

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

College, School/Department, Name of Program: NJCSTM

BS SCI & TECH / Math, Chemistry or Biology Options + MA Instruction & Curriculum / SCI & TECH / Math, Bio or Chem

*Note: AY 12/13 had the following enrolled in this degree option: 10 students in Year 5 (9 math; 1 chem); 14 students in Year 4 (11 math; 2 chem; 1 bio); 18 students in Year 3; 10 students each in Years 2 & 1. The information contained herein is reported in the context of total enrollment in the common courses that students in this option take in common with other NJCSTM program options (STME 4610, 1603, 3610, GE 2024). The GSS (graduating student survey) was compared for those in year 4 vs year 5 of this 5 year option.*

### Program SLOs:

*(List Program SLOs)*

SLO1: (Critical Thinking) Graduates will be professionals in math education or science education with both highly developed practical and critical thinking skills with the potential to further their professional development. (KU1, KU2) (GE S4)

SLO2: (Content Knowledge and Leadership) Graduates will be future teacher-leaders that are sought after by school districts, and who will comprehend their role in society as well as the role of scientist-researchers who are their counterparts. (KU 1, KU2, KU3, KU4) (GE S1, S2, S3, S4, S5, V1, V2, V3, V4, V5)

SLO3: (Pedagogical Knowledge) Graduates will articulate that all learners are unique, and that different methods of pedagogy must be employed in their classrooms to enable all learners to learn. (KU 1, KU2, KU3, KU4) (GE K2, S2, S4, V4)

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. (KU1) (GE K1, K2, S1, S2, S5, V4)

SLO5: (Standards) Graduates will demonstrate the role of national, state and local standards in math and science education, and how those standards are actualized within their individual classrooms. (KU1, KU2, KU4)

**\*note: 2011-2012 SLO # 2 merged with 2011-2012 SLO # 3 as the two objectives were deemed to be interlinked.**

<b>Program Level Student Learning Outcomes</b> <i>(Add rows for additional SLOs)</i>	<b>Assessment Measure(s)</b> <i>(Add rows if necessary)</i>	<b>Assessment Criteria</b> <i>(Describe how data is collected--rubric, survey, etc.)</i>	<b>Results of Assessment</b> <i>(Specific to Data Collected)</i>	<b>Action Taken</b> <i>(Closing the Loop: New action or follow up from last Assessment Report)</i>
<b>SLO #1</b> <b>(Critical Thinking)</b>	Direct Measure 1:	STME 1603 Lab Practical SWR (Scored With Rubric)	Lab practical rubric class average on “read & interpret” was 2.9 (scale of 0 to 5); “correct code” 3.14; and “create code “ 3.5.	Freshmen students show deficiencies in their ability to read & interpret code. Next academic year need to increase focus to stress reading & correcting complex codes over creation of simple codes.
	Direct Measure 2:	STME 4610 Oral Presentation SWR	Rubrics average scores that were subpar related to critical thinking as while problem statements were generally clearly defined, students showed some deficiencies in clearly identifying consequences and implications. Repeated in-class short talks and peer-reviewed practice talks resulted in generally satisfactory final presentations (oral delivery & visual aids).	Revise rubrics to distinguish between applied and integrated knowledge and in SP14 course work with students to identify consequences of results and the need for them to reflect on their own hypotheses.
	Direct Measure 3:	STME 4610 GRE general exam score	For senior education track students, the verbal score mean was 136 (3 of which were below the minimum for next year, range was 140-153); & the quant score mean was 151 (5 of which were below the min for next year, range was 146-158).	This year’s seniors not yet held to the NJCSTM established minimum GRE scores, but SP14 seniors will be and it will be enforced hence creating incentive for preparation early on.
	Indirect Measure:	Graduating Student Survey	The May 2013 GSS had 10 bachelor respondents & 5 master’s respondents in this program option. Students report high satisfaction with their academic experience	Over 50 % response rate among education track students, hence no action needed. The education track students compared to the biotech track students saw more variability in their rating satisfaction across the University’s

			including agreement in terms of program meeting SLOs. Students were variable in their rating of satisfaction across the University in terms of learning environment.	learning environment. However, this may likely be attributed to the more cross campus degree within COE that these students experience in their Year 5 degree.
<b>SLO #2 (Content Knowledge and Leadership)</b>	Direct Measure 1:	STME 3610 Praxis I scores	The Praxis I exam score is required by the Kean College of Education in order for a student to enroll in EMSE/EDUC coursework in the second half of their bachelor's degree.	Assessment of Praxis I is done by COE, hence no action by NCJSTM needed as we simply continue in academic advisement with education track students to ensure they know the requirement.
	Direct Measure 2:	STME 3610 Poster presentation SWR	Rubrics suggest that students need to place greater emphasis on critical thinking, in particular supporting their conclusions based on evidence, & also reflecting on their assumptions.	Rubrics must be revised to distinguish between applied knowledge vs. content knowledge vs. holistic knowledge.
	Direct Measure 3:	STME 4610 Praxis II content exam score	Incomplete data (scores not required by Kean COE until they place on student teaching) but as of this report, 60 % of the affected students had passes their required Praxis II content exams.	No action needed.
	Direct Measure 4:	EMSE 5564 Graduate Comprehensive Exam SWR	Of the 12 students who completed the exam, the average score was 6.18 out of max of 8 (low score was a 5 for 1 student & high school was a 7 for 2 students)	No action needed.
	Indirect Measure 1:	Graduating Student Survey	The May 2013 GSS had 10 bachelor respondents & 5 master's respondents in this program option. Students	Over 50 % response rate among education track students, hence no action needed. The education track students compared to the biotech track students

			report high satisfaction with their academic experience including agreement in terms of program meeting SLOs. Students were variable in their rating of satisfaction across the University in terms of learning environment.	saw more variability in their rating satisfaction across the University's learning environment. However, this may likely be attributed to the more cross campus degree within COE that these students experience in their Year 5 degree.
	Indirect Measure 2:	Alumni Survey	This survey was distributed last AY hence not done this year.	No action needed.
<b>SLO #3 (Pedagogical Knowledge)</b>	Direct Measure 1:	EMSE 3220/3230 (3220 Mini TW, 3230 sample lesson and lesson plan)	In EMSE 3220 (Math educ track students) the Mini TW & microteaching results were satisfactory for all students. In EMSE 3230, the sample lesson plan average score for science educ track students was 93.8 out of 100 (range was 100 – 87)	No action needed.
	Direct Measure 2:	EMSE 5031 Paper	13 NJCSTM students of which 11 received "A", 1 received "B+" & 1 a "B"	No action needed.
	Direct Measure 3:	EMSE 5564 Student Teaching Evaluation	Administered by Teaching Performance Center at Kean, not by NJCSTM.	No action needed.
	Direct Measure 4:	EMSE 5564 Graduate Comprehensive Exam SWR	Of the 12 students who completed the exam, the average score was 6.18 out of max of 8 (low score was a 5 for 1 student & high school was a 7 for 2 students)	No action needed.
	Indirect Measure:	Graduating Student Survey	The May 2013 GSS had 10 bachelor respondents & 5 master's respondents in this program option. Students report high satisfaction with	Over 50 % response rate among education track students, hence no action needed. The education track students compared to the biotech track students saw more variability in their rating

			<p>their academic experience including agreement in terms of program meeting SLOs. Students were variable in their rating of satisfaction across the University in terms of learning environment.</p>	<p>satisfaction across the University's learning environment. However, this may likely be attributed to the more cross campus degree within COE that these students experience in their Year 5 degree.</p>
<p><b>SLO #4 (Communication)</b></p>	Direct Measure 1:	GE 2024 Oral and Written Presentation SWR	<p>For written paper rubric scores were acceptable, even the lower scores seen in "Genre/Audience" (3.63/5.0) &amp; "Grammar/Mechanics" (3.75/5.0). For the oral presentation rubric, all averaged scored were acceptable, with the lowest seen in "Fluency" (3.57/5.0).</p>	<p>ForSP14, GE 2024 instructor will change to use of Grademark feature in Turnitin.com for correcting the rough drafts and affording more analysis of student writing.</p>
	Direct Measure 2:	STME 3610 Poster Presentation SWR	<p>Rubrics suggest that students need to place greater emphasis on critical thinking, in particular supporting their conclusions based on evidence, &amp; also reflecting on their assumptions.</p>	<p>Rubrics must be revised to distinguish between applied knowledge vs. content knowledge vs. holistic knowledge.</p>
	Direct Measure 3:	STME 4610 Oral Presentation SWR	<p>Repeated in-class short talks and peer-reviewed practice talks resulted in generally satisfactory final presentations (oral delivery &amp; visual aids).</p>	<p>No action needed.</p>
	Indirect Measure:	Graduating Student Survey	<p>The May 2013 GSS had 10 bachelor respondents &amp; 5 master's respondents in this program option. Students report high satisfaction with their academic experience including agreement in terms of program meeting SLOs. Students were</p>	<p>Over 50 % response rate among education track students, hence no action needed. The education track students compared to the biotech track students saw more variability in their rating satisfaction across the University's learning environment. However, this may likely be attributed to the more cross campus degree within COE that these</p>

			variable in their rating of satisfaction across the University in terms of learning environment.	students experience in their Year 5 degree.
<b>SLO #5 (Standards)</b>	Direct Measure 1:	EMSE 3220/3230 Paper SWR	For EMSE 3230 (science educ) the curriculum outline paper average score was 89.2 out of 100 (range was 80 – 92). For EMSE 3230 (math educ) the mini TWS results for all students were satisfactory.	No action needed.
	Direct Measure 2:	STME 4610 Presentation SWR	Not explicitly assessed in this course.	Have Senior Seminar Instructor discuss with NJCSTM Education Coordinator the feasibility of developing a new instrument to assess knowledge of standards.
	Direct Measure 3:	EMSE 5031 Paper	Of the 13 students, 11 received “A” on paper, 1 received “B+” and 1 a “B”	No action needed.
	Indirect Measure:	Graduating Student Survey	The May 2013 GSS had 10 bachelor respondents & 5 master’s respondents in this program option. Students report high satisfaction with their academic experience including agreement in terms of program meeting SLOs. Students were variable in their rating of satisfaction across the University in terms of learning environment.	Over 50 % response rate among education track students, hence no action needed. The education track students compared to the biotech track students saw more variability in their rating satisfaction across the University’s learning environment. However, this may likely be attributed to the more cross campus degree within COE that these students experience in their Year 5 degree.