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

College, School/Department, Name of Program: NJCSTM BS SCI & TECH / Computational Mathematics Option

NOTE: This program option is low enrolled: 0 students AY 12/13 were in Year 5 as the one had left after bachelor's degree was earned to pursue an MBA elsewhere; 0 students AY 12/13 were in Year 4; 2 students AY 12/13 in Year 3; 0 students AY 12/13 in Year 2 (1 had been dismissed for low academic performance); 1 student AY 12/13 in Year 1 (another had been dismissed for low academic performance).

Program SLOs: *(List Program SLOs)*

SLO1: (Applied Mathematics Knowledge) Graduates will be strong candidates who may continue their education by pursuing doctoral degrees in related fields of study or otherwise seek career employment in the field of applied mathematics. (KU 1, KU2, KU3, KU4) (GE S3, V5)

SLO2: (Holistic Knowledge) Graduates will be versatile and resourceful scientist-researchers who can adjust to this ever-changing field because of their comprehensive, integrated knowledge of applied mathematics, chemistry and biology. (KU 1, KU2, KU3, KU4) (GE S3, V2, V4)

SLO3: (Critical Thinking) Graduates will be able to combine critical thinking skills and applicable practical knowledge in applied mathematics in the design, performance and analysis of computational work both as an individual and as effective and productive project team members. (KU1) (GE S3, S4)

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. (GE S1,S2,S3,V4)

SLO5: (Scientific Programming) Graduates will be proficient in scientific programming, including aspects of software engineering practice including verification and validation as well as application to modern computational architectures. (KU) (GE S3, S5)

SLO6: (Modeling) Graduates will be able to apply numerical modeling to problems in the sciences, including choice and implementation of numerical algorithms for iterative continuous and discrete systems. (GE S3, S5)

SLO7: (Optimization) Graduates will be able to optimize problems with multiple variables that depend linearly or non-linearly on many discrete or continuous variables. (GE S3)

SLO8: (Data and Visualization) Graduates will be able to manipulate, mine, and visualize large datasets. (GE S3, S5)

Program Level Student Learning Outcomes *(Add rows for additional SLOs)*	**Assessment Measure(s)** *(Add rows if necessary)*	**Assessment Criteria** *(Describe how data is collected--rubric, survey, etc.)*	**Results of Assessment** (*Specific to Data Collected*)	**Action Taken** (*Closing the Loop: New action or follow up from last Assessment Report*)
SLO #1 (Applied Math Knowledge)	Direct Measure 1:	STME 3610: Poster Presentation SWR (Scored With Rubric)	2 Year 3 students earned a grade of A in this course SP13.	No action needed.
	Direct Measure 2:	STME 4610 Oral presentation SWR		
	Direct Measure 3:	STME 4610 GRE quantitative score		
	Direct Measure 4:	ID 5800 thesis and defense SWR		
	Indirect Measure:	Graduating Student Survey		
SLO #2 (Holistic Knowledge)	Direct Measure 1:	STME 1603 Lab Practicum SWR	1 Year 1 student earned a grade of A in this course.	No action needed.
	Direct Measure 2:	STME 3610: Poster Presentation SWR	2 Year 3 students earned grades of A in this course.	No action needed.
	Direct Measure 3:	STME 4610 Oral presentation SWR		
	Direct Measure 4:	ID 5800 thesis and defense SWR		
	Indirect Measure:	Graduating Student Survey		

SLO #3 (Critical Thinking)	Direct Measure 1:	STME 1603: Lab practicum SWR	1 Year 1 student earned grade of A in this course.	No action needed.
	Direct Measure 2:	STME 3610: Poster Presentation SWR	2 Year 3 students earned grades of A in this course.	No action needed.
	Direct Measure 3:	STME 4610 Oral presentation SWR		
	Direct Measure 4:	ID 5800 thesis and defense SWR		
	Indirect Measure:	Graduating Student Survey		
SLO #4 (Communication)	Direct Measure 1:	GE 2024: Paper & presentation SWR	1 Year 1 student earned grade of C+ in this course SP13.	Sample size of 1, however, the student in question was subpar of his NJCSTM peers in terms of written and oral communication.
	Direct Measure 2:	STME 3610: Poster Presentation SWR	2 Year 3 students earned grades of A in this course.	No action needed.
	Direct Measure 3:	STME 4610 Oral presentation SWR		
	Direct Measure 4:	STME 4610 GRE verbal score		
	Direct Measure 5:	ID 5800 thesis and defense SWR		

	Indirect Measure:	Graduating Student Survey		
SLO #5 (Scientific Programming)	Direct Measure 1:	STME 1603: Lab practicum SWR	1 Year 1 student earned grade of A in this course.	No action needed.
	Direct Measure 3:	ID 5800 thesis and defense SWR		
	Indirect Measure:	Graduating Student Survey		
SLO #6 (Modeling)	Direct Measure 1:	STME 1603: Lab practicum SWR	1 Year 1 student earned grade of A in this course.	No action needed.
	Direct Measure 2:	ID 5800 thesis and defense SWR		
	Indirect Measure:	Graduating Student Survey		
SLO #7 (Optimization)	Direct Measure 1:	MATH 5631 Project SWR		
	Direct Measure 2:	ID 5800 thesis and defense SWR		
	Indirect Measure:	Graduating Student Survey		

SLO #8 (Data Mining and Visualization)	Direct Measure 1:	MATH 5631 Project SWR		
	Direct Measure 2:	ID 5800 thesis and defense SWR		
	Indirect Measure:	Graduating Student Survey		