# **NECHE Indicators of Educational Effectiveness**

Togram Assessment         First Name:       Satish         Banner ID:       300931773         Email:       'spenmatsa@framingham.edu         Please select the reporting period this assessment/accreditation work was completed:         '2022-2023       Image: Satish         Please select the type of program you completed assessment/accreditation work was completed:         '2022-2023       Image: Satish         Please select the program you completed assessment/accreditation work for this reporting period:         'durdergraduate Program       Image: Satish         Please select the program you completed assessment for during this reporting period:         'Computer Science       Image: Satish         Please select the option that best describes the assessment work completed during this reporting period.         'c Only assessed program learning objective(s)       Image: Satish         o Only completed other assessment activities (ex. assessment plan, rubrics etc.)       Assessed program learning objective(s) and completed other assessment activities (ex. assessment plan, rubrics etc.)         c Did not undertake program activities (other than the assessment of program learning objectives) completed during reporting period (assessment plans, rubrics etc.).         'Please set attached.       Image: Satish completed in this report?         Please stack the related documents produced as a result of the activities listed in above (mandatory if funding is requested	210-0004.			
Please select the reporting period this assessment/accreditation work was completed:   '2022-2023   Please select the type of program you completed assessment/accreditation work for this reporting period:   Note: If changing your initial selection, please refresh this page prior to making a new selection.   'Undergraduate Program   'Undergraduate Program you completed assessment for during this reporting period:   'Computer Science   'Computer Science   'Computer Science   'Conty assessed program learning objective(s)   • Only assessed program learning objective(s)   • Only operant learning objective(s)   • Only operant learning objective(s)   • Only assessed program learning objective(s)   • Only operant learning objective(s)   • Only operant learning objective(s)   • Only assessed program learning objective(s)   • Only operant learning objective(s)   • Only operant learning objective(s)   • Only assessed program assessment work   Please list the assessment activities (other than the assessment of program learning objectives) completed during reporting period (assessment plans, rubrics etc.).   'Please select the related documents produced as a result of the activities listed in above (mandatory if funding is requested for this work):   CS_Assessment Plan_Nov_2023.doc   unding   Are you seeking funding for assessment	Girat Nama:	* Octich	Loot Namo:	*
Banner ID: '300931773 Email: 'spenmatsa@framingham.edu  Please select the reporting period this assessment/accreditation work was completed: '2022-2023  Please select the type of program you completed assessment/accreditation work for this reporting period: Note: If changing your initial selection, please refresh this page prior to making a new selection. 'Undergraduate Program Please select the program you completed assessment for during this reporting period: 'Computer Science Please select the option that best describes the assessment work completed during this reporting period. 'C Only assessed program learning objective(s) Only assessed program learning objective(s) Only completed other assessment activities (ex. assessment plan, rubrics etc.) C Did not undertake program assessment work sessesment Activities Please selact the related documents produced as a result of the activities listed in above (mandatory if funding is requested for this work): CS_Assessment Plan_Nov_2023.doc unding Are you seeking funding for assessment work completed in this report? You can request a maximum of \$2,000 for this reporting period. 'c Yes No Enter the year of the most recent program review. If the program is new, enter the upcoming program review yea TBD (to be determined).		Satish	Last Name.	Penmatsa
Please select the reporting period this assessment/accreditation work was completed:          2022-2023       Image: Computer Science         Please select the option that best describes the assessment for during this reporting period:         *Computer Science       Image: Computer Science         Please select the option that best describes the assessment for during this reporting period:         *Computer Science       Image: Computer Science         *Conly assessed program learning objective(s)       Image: Computer Science         *Conly assessed program learning objective(s) and completed other assessment activities (ex. assessment plan, rubrics etc.)         *Please stack the related documents produced as a result of the activities listed	Banner ID:	* 300931773	Email:	*spenmatsa@framingham.edu
12022-2023       Image: Please select the type of program you completed assessment/accreditation work for this reporting period:         Note: If changing your initial selection, please refresh this page prior to making a new selection.         "Undergraduate Program         Please select the program you completed assessment for during this reporting period:         "Computer Science       Image: Please select the option that best describes the assessment work completed during this reporting period.         "C Only assessed program learning objective(s)       Image: Please select the option that best describes the assessment plan, rubrics etc.)         • Only completed other assessment activities (ex. assessment plan, rubrics etc.)       Image: Please select the option that best describes the assessment plan, rubrics etc.)         • Only assessed program learning objective(s) and completed other assessment activities (ex. assessment plan, rubrics etc.)       Image: Please select the option assessment activities (other than the assessment of program learning objectives) completed during reporting period (assessment plans, rubrics etc.).         "Please set attached.       Image: Please set attached.         Please attach the related documents produced as a result of the activities listed in above (mandatory if funding is requested for this work):         CS_Assessment Plan_Nov_2023.doc       Image: Plan_Nov_2023.doc         Imding       Are you seeking funding for assessment work completed in this report?         You can request a maximum of \$2,000 for this reporting period.       'e Yes	Please selec	t the reporting period this assessme	nt/accreditation work was	completed:
Please select the type of program you completed assessment/accreditation work for this reporting period: Note: If changing your initial selection, please refresh this page prior to making a new selection.   'Undergraduate Program  Please select the program you completed assessment for during this reporting period:   'Computer Science  Please select the option that best describes the assessment work completed during this reporting period.  'C Only assessed program learning objective(s)  Out completed other assessment activities (ex. assessment plan, rubrics etc.)  Assessed program learning objective(s) and completed other assessment activities (ex. assessment plan, rubrics etc.)  Assessment Activities Please list the assessment activities (other than the assessment of program learning objectives) completed during reporting period (assessment plans, rubrics etc.).  'Please select the related documents produced as a result of the activities listed in above (mandatory if funding is requested for this work):  CS_Assessment Plan_Nov_2023.doc  Inding Are you seeking funding for assessment work completed in this report? You can request a maximum of \$2,000 for this reporting period. 'c Yes a No	2022-2023		$\checkmark$	
*Undergraduate Program       Image: Computer Science         *Computer Science       Image: Computer Science         *Computer Science       Image: Computer Science         *Conly assessed program learning objective(s)       *         *Only completed other assessment activities (ex. assessment plan, rubrics etc.)       *         * Assessed program learning objective(s) and completed other assessment activities (ex. assessment plan, rubrics etc.)       *         * Old not undertake program assessment work       *         * Please list the assessment activities (other than the assessment of program learning objectives) completed durin reporting period (assessment plans, rubrics etc.).       *         * Please list the assessment plans, rubrics etc.).       *         * Please see attached.       *         Please see attached.       *         Please see attached.       *         Please attach the related documents produced as a result of the activities listed in above (mandatory if funding is requested for this work):         CS_Assessment Plan_Nov_2023.doc       *         Inding       *         Are you seeking funding for assessment work completed in this report?         You can request a maximum of \$2,000 for this reporting period.         *       *         *       *         *       No         *       *     <	Please selec Note: If chang	t the type of program you completed ying your initial selection, please refresh t	assessment/accreditation	work for this reporting period: w selection.
Please select the program you completed assessment for during this reporting period:	Undergradua	ate Program	$\checkmark$	
<ul> <li><sup>1</sup> Computer Science</li> <li><sup>2</sup> Computer Science</li> <li><sup>2</sup> Computer Science</li> <li><sup>2</sup> Please select the option that best describes the assessment work completed during this reporting period.</li> <li><sup>3</sup> C Only assessed program learning objective(s)</li> <li>a Only completed other assessment activities (ex. assessment plan, rubrics etc.)</li> <li>c Assessed program learning objective(s) and completed other assessment activities (ex. assessment plan, rubrics etc.)</li> <li>c Did not undertake program assessment work</li> <li>seessment Activities</li> <li>Please list the assessment plans, rubrics etc.).</li> <li><sup>4</sup> Please see attached.</li> <li>Please see attached.</li> <li>Please attach the related documents produced as a result of the activities listed in above (mandatory if funding is requested for this work):</li> <li>CS_Assessment Plan_Nov_2023.doc</li> <li>unding</li> <li>Are you seeking funding for assessment work completed in this report?</li> <li>You can request a maximum of \$2,000 for this reporting period.</li> <li><sup>1</sup> Yes</li> <li>* No</li> <li>rogram Information</li> <li>Enter the year of the most recent program review. If the program is new, enter the upcoming program review yea TBD (to be determined).</li> </ul>	Please selec	t the program you completed assess	ment for during this report	ing period:
Please select the option that best describes the assessment work completed during this reporting period. * ( Only assessed program learning objective(s) * Only completed other assessment activities (ex. assessment plan, rubrics etc.) C Assessed program learning objective(s) and completed other assessment activities (ex. assessment plan, rubrics etc.) C Did not undertake program assessment work seessment Activities Please list the assessment activities (other than the assessment of program learning objectives) completed durin reporting period (assessment plans, rubrics etc.). * Please see attached. Please see attached. Please attach the related documents produced as a result of the activities listed in above (mandatory if funding is requested for this work): CS_Assessment Plan_Nov_2023.doc unding Are you seeking funding for assessment work completed in this report? You can request a maximum of \$2,000 for this reporting period. * Yes * No rogram Information Enter the year of the most recent program review. If the program is new, enter the upcoming program review yea TBD (to be determined).	* Computer So	cience	$\checkmark$	
Please list the assessment activities (other than the assessment of program learning objectives) completed durin reporting period (assessment plans, rubrics etc.). *Please see attached. Please attach the related documents produced as a result of the activities listed in above (mandatory if funding is requested for this work): CS_Assessment Plan_Nov_2023.doc unding Are you seeking funding for assessment work completed in this report? You can request a maximum of \$2,000 for this reporting period. *C Yes * No * Orgram Information Enter the year of the most recent program review. If the program is new, enter the upcoming program review yea TBD (to be determined).	o Only asses	lated other appearant activities (av. app	ecoment plan with the stal	
<ul> <li>Please see attached.</li> <li>Please attach the related documents produced as a result of the activities listed in above (mandatory if funding is requested for this work):</li> <li>CS_Assessment Plan_Nov_2023.doc</li> <li>unding</li> <li>Are you seeking funding for assessment work completed in this report?</li> <li>You can request a maximum of \$2,000 for this reporting period.</li> <li>* Yes <ul> <li>No</li> </ul> </li> <li>rogram Information</li> <li>Enter the year of the most recent program review. If the program is new, enter the upcoming program review yea TBD (to be determined).</li> </ul>	<ul> <li>Only asses</li> <li>Only compl</li> <li>Assessed r</li> <li>Did not und</li> </ul>	leted other assessment activities (ex. ass program learning objective(s) and comple lertake program assessment work	essment plan, rubrics etc.) ted other assessment activitie	es (ex. assessment plan, rubrics etc.)
Please attach the related documents produced as a result of the activities listed in above (mandatory if funding is requested for this work): CS_Assessment Plan_Nov_2023.doc unding Are you seeking funding for assessment work completed in this report? You can request a maximum of \$2,000 for this reporting period. * o Yes	<ul> <li>Only asses</li> <li>Only compl</li> <li>Assessed p</li> <li>Did not unc</li> <li>sessment Ac</li> <li>Please list th</li> <li>reporting pe</li> </ul>	leted other assessment activities (ex. ass program learning objective(s) and comple dertake program assessment work ctivities ne assessment activities (other than riod (assessment plans, rubrics etc.)	essment plan, rubrics etc.) ted other assessment activitie the assessment of program	es (ex. assessment plan, rubrics etc.) n learning objectives) completed durin
Are you seeking funding for assessment work completed in this report? You can request a maximum of \$2,000 for this reporting period. * Yes • No rogram Information Enter the year of the most recent program review. If the program is new, enter the upcoming program review yea TBD (to be determined).	<ul> <li>Only asses</li> <li>Only compl</li> <li>Assessed p</li> <li>Did not unc</li> <li>sessment Ac</li> <li>Please list th</li> <li>reporting pe</li> <li>Please see a</li> </ul>	leted other assessment activities (ex. ass program learning objective(s) and comple dertake program assessment work ctivities ne assessment activities (other than riod (assessment plans, rubrics etc.) ttached.	essment plan, rubrics etc.) ted other assessment activitie <b>the assessment of progran</b>	es (ex. assessment plan, rubrics etc.) In learning objectives) completed durin
Are you seeking funding for assessment work completed in this report? You can request a maximum of \$2,000 for this reporting period. * Yes No rogram Information Enter the year of the most recent program review. If the program is new, enter the upcoming program review yea TBD (to be determined).	<ul> <li>Only asses</li> <li>Only compl</li> <li>Assessed p</li> <li>Did not unc</li> <li>Sessment Ad</li> <li>Please list th</li> <li>reporting pe</li> <li>Please see a</li> <li>Please attack</li> <li>requested fo</li> <li>CS_Assessm</li> </ul>	leted other assessment activities (ex. ass program learning objective(s) and complete lertake program assessment work ctivities ne assessment activities (other than riod (assessment plans, rubrics etc.) ttached. h the related documents produced as or this work): ment Plan_Nov_2023.doc	essment plan, rubrics etc.) eted other assessment activitie the assessment of program b.	es (ex. assessment plan, rubrics etc.) In learning objectives) completed durin
*c Yes	<ul> <li>Only asses</li> <li>Only compl</li> <li>Assessed p</li> <li>Did not unc</li> <li>Sessment Ad</li> <li>Please list th</li> <li>reporting pe</li> <li>Please see a</li> <li>Please attack</li> <li>requested fo</li> <li>CS_Assessm</li> <li>Inding</li> </ul>	leted other assessment activities (ex. ass program learning objective(s) and complete dertake program assessment work ctivities ne assessment activities (other than riod (assessment plans, rubrics etc.) ttached. h the related documents produced as or this work): ment Plan_Nov_2023.doc	essment plan, rubrics etc.) ted other assessment activitie the assessment of program	es (ex. assessment plan, rubrics etc.) In learning objectives) completed durin
rogram Information Enter the year of the most recent program review. If the program is new, enter the upcoming program review yea TBD (to be determined).	<ul> <li>Only asses</li> <li>Only compl</li> <li>Assessed p</li> <li>Did not unc</li> <li>Bease list th</li> <li>Please list th</li> <li>reporting pe</li> <li>Please see a</li> <li>Please attack</li> <li>requested fo</li> <li>CS_Assessminding</li> <li>Are you seely</li> <li>You can requested</li> </ul>	leted other assessment activities (ex. ass program learning objective(s) and complete lertake program assessment work ctivities ne assessment activities (other than riod (assessment plans, rubrics etc.) ttached. ttached. h the related documents produced as or this work): ment Plan_Nov_2023.doc king funding for assessment work co est a maximum of \$2,000 for this reporting	essment plan, rubrics etc.) eted other assessment activities the assessment of program b. s a result of the activities li mpleted in this report? g period.	es (ex. assessment plan, rubrics etc.)
Enter the year of the most recent program review. If the program is new, enter the upcoming program review yea TBD (to be determined).	<ul> <li>Only asses</li> <li>Only complete Assessed point of anot uncertained and the second point of a second p</li></ul>	leted other assessment activities (ex. ass program learning objective(s) and complete lertake program assessment work ctivities ne assessment activities (other than riod (assessment plans, rubrics etc.) ttached. In the related documents produced as for this work): ment Plan_Nov_2023.doc king funding for assessment work co lest a maximum of \$2,000 for this reporting	essment plan, rubrics etc.) eted other assessment activities the assessment of program b. s a result of the activities li mpleted in this report? g period.	es (ex. assessment plan, rubrics etc.)
	<ul> <li>Only asses</li> <li>Only complete Assessed performance</li> <li>Did not uncessessment Administration</li> <li>Please list threporting peeer</li> <li>Please see a</li> <li>Please attack</li> <li>requested for</li> <li>CS_Assessment</li> <li>Inding</li> <li>Are you seeer</li> <li>You can requested for</li> <li>Yes</li> <li>No</li> <li>ogram Inform</li> </ul>	leted other assessment activities (ex. ass program learning objective(s) and complete dertake program assessment work ctivities ne assessment activities (other than riod (assessment plans, rubrics etc.) ttached. h the related documents produced as or this work): ment Plan_Nov_2023.doc king funding for assessment work co est a maximum of \$2,000 for this reporting nation	essment plan, rubrics etc.) eted other assessment activities the assessment of program of the activities line is a result of the activities line impleted in this report? In g period.	es (ex. assessment plan, rubrics etc.)

FRAMINGHAM

UNIVERSITY

STATE

Insert the URL of the 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

Signatures

Satish Pennatsa Submitter Signature

...3032343735

11/27/2023 Date

Office of Institutional Assessment

Office of Institutional Assessment Only

Institutional Assessment Signature

Date

# Framingham State University

## **Program Assessment Plan for Computer Science**

Assessment Coordinator:	Satish Penmatsa
Department Chair:	Satish Penmatsa
Date Created/Updated:	11/01/2023

#### 1) PROGRAM MISSION STATEMENT

The Department of Computer Science's mission is to educate students with up-to-date curricula and pedagogy in computer science and information systems, provide theoretical and hands-on training for designing, implementing, and analyzing software and information systems, and provide training for developing effective communication skills, understanding professional, social, and ethical responsibilities for pursuit of successful careers.

## 2) PROGRAM LEARNING OBJECTIVES

- 1) Analyze a problem and identify and define the appropriate computing requirements.
- 2) Design a computer-based system, process, component or program to meet specifications.
- 3) Implement and test a computer-based design using current techniques, skills, and tools.
- 4) Apply mathematical foundations, algorithmic principles, and computer science theory in the design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
- 5) Function effectively in teams to accomplish a common goal.
- 6) Understand professional, ethical, legal, security and social issues and responsibilities.
- 7) Use oral and written communication effectively.
- 8) Recognize the need for continuing professional development.

## **3) LEARNING OPPORTUNITIES**

COURSE/Program Learning Objectives	Obj 1	Obj 2	Obj 3	Obj 4	Obj 5	Obj 6	Obj 7	Obj 8
CSCI 108 HTML and Javascript	L	L	L	N	S	N	М	N
CSCI 120 Introduction to Information Technology	L	N	N	N	М	N	М	N
CSCI 130 Computer Science I Using Java	L	S	S		L			
CSCI 200 CS Professional Seminar						L	L	М
CSCI 215 Computer Science II Using Java	М	S	S	N	М	N	М	L
CSCI 258 Introduction to Operating Systems Using UNIX <sup>™</sup>	М	L	S	N	N	L	L	L
CSCI 271 Data Structures	М	S	S	S	М	N	М	L
CSCI 317 Discrete Structures	N	N	N	N	М	N	М	N
CSCI 347 Analysis of Algorithms	S	S	L	S	М	L	М	N
CSCI 352 Computer Architecture & Assembly Language	L	L	L					
CSCI 360 Database Management	L	S	S		S		S	
CSCI 362 Software Engineering	S	S	S	М	S	S	S	S
CSCI 460 Theory of Computing	S	S	L	S	L	Ν	М	L
CSCI 465 Operating Systems Internals	S	S	S	Ν	Ν	L	L	L
CSCI 477 Computer Networking	М	S	L	N	Ν	L	L	L
CSG Electives (3 @300 or above)								
CSCI 300 Artificial Intelligence	М	М	L	М	М	L	М	L
CSCI 303 Web and Mobile Applications	М	М	М		L			L
CSCI 308 Python Programming	М	М	S					S
CSCI 325 Mobile App Development	М	М	М		L			L
CSCI 333 Object-Oriented Programming using C++	L	L	L					S
CSCI 340 UNIX System Administration	М	М	М	N	N	L	L	L
CSCI 345 Computer and Network Security	L	L	L		L	М	L	L
CSCI 373 Advanced Web Technologies	М	М	M					S

Instruction	Learning (development)
(N)None	(I) Introduced
(L)Limited	(R) Reinforced
(M)Moderate	(M) Mastered
(S)Substantial	(A) Assessed

Highlighted Course/Cells used for Assessment

## 4) ASSESSMENT METHODS AND TIMELINE

Indicate when and how program learning objectives will be assessed. Refer to the curriculum map to draft a student learning outcomes assessment timeline. It is recommended that you outline a 5-year plan for assessment in which you will assess all of your PLOs.

Academic Years	Outcome(s)/ Objective(s)	Course(s)	Assessment Evidence (direct/indirect)	Assessment Method	Responsibility
WHEN	WHICH outcome(s)/objectives will you examine in each period (Use number)?	WHERE will you look for evidence of student learning (i.e., list course(s) that will generate evidence for each objective.	WHAT student work or other evidence will you examine in order to assess each objective?	HOW will you look at the evidence; what means will you use to analyze the evidence collected for each objective	WHO will oversee collecting, analyzing, reporting, results? List names or titles.
Year 1 2023/24	1, 2	1 – CSCI 362 2 – CSCI 360, 362	Final Exams/Projects	Rubric	Satish Penmatsa, David Keil, Mike Nourai
Year 2 2024/25	7, 8	7 – CSCI 362 8 – CSCI 308, 362	Final Exams/Projects Student Surveys	Rubric	Satish Penmatsa, David Keil, Mike Nourai
Year 3 2025/26	5, 6	5 – CSCI 360, 362 6 – CSCI 362	Final Exams/Projects/ Student Surveys	Rubric	Satish Penmatsa, David Keil, Mike Nourai
Year 4 2026/27	3, 4	3 – CSCI 308, 362, 465 4 – CSCI 347, 460	Final Exams/Projects/ Summary Quizzes	Rubric	Satish Penmatsa, David Keil, Mike Nourai
Year 5 2027/28	Re-assess one or more objectives	Re-consider one or more courses	Final Exams/Projects/ Student Surveys/Summary Quizzes	Rubric	Satish Penmatsa, David Keil, Mike Nourai

#### **Program Size and Sampling Technique**

- a. State the number of students in the program or the number who graduate each year.
  - Number of Students: ~160, Number of graduates per year: ~20
- b. Describe the sampling technique to be used.
  - Convenience Sampling: Artifacts will be selected based on availability

### 5) PLAN FOR ANALYZING RESULTS

- List who is responsible for distributing results and who will receive results?
  - The department assessment committee will send the results to the FSU Office of Institutional Effectiveness
- State how and at which forums discussion of results will take place.
  - Departmental meetings at end of each semester and before start of each semester

6)	<b>DISTRIBUTION.</b>	The program will	distribute or publish	these items in the	following ways:
----	----------------------	------------------	-----------------------	--------------------	-----------------

	Distribution Method						
ITEM	FSU Catalog (provide section title)	<b>Website</b> (provide URL)	Annual Reports	Brochures	Course Syllabi	Other (please describe, e.g. department meeting, advising session)	
Program Mission		https://www.framingham.edu/academics/co lleges/science-technology-engineering-and- mathematics/computer-science/					
Program Learning Objectives		https://www.framingham.edu/academics/co lleges/science-technology-engineering-and- mathematics/computer-science/			Х		
Learning Opportunities (Curriculum Map)			Х				
Assessment Plan			Х				

## Attach any rubrics or instrumentation that you plan to use for assessment of Program Learning Objectives

Rubrics well be sent as designed during the respective AYs.

<sup>1</sup> If you have questions or need assistance, please contact Dr. Mark Nicholas, Director of Assessment at mnicholas1@framingham.edu or 508-626-4670

2 Accredited programs can provide supplemental documents that indicate the answers to these questions as long as specific page references are provided in each cell of the tables in this form. When the answers are not accessible in that way, please cut and paste into your assessment plan.

Credits: This Template was developed using ideas from templates developed at University of Rhode Island and University of Hawaii in Manoa.