

Academic Assessment Report - AY 2012-2013 (FA12 + SP13)

College, School/Department, Name of Program: NJCSTM M.S. Biotechnology Science

NOTE: this stand-alone master's degree program this AY underwent formal program review.

Program SLOs:

(List Program SLOs)

SLO1: (Applied Knowledge) Graduates will possess adequate analytical laboratory and research skills, demonstrate instrumentation operation and applicable software knowledge currently used in biotechnology and related disciplines (genetic engineering, analytical chemistry, bioinformatics, molecular & cellular biology) to enter the biotech or pharmaceutical industry. (KU 1, KU 2, KU 4)

SLO 2: (Holistic Knowledge) Graduates will be able to combine critical thinking skills and analytical knowledge to design, perform, and analyze scientific problems in the laboratory both as an individual and as effective and productive project team members, and know the origins of biotechnology and its importance to society. (KU 1, KU 2, KU 4)

SLO3: (Ethics) Graduates will have adequate knowledge of the bioethical standards of the science profession and be able to exercise ethical awareness.

SLO4: (Communication) Graduates will be able to verbally express themselves and communicate scientific comprehension and knowledge in both formal oral presentations and in written format clearly, concisely and accurately. (KU 1, KU 4)

*** Note: 2011-2012 SLO # 5 merged with SLO # 2 as both were aspects of holistic knowledge**

Program Level Student Learning Outcomes <i>(Add rows for additional SLOs)</i>	Assessment Measure(s) <i>(Add rows if necessary)</i>	Assessment Criteria <i>(Describe how data is collected--rubric, survey, etc.)</i>	Results of Assessment <i>(Specific to Data Collected)</i>	Action Taken <i>(Closing the Loop: New action or follow up from last Assessment Report)</i>
SLO #1 (Applied Knowledge)	Direct Measure 1:	STME 5140 Lab Practical SWR (Scored With Rubric)	Lab practical rubric for assessing critical thinking & holistic knowledge average scores were 9.1 / 12 & 4.6 / 6 each for a 76 %; for applied knowledge it was 10.5 / 12 for 88 %.	Discuss with MS Biotech program coordinator ways in which critical thinking can be addressed in STME 5140 instruction as well as STME 5170 instruction. Applied knowledge score in STME 5140 is strong, hence no action there needed.
	Direct Measure 2:	STME 5170/BIO5700 Lab Practical SWR	Lab practical rubric for assessing applied knowledge & holistic knowledge average scores were 8.4 /12 (70%) and 13.2 /18 (73%) respectively.	Discuss with MS Biotech program coordinator ways in which applied & holistic knowledge can be addressed in STME 5170 & STME 5140 instruction.
	Direct Measure 3:	STME 5410-15 or STME 5400 paper and presentation SWR	Students' average score on rubric for assessing written project paper was 90 % (however rubric for written paper is less than ideal); for oral presentation on project was 82 %.	Encourage PIs of student master's projects to rehearse the oral talks with their students. Have AY 2013/14 see the full implementation of the new rubric for assessing written project papers that was piloted SP13 in STME 5400 be used in STME 5410-15.
	Direct Measure 4:	STME 5615 Paper SWR	Class mean 4.0 / 5 (n=7)	No action needed.
	Direct Measure 5:	STME 5810 Paper SWR	Class mean 4.2 / 5 (n=7)	No action needed.
	Indirect Measure:	Graduating Student Survey	Only 3 students worked on the survey with only 2 completing it (14 students were asked to take it).	Work to increase participation of graduating students to complete the GSS perhaps by including it in the course syllabi for culminating courses.
	SLO #2 (Holistic Knowledge)	Direct Measure 1:	STME 5103 Paper SWR	Class mean scored in the "exemplary work" category of rubric (n=17)

	Direct Measure 2:	STME 5140 Lab Practical SWR	Lab practical rubric for assessing critical thinking & holistic knowledge average scores were 9.1 / 12 & 4.6 / 6 each for a 76 %.	Discuss with MS Biotech program coordinator ways in which holistic knowledge can be addressed in STME 5140 instructor.
	Direct Measure 3:	STME 5170/BIO5700 Lab Practical SWR	Lab practical rubric for assessing applied knowledge & holistic knowledge average scores were 8.4 /12 (70%) and 13.2 /18 (73%) respectively.	Discuss with MS Biotech program coordinator ways in which applied & holistic knowledge can be addressed in STME 5170 & STME 5140 instruction.
	Direct Measure 4:	STME 5410-15 or STME 5400 paper and oral presentation SWR	Students' average score on rubric for assessing written project paper was 90 % (however rubric for written paper is less than ideal); for oral presentation on project was 82 %.	Encourage PIs of student master's projects to rehearse the oral talks with their students. Have AY 2013/14 see the full implementation of the new rubric for assessing written project papers that was piloted SP13 in STME 5400 be used in STME 5410-15.
	Direct Measure 5:	STME 5615 Paper SWR	Class mean 4.0 / 5 (n=7)	No action needed.
	Direct Measure 6:	STME 5810 Paper SWR	Class mean 4.2 / 5 (n=7)	No action needed.
	Indirect Measure:	Graduating Student Survey	Only 3 students worked on the survey with only 2 completing it (14 students were asked to take it).	Work to increase participation of graduating students to complete the GSS perhaps by including it in the course syllabi for culminating courses.
SLO #3 (Ethics)	Direct Measure 1:	STME 5013 Reaction Paper to Kean Academic Integrity Policy SWR	Class mean scored in the "exemplary work" category of rubric (n=17)	No action needed.
	Direct Measure 2:	STME 5020 Certificate of completion of NIH training course of human participants in research.	All enrolled students in the Bioethics course submitted satisfactory completion of the NIH training online.	No action needed.
	Indirect Measure:	Graduating Student Survey	Only 3 students worked on the survey with only 2 completing it (14 students	Work to increase participation of graduating students to complete the GSS perhaps by including it in the course

			were asked to take it).	syllabi for culminating courses.
SLO #4 (Communication)	Direct Measure 1:	STME 5103 Paper SWR	Class mean scored in the “exemplary work” category of rubric (n=17)	No action needed.
	Direct Measure 2:	STME 5410-15 or STME 5400 paper and oral presentation SWR	Students’ average score on rubric for assessing written project paper was 90 % (however rubric for written paper is less than ideal); for oral presentation on project was 82 %.	Encourage PIs of student master’s projects to rehearse the oral talks with their students. Have AY 2013/14 see the full implementation of the new rubric for assessing written project papers that was piloted SP13 in STME 5400 be used in STME 5410-15.
	Direct Measure 3:	STME 5615 Presentation SWR	Class mean 4.1 / 5 (n=7)	No action needed.
	Direct Measure 4:	STME 5810 Paper SWR	Class mean 4.2 / 5 (n=7)	No action needed.
	Indirect Measure:	Graduating Student Survey	Only 3 students worked on the survey with only 2 completing it (14 students were asked to take).	Work to increase participation of graduating students to complete the GSS perhaps by including it in the course syllabi for culminating courses.