## NECHE Inventory of Educational Effectiveness Indicators
### Undergraduate Programs
#### Computer Science - 2018 - 19

<table>
<thead>
<tr>
<th>Degree Granting Program Name</th>
<th>Program Objectives</th>
<th>Course Objective(s)</th>
<th>Objective Assessment</th>
<th>Program Evaluation</th>
<th>Assessments Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science</td>
<td>(The Computer Science Program Objectives are listed below)</td>
<td>Objective – 4 (Apply mathematical foundations, algorithmic principles and computer science theory in the design of computer-based systems in a way that)</td>
<td>CSCI 460 – Theory of Computing (Capstone Course) is considered to assess Objective – 4. This course substantially contributes to the achievement of the objective. Final/Summary quizzes from the Fall 2018 course offering were collected.</td>
<td>A total of 27 final/summary exam/quiz artifacts were considered. A rubric was designed with eight (8) criteria/objectives (listed below) related to the course final exam with the following ratings and weights: Proficient (3), Developing (2), Beginning (1), Absent (0), and N/A. It was observed that about 55% of the students have achieved or close to achieving proficiency over all the objectives, about</td>
<td>In CSCI 460, the course assessments are strongly tied to the course objectives, and students are provided with multiple options (multiple quizzes/exams) to demonstrate their learning/achievement of the objectives. The above methodology can help students attain the essential objectives upon successful completion of the course. It was observed that, on an average, by the end of the course, the class is still at the “beginning” level in the achievement of Objective 5 related to the description of the relation among languages, models of computation, and problems; the class is at the “developing” level in the achievement of Objectives 2 and 6 related to writing a constructive proof of the expressiveness</td>
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1. List ONLY the program learning objective(s) assessed during the current reporting period
2. For each learning objective listed in column (1), other than GPA, what data/evidence was used to determine that graduates have achieved the stated objectives? (e.g., capstone assignment, portfolio review, licensure examination)
3. What were the results/outcomes/findings/conclusions of the assessment?
4. Who interprets the evidence? Describe the process (e.g., annually by the curriculum committee).
5. What changes/improvements have been made as a result of using the data/evidence (3)? Link discussion in this column with a learning objective (1) and the results of assessing that objective (3)
6. Date of most recent program review
| Demonstrates comprehension of the tradeoffs involved in design choices | 19% of the students have been in the “developing” phase in achieving the objectives, and about 26% were in the “beginning” phase in achieving the objectives. It was also observed that, on an average, students were in the “developing” phase in achieving objectives 1, 2, 6, and 8, and were close to being “proficient” in achieving the objectives 3, 4, and 7. Students were in the “beginning” phase of the development of Objective 5. (Please see the attached rubric and rating scores for specific details) | of a model of computation and classifying sets by the models of computation that accept them, respectively. The following improvements are planned to increase the student achievement of the objectives: + Develop course materials and exercises to support Objective 5 (relate languages, models, problems) during the semester so as to raise the level above “beginning”. + Develop same kind of support for Objective’s 1, 2, and 6 (describe model, prove expressiveness, classify sets by model), to raise their achievement level above “developing”. + Accept “developing” level for objective 8 (models of interaction), which is not part of the standard national curriculum for theory courses; consider making this an optional objective for students interested in it. + Elevate the first 7 multi-topic objectives to syllabus level, whereas current syllabus objectives ("competencies") are each associated with a particular course topic. |}

Insert URL of the program web page where Program Learning Objectives for this program are published (NECHE requires this as part of being transparent to stakeholders):
https://www.framingham.edu/academics/colleges/science-technology-engineering-and-mathematics/computer-science/index