NJ Center for Science, Technology & Mathematics (NJCSTM)
Office of Academic Affairs

Vision & Mission Statements, Goals & Objectives for the NJCSTM Academic Unit
Revised August 2011

NJCSTM Academic Unit Vision and Mission Statements
The vision of NJCSTM is to be a home for our students throughout their careers, moving beyond offering degrees, to providing professional development at all levels. The mission of NJCSTM is to serve Kean University as a multi-disciplinary scholars program in applied science and mathematics. Through an integrated curriculum, we prepare students to be well-rounded scientist-researchers and scientist-educators.

NJCSTM Goals

1. Create future teacher-leaders that are sought after by school districts throughout the state.
2. Train professionals in applied science and math with both highly developed practical and critical thinking skills and with the potential to further their professional development.
3. Recruit students from underrepresented and urban populations and have those students return to and continue to serve their communities.
4. Create a community of alumni dedicated to the growth of NJCSTM and the success of future students and themselves in advancing scientific and technological innovation.
5. Maintain a multi-disciplinary faculty in which ideas can be shared and faculty can develop outside of traditional domain areas.

NJCSTM Objectives

1. Track employment and/or continuing education of NJCSTM graduates and work to connect current students with alumni in terms of networking and mentoring opportunities.
2. Offer science and mathematics educational enrichment opportunities to the community.
3. Continue to expand recruitment into and retention within NJCSTM programs.
4. Provide resources and support for in-service science and mathematics educators.
5. Establish and maintain a notable speaker's seminar program and a visiting scholars program.
Assessment Process Overview:

NJCSTM offers a four year, full-time course of study leading toward the B.S. Science & Technology degree, with several program options (education tracks in biology, chemistry or mathematics; research tracks in computational applied mathematics or molecular biology/biotechnology; engineering science [linkage with NJ Institute of Technology]; and biomedicine (pre-physical therapy, pre-medicine, or 4+4 linkage program with Drexel College of Medicine). There is also a stand-alone M.S. Biotechnology Science program, which is available for full-time or part-time study, for students already holding a bachelor's degree in science.

Undergraduate NCJSTM students have eleven (11) core required STME courses to take as part of the requirements for the B.S. Science & Technology major. Additionally, GE 1000 Transition to Kean and GE 2024 Research & Technology are taught in NJCSTM majors only sections. These core courses provide a cohesive foundation in the integrated science and math disciplines. As such, the core courses are a primary vehicle for assessing the knowledge of our students. Beyond the STME core courses, students take other courses offered within their program option, and it is likely that no two (or very few) students take the exact same grouping of courses. Therefore, the faculty is agreed to center our assessment on the core knowledge of science/math as presented in the STME core requirements. While individual core courses have assessment tools as part of the evaluation process, culminating assessment is done in the senior capstone course, STME 4610 Science & Technology Seminar that all NJCSTM seniors take regardless of program option. In this course, assessment data are collected from assignments that require students to provide the evidence of meeting program goals. Each spring semester (STME 4610 only runs once yearly), composite data from scored student assignments will be collected and analyzed to address areas of program strengths and weaknesses and to inform our decisions ultimately resulting in program improvements.

The associated NJCSTM program assessment documents (SLOs, Curriculum Maps & Assessment Matrix for each of six major NJCSTM program/options) detail student learning outcomes by program option aligned with Kean University student learning outcomes.

* KU Student Outcomes: *Kean University graduates should be able to:*

1. Think critically, creatively and globally;
2. Adapt to changing social, economic, and technological environments;
3. Serve as active and contributing members of their communities; and
4. Advance their knowledge in the traditional disciplines (GE) and enhance their skills in professional areas.

**General Education Student Learning Outcomes**

**Knowledge:** *Students will demonstrate proficiency in knowledge and content by:*

(K1) applying the scientific method to comprehend natural concepts and processes;
(K2) evaluating major theories and concepts in social sciences;
(K3) relating historical references to literature; and
(K4) evaluating major theories and concepts in the fine arts.

**Skills:** *Students will demonstrate the skills necessary to:*

(S1) write to communicate and clarify learning;
(S2) communicate effectively through speech;
(S3) solve problems using quantitative reasoning;
(S4) think critically about concepts in multiple disciplines; and
(S5) show information literacy.