Preparation of Computer Science Educators International Society for Technology in Education (ISTE) Option B

COUNCIL FOR THE ACCREDITATION OF EDUCATOR PREPARATION

COVER SHEET

1. Institution Name

2. State

3. Date submitted

MM   DD   YYYY

    /   /

4. Report Preparer's Information:

Name of Preparer:

Phone: Ext.

(   )   -

E-mail:

5. CAEP Coordinator's Information:

Name:

Phone: Ext.

(   )   -

E-mail:

6. Name of institution's program

7. CAEP Category

9. Program Type
- ○ Advanced Teaching
- ○ First teaching license
- ○ Other School Personnel
- ○ Unspecified

10. Degree or award level
- ○ Baccalaureate
- ○ Post Baccalaureate
- ○ Master's
- ○ Post Master's
- ○ Specialist or C.A.S.
- ○ Doctorate
- ○ Endorsement only

11. Is this program offered at more than one site?
- ○ Yes
- ○ No

12. If your answer is "yes" to above question, list the sites at which the program is offered

13. Title of the state license for which candidates are prepared

14. Program report status:
- ○ Initial Review
- ○ Response to One of the Following Decisions: Further Development Required or Recognition with Probation
- ○ Response to National Recognition With Conditions

15. Is your EPP seeking
- ○ CAEP accreditation for the first time (initial accreditation)
- ○ Continuing NCATE/CAEP accreditation

16. State Licensure requirement for national recognition:
CAEP requires 80% of the program completers who have taken the test to pass the applicable state licensure test for the content field, if the state has a testing requirement. Test information and data must be reported in Section IV. Does your state require such a test?

○ Yes
○ No

SECTION I - CONTEXT

   1. Description of any state or institutional policies that may influence the application of ISTE standards. (Response limited to 4,000 characters)

   2. Description of the field and clinical experiences required for the program, including the number of hours for early field experiences and the number of hours/weeks for student teaching or internships. (Response limited to 8,000 characters)

   3. Please attach files to describe a program of study that outlines the courses and experiences required for candidates to complete the program. The program of study must include course titles. (This information may be provided as an attachment from the college catalog or as a student advisement sheet.)

   4. This system will not permit you to include tables or graphics in text fields. Therefore any tables or charts must be attached as files here. The title of the file should clearly indicate the content of the file. Word documents, pdf files, and other commonly used file formats are acceptable.

   5. Candidate Information
Directions: Provide three years of data on candidates enrolled in the program and completing the program, beginning with the most recent academic year for which numbers have been tabulated. Report the data separately for the levels/tracks (e.g., baccalaureate, post-baccalaureate, alternate routes, master's, doctorate) being addressed in this report. Data must also be reported separately for programs offered at multiple sites. Update academic years (column 1) as appropriate for your data span. Create additional tables as necessary.

Program:		
Academic Year	# of Candidates Enrolled in the Program	# of Program Completers[2]

(2) CAEP uses the Title II definition for program completers. Program completers are persons who have met all the requirements of a state-approved teacher preparation program. Program completers include all those who are documented as having met such requirements. Documentation may take the form of a degree, institutional certificate, program credential, transcript, or other written proof of having met the program's requirements.

   6. Faculty Information
Directions: Complete the following information for each faculty member responsible for professional coursework, clinical supervision, or administration in this program.

Faculty Member Name	
Highest Degree, Field, & University[3]	
Assignment: Indicate the role of the faculty member[4]	
Faculty Rank[5]	
Tenure Track	☐ YES
Scholarship[6], Leadership in Professional Associations, and Service[7]:List up to 3 major contributions in the past 3 years[8]	
Teaching or other professional experience in P-12 schools[9]	

(3) e.g., PhD in Curriculum & Instruction, University of Nebraska.
(4) e.g., faculty, clinical supervisor, department chair, administrator
(5) e.g., professor, associate professor, assistant professor, adjunct professor, instructor
(6) Scholarship is defined by CAEP as systematic inquiry into the areas related to teaching, learning, and the education of teachers and other school personnel.
Scholarship includes traditional research and publication as well as the rigorous and systematic study of pedagogy, and the application of current research findings in new settings. Scholarship further presupposes submission of one's work for professional review and evaluation.
(7) Service includes faculty contributions to college or university activities, schools, communities, and professional associations in ways that are consistent with the institution and unit's mission.
(8) e.g., officer of a state or national association, article published in a specific journal, and an evaluation of a local school program.
(9) Briefly describe the nature of recent experience in P-12 schools (e.g. clinical supervision, inservice training, teaching in a PDS) indicating the discipline and grade level of the assignment(s). List current P-12 licensure or certification(s) held, if any.

SECTION II - LIST OF ASSESSMENTS

In this section, list the assessments that are being submitted as evidence for meeting the ISTE standards. If your state does not require a state licensure test in the content area, you must substitute an assessment that documents candidate attainment of content knowledge in #1 below. For each assessment, indicate the type or form of the assessment and when it is administered in the program. (Response limited to 250 characters each field)

1. Please provide following assessment information (Response limited to 250 characters each field)

Type and Number of Assessment	Name of Assessment (10)	Type or Form of Assessment (11)	When the Assessment Is Administered (12)
Assessment #1: Licensure assessment, or other content-based assessment (required)			

Assessment #2: Content Knowledge in Computer Science (required)			
Assessment #3: Candidate ability to plan appropriate teaching and learning experiences (required)			
Assessment #4: Assessment of internship/practicum, field or clinical experiences (required)			
Assessment #5: Candidate ability to support student learning (required)			
Assessment #6: Additional assessment that addresses the ISTE Standards for Computer Science Educator. (optional)			
Assessment #7: Additional assessment that addresses the ISTE Standards for Computer Science Educator. (optional)			
Assessment #8: Additional assessment that addresses the ISTE Standards for Computer Science Educator. (optional)			

(10) Identify assessment by title used in the program; refer to Section IV for further information on appropriate assessment to include.

(11) Identify the type of assessment (e.g., essay, case study, project, comprehensive exam, reflection, state licensure test, portfolio).

(12) Indicate the point in the program when the assessment is administered (e.g., admission to the program, admission to student teaching/internship, required courses [specify course title and numbers], or completion of the program).

SECTION III - RELATIONSHIP OF ASSESSMENT TO STANDARDS

1. **Standard 1: Effective teachers of computer science understand and demonstrate knowledge of**

major computing concepts including primitive data types and data structures; be able to understand data storage concepts; and be able to use computing for models and simulations. Candidates:

	#1	#2	#3	#4	#5	#6	#7	#8
Element 1.1 Effectively use primitive data types.								
Element 1.2 Demonstrate an understanding of static and dynamic data structures.								
Element 1.3 Effectively use,manipulate, and explain various data stores, various types (text,images, sound, etc.), various locations (local, server, cloud), etc.	☐	☐	☐	☐	☐	☐	☐	☐
Element 1.4 Effectively use modeling and simulation to solve real-world problems.								

2. **Standard 2: Content Knowledge (Algorithms)**

Effective teachers of computer science are knowledgeable and able to use two or more programming languages to effectively design, develop, test and analyze algorithms; able to use two or more development environments; and be knowledgeable in software development models and project management strategies. Candidates:

	#1	#2	#3	#4	#5	#6	#7	#8	#5	#6	#7	#8
Element 2.1 Using a modern high-level programming language, construct correctlyfunctioning programs involving simple and structured data types; compound Boolean expressions; and sequential, conditional, and iterative control structures.												
Element 2.2 Design and test algorithms and programming solutions to problems in different contexts (textual, numeric, graphic, etc.) using advanced data structures.												
Element 2.3 Analyze algorithms by considering complexity, efficiency, aesthetics, and correctness.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Element 2.4 Demonstrate knowledge of two or more programming paradigms.												
Element 2.5 Effectively use two or more development environments.												
Element 2.6 Demonstrate knowledge of varied software development models and project management strategies.												

Effective teachers of computer science demonstrate knowledge of data representation, and components of digital devices, operating systems, and the operation of computing and mobile computing networks. Candidates:

	#1	#2	#3	#4	#5	#6	#7	#8
Element 3.1 Demonstrate an understanding of data representation at the machine level. *Element 3.2* Demonstrate an understanding of machine-level components and related issues of complexity. *Element 3.3* Demonstrate an understanding of operating systems and networking in a structured computer system. *Element 3.4* Demonstrate an understanding of the operation of computer networks and mobile computing devices. Candidates select, evaluate, and facilitate the use of adaptive and assistive technologies to support student learning.	☐	☐	☐	☐	☐	☐	☐	☐

4. **Standard 4: Content Knowledge (Computing in the Contemporary World)**

Effective teachers of computer science are able to demonstrate responsible use as well as be able to analyze and understand the role computer science plays and its impact in the modern world. Candidates:

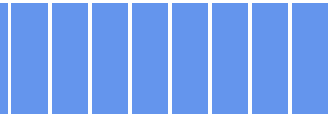|	#1	#2	#3	#4	#5	#6	#7	#8
Element 4.1 Demonstrate an understanding of the social, ethical, and legal issues and impacts of computing and attendant responsibilities of computer scientists and users. *Element 4.2* Analyze the contributions of computer science to current and future innovations in sciences, humanities, the arts, and commerce.	☐	☐	☐	☐	☐	☐	☐	☐

5. **Standard 5: Content Pedagogy**

Effective teachers of computer science plan and teach computer science lessons/units using a variety of effective and engaging practices and methodologies, including team-based collaboration for real-world projects, and use various forms of media to engage and empower a diversity of students. In addition, they are able to identify problems, develop and assess learning opportunities and use the data to inform instruction. Candidates:

	#1	#2	#3	#4	#5	#6	#7	#8
Element 5.1 Select a variety of real-world computing problems and project-based methodologies that support active and authentic learning and provide opportunities for creative and innovative thinking and problem solving.								

Element 5.2 Demonstrate the use of a variety of collaborative groupings in lesson plans/units and assessments.

Element 5.3 Design activities that require students to effectively describe computing artifacts and communicate results using multiple forms of media.

Element 5.4 Develop lessons and methods that engage and empower learners from diverse cultural and linguistic backgrounds..

Element 5.5 Identify problematic concepts and constructs in computer science and appropriate strategies to address them.

Element 5.6 Design and implement developmentally appropriate learning opportunities supporting the diverse needs of all learners.

Element 5.7 Create and implement multiple forms of assessment and use resulting data to capture student learning, provide remediation, and shape classroom instruction.

6. **Standard 6: Effective Learning Environments**

Effective teachers of computer science design environments that promote effective teaching and learning in computer science classrooms and online learning environments, promote digital citizenship and ensure equitable access to digital platforms and environments. Candidates:

	#1	#2	#3	#4	#5	#6	#7	#8
Element 6.1 Promote and model the safe and effective use of computer hardware, software, peripherals, and networks. *Element 6.2 Plan for equitable and accessible classroom, lab, and online environments that support effective and engaging learning.*	☐	☐	☐	☐	☐	☐	☐	☐

7. **Standard 7: Effective Professional Knowledge and Skills**

Effective teachers of computer science participate in, promote, and model ongoing professional development and lifelong learning relative to computer science and computer science education by participating in professional learning networks, remaining up-to-date with related research, and being knowledgeable of standards that affect the teaching of computer science. Candidates:

	#1	#2	#3	#4	#5	#6	#7	#8
Element 7.1 Identify and participate in professional computer science and computer science education societies, organizations, and groups that provide professional growth opportunities and resources.. *Element 7.2 Demonstrate knowledge of evolving social and research issues relating to computer science and computer science education.* *Element 7.3 Identify local, state, and national content and professional*	☐	☐	☐	☐	☐	☐	☐	☐

SECTION IV - EVIDENCE FOR MEETING STANDARDS

   DIRECTIONS: DIRECTIONS: The key assessments listed in Section II must be documented and discussed in Section IV. Taken as a whole, the assessments must demonstrate candidate mastery of the SPA standards. The key assessments must be required of all candidates. Assessments and scoring guides and data charts should be aligned with the SPA standards. This means that the concepts in the SPA standards should be apparent in the assessments and in the scoring guides to the same depth, breadth, and specificity as in the SPA standards. Data tables should also be aligned with the SPA standards. The data should be presented, in general, at the same level it is collected. For example, if a rubric collects data on 10 elements [each relating to specific SPA standard(s)], then the data chart should report the data on each of the elements rather that reporting a cumulative score.

A program is free to select the types of assessments within the following constraints:

• A program cannot use more than 8 key assessments. There is no minimum requirement.
• Assessments should be required of all candidates.
• The program must include the state licensure test in the program area for assessment #1. This requirement is waived if there is no state licensure test in the program area.
• One assessment must demonstrate candidate effects on student learning.
• In their entirety, the assessments and data should demonstrate that candidates have mastered the SPA standards.

Program must submit the following documentation:

(1) A rationale making the case that the key assessments, taken as a whole, demonstrate candidate mastery of the SPA/CAEP standards.

and

(2) Assessment Documentation
For each assessment attach one document that includes the following 3 items:
a. The assessment tool itself or a rich description of the assessment (often the directions given to candidates);
b. The scoring guide for the assessment; and
c. Charts that provide candidate data derived from the assessment.

The responses for a, b, and c (above) should be limited to the equivalent of five text pages each , however in some cases assessment instruments or scoring guides may go beyond five pages.

Note: As much as possible, combine all of the files for one assessment (a, b, and c above) into a single file. That is, create one file for Assessment #4 that includes the assessment itself (item a above), the scoring guide (item b above), and the data chart (item c above). Each attachment should be no larger than 2 mb. Do not include candidate work or syllabi. There is a limit of 20 attachments for the entire report so it is crucial that you combine files as much as possible.

demonstrate candidate mastery of the SPA standards. (Character limit 40,000 characters)

2. **State licensure tests or professional examinations of content knowledge. If your state does not require licensure tests or professional examinations in the content area, data from another assessment must be presented to document candidate attainment of content knowledge. (Assessment Required)**

Provide assessment information as outlined in the directions for Section IV

3. **EFFECTS ON STUDENT LEARNING. Assessment that demonstrates candidate effects on student learning. Examples of assessments include those based on student work samples, portfolio tasks, case studies, follow-up studies, and employer surveys.**

Provide assessment information as outlined in the directions for Section IV.

4. *(Required)* **PEDAGOGICAL AND PROFESSIONAL KNOWLEDGE, SKILLS, AND DISPOSITIONS:**

Assessments should address Standards 5 and 6 and should demonstrate that candidates can effectively plan instructional strategies, best practices, differentiation, higher order thinking, creativity, constructivism, problem-based, inquiry-based, assessment, engaged learning, instructional design, classroom management, and collaborative learning, etc. Professional Knowledge of computer science content and should address Standard 7. Examples of assessments can include the evaluation of candidates' abilities to develop lesson or unit plans, individualized educational plans, needs assessments, or intervention plans.

Provide assessment information as outlined in the directions for Section IV.

5. *(Required)* **FOCUS ON STUDENT LEARNING:**

Assessment that demonstrates candidates' ability to support student learning (e.g., create positive student learning environments). Examples of assessments may include, but are not limited to, student work samples, independent products from a portfolio, data overviews, collection and analysis of student learning data and follow up action plans, action research projects, professional learning.[16]

Provide assessment information as outlined in the directions for Section IV.

6. *(Required)*

Additional assessment that addresses ISTE Standards for Computer Science Educators. Examples of assessments may include, but are not limited to, field/clinical experiences, case studies, and portfolio and independent products from portfolio.

Provide assessment information as outlined in the directions for Section IV.

7. *(Optional)*

Additional assessment that addresses ISTE Standards for Computer Science Educators. Examples of assessments may include, but are not limited to, field/clinical experiences, case studies, and portfolio and independent products from portfolio.

Provide assessment information as outlined in the directions for Section IV.

8. *(Optional)*

Additional assessment that addresses ISTE Standards for Computer Science Educators. Examples of assessments may include, but are not limited to, field/clinical experiences, case studies, and portfolio and independent products from portfolio.

Provide assessment information as outlined in the directions for Section IV.

9. *(Optional)*

Additional assessment that addresses ISTE Standards for Computer Science Educators. Examples of assessments may include, but are not limited to, field/clinical experiences, case studies, and portfolio and independent products from portfolio.

Provide assessment information as outlined in the directions for Section IV

SECTION V - USE OF ASSESSMENT RESULTS TO IMPROVE PROGRAM

1. Evidence must be presented in this section that assessment results have been analyzed and have been or will be used to improve candidate performance and strengthen the program. This description should not link improvements to individual assessments but, rather, it should summarize principal findings from the evidence, the faculty's interpretation of those findings, and changes made in (or planned for) the program as a result. Describe the steps program faculty has taken to use information from assessments for improvement of both candidate performance and the program. This information should be organized around (1) content knowledge, (2) professional and pedagogical knowledge, skill, and dispositions, and (3) student learning.

(Response limited to 12,000 characters)

SECTION VI - FOR REVISED REPORTS OR RESPONSE TO CONDITIONS REPORTS ONLY

standards that were not met in the original submission. Provide new responses to questions and/or new documents to verify the changes described in this section. Specific instructions for preparing a Revised Report are available on the CAEP web site at: http://caepnet.org/accreditation/caep-accreditation/program-review-options/caep-program-review-national-recognition

For Response to Conditions Reports: Describe what changes or additions have been made to address the conditions cited in the original recognition report. Provide new responses to questions and/or new documents to verify the changes described in this section. Specific instructions for preparing a Response to Conditions Report are available on the CAEP web site at: http://caepnet.org/accreditation/caep-accreditation/program-review-options/caep-program-review-national-recognition

(Response limited to 24,000 characters.)

Please click "Next"

This is the end of the report. Please click "Next" to proceed.