are appropriate to the student learning outcomes.

C. Do the performance standards provide a clearly defined threshold at an acceptable level of student performance?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
All performance standards provide a clearly defined threshold at an acceptable level of student performance.	Most performance standards provide a clearly defined threshold at an acceptable level of student performance.	Some of the performance standards provide a clearly defined threshold at an acceptable level of student performance.	No performance standards provide a clearly defined threshold at an acceptable level of student performance.

D. Is the sampling method appropriate for all assessment measures?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
The sampling methodology is appropriate for all assessment measures.	The sampling methodology is appropriate for most assessment measures.	The sampling methodology is appropriate for some assessment measures.	The sampling methodology is appropriate for none of the assessment measures.

E. Is the sample size listed for each assessment measure?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
Sample size was listed for all assessment measures.	Sample size was listed for most assessment measures.	Sample size was listed for some assessment measures.	Sample size was not listed for any assessment measures.

F. How well do the data provide clear and meaningful overview of the results?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
For all student learning outcomes the results were clear, more than a single year's results were included, and meaningful information was given that reveals an overview of student performance.	For most student learning outcomes the results were clear, more than a single year's results were included, and meaningful information was given that reveals an overview of student performance.	For some student learning outcomes the results were clear, more than a single year's results were included, and meaningful information was given that reveals an overview of student performance.	For none of the student learning outcomes were the results clear, more than a single year's results were included, and meaningful information was given that reveals an overview of student performance.

G. Are the conclusions reasonably drawn and significantly related to student learning outcomes?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
All conclusions are reasonably drawn and significantly based on the results and related to the strengths and weaknesses in student performance.	Most conclusions are reasonably drawn and significantly based on the results and related to the strengths and weaknesses in student performance.	Some conclusions are reasonably drawn and significantly based on the results and related to the strengths and weaknesses in student performance.	No conclusions are reasonably drawn and significantly based on the results or related to the strengths and weaknesses in student performance.

H. Does the report indicate whether the performance standards were met?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped

Stated for all performance standards.	Stated for most performance standards.	Stated for some performance standards.	Not stated for any performance standard.

5) How well supported is the rationale for making assessment or instructional changes? The justification can be based on conclusions reported in Part 4 or on informal activities, such as faculty meetings and discussions, conferences, pilot projects, textbook adoption, new course proposals, curriculum modifications, etc. Explain the rationale for these changes and how they will impact student learning and other considerations, such as curriculum degree plan, assessment process, or budget.

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
All planned changes are specifically focused on student learning and based on the conclusions. The rationale for planned changes is well grounded and convincingly explained.	Most planned changes are specifically focused on student learning and based on the conclusions. The rationale for planned changes is mostly well grounded and convincingly explained.	Some planned changes are specifically focused on student learning and based on the conclusions. The rationale for planned changes is lacking or is not convincingly explained.	No planned changes are specifically focused on student learning and based on the conclusions. There is no rationale.

6) Did the faculty include at least one teaching technique they believe improves student learning or student engagement in the classroom?

Yes	No		
The faculty has included at least one teaching technique they believe improves student learning or student engagement in the classroom.	The faculty has not included any teaching techniques they believe improve student learning or student engagement in the classroom.		

7) A. How well did the faculty vary the assessment measures?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
Assessment measures vary and include multiple direct measures and at least one indirect measure. The number of measures is consistent with those listed.	Assessment measures vary, but they are all direct. The number of measures is consistent with those listed.	Assessment measures do not vary or are all indirect. There is some inconsistency in the number of measures recorded and the total listed.	Assessment measures are not all listed or are listed in the wrong category. The total number of measures is not consistent with those listed.

B. Does the list of faculty participants clearly describe their role in the assessment process?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
The faculty role is clearly identified and it is apparent that the majority of the faculty participated in the process. The roles are varied.	The faculty role is identified and it is apparent that the majority of the faculty participated in the process. The roles are not varied.	The faculty roles are not identified. Few faculty participated.	The faculty roles are not identified. Faculty participation is not sufficiently described to make a determination about who participated.

EXPLANATION & EXAMPLES OF DIRECT AND INDIRECT EVIDENCE

DIRECT EVIDENCE of student learning is tangible, visible, self-explanatory evidence of exactly what students have and haven't learned. Examples include:

1) Ratings of student skills by their field experience supervisors.
2) Scores and pass rates on licensure/certification exams or other published tests (e.g. Major Field Tests) that assess key learning outcomes.
3) Capstone experiences such as research projects, presentations, oral defenses, exhibitions, or performances that are scored using a rubric.
4) Written work or performances scored using a rubric.
5) Portfolios of student work.
6) Scores on locally-designed tests such as final examinations in key courses, qualifying examinations, and comprehensive examinations that are accompanied by test blueprints describing what the tests assess.
7) Score gains between entry and exit on published or local tests or writing samples.
8) Employer ratings of the skills of recent graduates.
9) Summaries and analyses of electronic class discussion threads.
10) Student reflections on their values, attitudes, and beliefs, if developing those are intended outcomes of the program.

INDIRECT EVIDENCE provides signs that students are probably learning, but the evidence of exactly what they are leaning is less clear and less convincing. Examples include:

1) Course grades.
2) Assignment grades, if not accompanied by a rubric or scoring guide.
3) For four year programs, admission rates into graduate programs and graduation rates from those programs.
4) For two year programs, admission rates into four-year institutions and graduation rates from those programs.
5) Placement rates of graduates into appropriate career positions and starting salaries.

6) Alumni perceptions of their career responsibilities and satisfaction.
7) Student ratings of their knowledge and skills and reflections on what they have learning over the course of the program.
8) Those questions on end-of-course student evaluations forms that ask about the course rather than the instructor.
9) Student/alumni satisfaction with their learning, collected through surveys, exit interviews, or focus groups
10) Honors, awards, and scholarships earned by students and alumni.

Suskie, L. (2004). *Assessing Student Learning: A Common Sense Guide*. Anker Publishing Company: Bolton, MA

Documentation of Faculty Assessment

8) A. How many full time faculty (regardless of department affiliation) teach in the program? six

B. Provide the names and signatures of all faculty members who contributed to this report and indicate their respective roles:

Faculty Members	**Roles in the Assessment Process** (e.g., collect data, analyze data, prepare report, review report, etc.)	**Signatures**
Dr. Doug Grenier, Professor of Mathematics	Collected and analyzed math assessment data for MATH 1613.	Doug Gr
Mr. Sam Richardson, Assistant Professor of Mathematics	Collected and analyzed math assessment data for MATH 1613.	Sam Richardson no longer works at RSU and is unavailable for a signature.
Dr. Min Soe, Professor of Physics	Collected and analyzed physics assessment data for PHYS 1114 and PHYS 2015.	Min Soe
Dr. Kirk Voska, Professor of Chemistry	Collected and analyzed chemistry assessment data for CHEM 1415.	Kirk Voska
Dr. Kasia Roberts, Professor of Chemistry	Collected and analyzed chemistry assessment data for CHEM 1415.	Kasia Roberts
Dr. Jalalidin Jaenbai, Associate Professor of Mathematics	Collected and analyzed math assessment data for MATH 2364 Calculus II.	Dr. Jaenbai no longer works at RSU and has moved out of the country.

9) Reviewed by:

Titles	**Names**	**Signatures**	**Date**
Department Head	Dr. Jamie M. Graham	Jamie M. Graham	9/18/14
Dean	Dr. Keith Martin	Keith W. Mart	9/22/2014