# KEAN UNIVERSITY

## NJ CENTER FOR SCIENCE, TECHNOLOGY & MATHEMATICS (NJCSTM)

(30106) B.S. in Science and Technology (Computational Mathematics Option): 124 S.H.

(EFFECTIVE: Fall/2009)

<table>
<thead>
<tr>
<th>START TERM:</th>
<th>Credits</th>
<th>TRANSFER INSTITUTIONS (X)</th>
<th>Credits</th>
</tr>
</thead>
</table>

**STUDENT NAME:**

**STUDENT ID#**

**GENERAL EDUCATION:** 34 Semester Hours (S.H.)

**ACADEMIC MAJOR REQUIREMENTS:** 59 S.H.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
<th>Course Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation Requirements:</td>
<td>14 S.H.</td>
<td>STME 2603 Probabilistic Methods in Science 4</td>
</tr>
</tbody>
</table>
| GE 1000 Transition to Kea

1 | 1 | STME 2610 Current Issues in Science & Technology 1 |
| ENG 1030 College Composition | 3 | STME 3610 Current Issues in Science & Technology II 1 |
| STME 1403 Math. & Computational Methods of Science I | 4 | CPS 2231 Computer Organization & Programming 4 |
| COMM 1402 Speech Communication As Critical Citizenship | 3 | CPS 2232 Data Structures & Algorithm Analysis 4 |
| GE 2024 Research & Technology | 3 | CPS 3250 Computer Operating Systems 3 |

**DISCIPLINARY / INTERDISCIPLINARY DISTRIBUTION REQUIREMENTS:** 20 S.H.

<table>
<thead>
<tr>
<th>Distribution</th>
<th>Credits</th>
<th>Course Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities:</td>
<td>6 S.H.</td>
<td>MATH 3451 Calculus III 3</td>
</tr>
<tr>
<td>*ENG 2403 World Literature</td>
<td>3</td>
<td>MATH 3452 Calculus IV 3</td>
</tr>
<tr>
<td>(Select one course from below)</td>
<td></td>
<td>MATH 3455 Differential Equations 3</td>
</tr>
<tr>
<td>Fine Arts or Art History</td>
<td>3</td>
<td>MATH 3120 Combinatorics 3</td>
</tr>
<tr>
<td>Music or Theater</td>
<td>3</td>
<td>MATH 3940 Numerical Analysis 3</td>
</tr>
<tr>
<td>Philosophy or Religion</td>
<td>3</td>
<td>MATH 4805 Math Modeling with Applications 3</td>
</tr>
<tr>
<td>Foreign Language* (Must take I and II for credit)</td>
<td>3</td>
<td>MATH 5410 Partial Differential Equations OR MATH 5630 Current Topics in Computational Science I 3</td>
</tr>
<tr>
<td>Interdisciplinary</td>
<td>3</td>
<td>MATH 5965 High Performance Computing OR MATH 5631 Current Topics in Computational Science II 3</td>
</tr>
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**Social Sciences:** 6 S.H.

<table>
<thead>
<tr>
<th>Social Science</th>
<th>Credits</th>
<th>Course Details</th>
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</thead>
<tbody>
<tr>
<td>*HIST 1000 History of Civil Society in America</td>
<td>3</td>
<td>STME 4610 Science &amp; Technology Seminar WE 3</td>
</tr>
<tr>
<td>(Select one course from below)</td>
<td></td>
<td>MAJOR / GE CAPSTONE COURSE: 3 S.H.</td>
</tr>
<tr>
<td>PSY 1000 General Psychology</td>
<td>3</td>
<td>MAJOR ELECTIVE: MATHEMATICS, COMPUTER SCIENCE OR SCIENCE (Select w/ advisement) 12 S.H.</td>
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**Science and Mathematics:** 8 S.H.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Course Details</th>
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<tbody>
<tr>
<td>STME 1603 Math &amp; Computational Methods of Science II</td>
<td>4</td>
<td>STME 1401 Chemical Systems I 4</td>
</tr>
<tr>
<td>STME 1601 Chemical Systems II</td>
<td>4</td>
<td>STME 2401 Physical Systems 4</td>
</tr>
<tr>
<td>STME 2601 Living Systems</td>
<td>4</td>
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**ADDITIONAL REQUIREMENTS: 16 S.H.**

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<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Course Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>STME 2403 Math. &amp; Computational Methods of Science III</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>STME 1601 Chemical Systems II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>STME 2401 Physical Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>STME 2601 Living Systems</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**FREE ELECTIVES: 15 S.H.**

(At least 50% must be at 3000 – 4000 level)

<table>
<thead>
<tr>
<th>Elective</th>
<th>Credits</th>
<th>Course Details</th>
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**TOTAL CREDITS:**

1. Required of all Freshmen and Transfers with fewer than 10 credits.
2. (G.E) General Education required course.
3. Foundations & Additional Requirements require grade of C or better, except ENG 1030 requires B or better.
4. Prerequisite of qualifying placement test score or the equivalent of MATH 1054.
5. Credit granted only upon completion of two semesters of elementary or intermediate foreign language.
6. A minimum grade of C in no more than two major courses, including capstone. A grade of B- or higher in remaining major courses.
7. WE: Writing Emphasis course.

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GENERAL EDUCATION INFO & REQUIREMENTS

Testing and Placement
Incoming freshmen and transfer students may be placed in specific GE Foundations, Developmental or ESL courses as a result of testing prior to registration. Students may be exempt from testing due to SAT scores or prior college work.

Prerequisites and Equivalencies for GE Foundations Courses

ENG 1030
Prereq: Placement testing
Equiv: ENG 1031/32; 1033/34; 1430; ENG 1020; 1400

MATH 1000
Prereq: Placement testing
Equiv: MATH 1001/02; 1003/04; 1051

COMM 1402
Prereq: CS 0411 or 0412 if required by placement testing
Equiv: ENG 1031/32; 1033/34
May be taken concurrently with ENG 1030
Equiv: COMM 1400

GE 2021-2024 Research & Technology is offered as college-based course
GE 2021 College of BPA
GE 2022 College of ED
GE 2023 College of AHSS
GE 2024 College of NAHS
Prereq: ENG 1030 or equivalent
MATH 1000 or equivalent
Equiv: GE 2020

Course Paired with Reading
Must be taken concurrently with CS 0412 if required by placement testing.

GE Distribution Courses
All courses under the General Education Disciplinary/Interdisciplinary Distribution requirements must be selected from the Approved General Education Distribution Course List, printed in Registration Bulletin. These courses are designated as GEHU, GESS, GESM, GEHPE or GECP.

GEHU Humanities
GESS Social Sciences
GESM Science and Mathematics
GEHPE Health and Physical Education

Required GE Distribution Courses
ENG 2403 is a required Humanities Distribution course with an emphasis on diversity.
HIST 1000 is a required Social Sciences Distribution course with an emphasis on diversity.

Foreign Language Credit
The three credits for a foreign language that may satisfy the GE Disciplinary/Interdisciplinary Distribution Requirement are awarded only upon successful completion of two semesters of study at the introductory or intermediate level.

Major/GE Capstone Course
A Capstone course is a major course that satisfies three credits of GE requirements. Each major guide sheet will count three credits for the Capstone as either GE credits or major credits, but not both.

UNIVERSITY REQUIREMENT

Writing-Emphasis Requirement
All students are required to complete one “Writing-Emphasis” course. The “W-E” course must be within the major portion of your program. Consult your major program advisor for specific information.

Course Prerequisites
ENG 2403: ENG 1030 (or equivalent) & completion of any freshmen placement requirements in reading.
CPS 2231: CPS 1231, MATH 1054 (Precalculus) or computer programming experience & instructor permission.
CPS 2232: CPS 2231, MATH 2110 (Discrete Structures).
CPS 3250: CPS 2232, CPS 2390
CPS 3562: CPS 3351 or instructor permission.
CPS 4301: Completion of CPS core.
MATH 3451: MATH 2412 (Calculus II)
MATH 3452: MATH 3451
MATH 3455: MATH 2412 (Calculus II)
MATH 3120: MATH 2110 (Discrete Structures)
MATH 3940: MATH 2412, CPS 2231
MATH 4805: MATH 3544 (Probability & Mathematical Statistics).
STME 1403: Qualifying testing placement or equivalent Math 1054 (Precalculus)
STME 1601: STME 1401
STME 1603: STME 1403
STME 2401: STME 1603
STME 2403: STME 1603
STME 2601: STME 1601
STME 2603: STME 1603
STME 2610: GE 2024
STME 3610: STME 2610, STME 2603, STME 2601
STME 4610: Senior standing in the five year science, technology & math education program.