

# The Framework for Computer Science 7-12 Program Guidelines

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**COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF EDUCATION**

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## WHY QUALITY TEACHER PREPARATION PROGRAMS ARE IMPORTANT

The fundamental purpose of a teacher preparation program approved by the Commonwealth of Pennsylvania is to admit, prepare, and support candidates for the teaching profession who, upon graduation, have the knowledge and skills to enable PreK-12 students in Pennsylvania to achieve academic success. Pennsylvania's preparation of new teachers is one component of a Standards-Based Instructional System.



*Figure 1*

**The six components of the Standards-Based Instructional System do not stand in isolation as supports for PreK-12 student achievement in the Commonwealth of Pennsylvania. Design and delivery of high quality teacher preparation programs are functions of an aligned instructional system; institutional success in producing new teachers with the knowledge and skills to promote student learning is the ultimate outcome of the overall system. High quality teacher preparation programs are an essential part of Pennsylvania's efforts to build capacity for an aligned PreK-16 system.**

## PHILOSOPHY FOR PREPARING HIGHLY EFFECTIVE PENNSYLVANIA TEACHERS

Six linked circles in figure 1 define core elements of Pennsylvania’s emerging instructional system: standards, curriculum, instruction, materials and resources for instruction, fair assessments, and appropriate interventions. Together, these system components are intended to produce positive results for students. For this to happen, the work encompassed in each circle—such as instruction—must build capacity for the activities captured by the other five circles.

In the case of teacher preparation programs and their contribution to **(1) instruction**, all programs are expected to have course content aligned with **(2) state standards**. All teacher preparation programs are expected to provide all candidates with the knowledge and skills to teach a **(3) standards-based curriculum** effectively and successfully. Through university coursework and extensive, well-designed clinical experiences, all candidates for the profession are expected to learn how to use **(4) materials and resources for instruction** (including technology) to meet the individual needs of each student in their classroom. Each teacher preparation program is expected to give considerable attention to helping all candidates acquire and use **(5) assessment skills**, enabling them to understand and respond to pupil results on standardized tests (PSSA and others), local school or district assessments, and individualized assessments of the achievements and challenges of each pupil. Taken together, this set of knowledge and teaching skills must enable every candidate for the teaching profession in the Commonwealth to implement **(6) appropriate interventions** in the classroom to improve student learning. Teacher preparation programs and the new teachers who complete them will be judged according to their success in achieving the six key goals described above.

Since program and candidate success do not happen by accident, program design, the components of that design, and the ongoing assessment of their effectiveness must all point in the same direction. The needs and interests of PreK-12 students and their schools are at the center of the program. This means that PreK-12 teachers and administrators must be involved in program assessment activities, decisions about selection and use of clinical sites, and asked regularly for their feedback on candidate and program performance. Program outcomes must include strong subject matter content preparation, more extensive clinical experiences for students, and the use of technology in curriculum and instruction.

Because teaching is a clinical profession, candidates for the profession should spend extensive time in school settings beginning early in their teacher preparation program sequence guided by university faculty and appropriately prepared PreK-12 mentor teachers. Teacher preparation programs must be able to demonstrate how they use evidence about program graduates and evidence about the PreK-12 students of their graduates to make continuous program improvements.

## INTRODUCTION

These guidelines discuss the Computer Science 7-12 Program design, professional core rationale, candidate competencies, Pennsylvania standards, assessments in a standards aligned system, faculty, field experiences and student teaching, new teacher support, and appendices with design examples and course content information. The subject-specific content requirements for secondary programs are unchanged from the [Chapter 354 General Standards and Specific Program Guidelines for State Approval of Professional Educator Programs](#).

The subject-specific standards for the competencies for the Computer Science 7-12 teacher preparation program are based upon the Computer Science Teachers Association (CSTA) Revised Academic standards<sup>1</sup>. The CSTA academic standards detail a core set of learning objectives providing the foundation for a rigorous K-12 computer science curriculum. The standards introduce the foundational concepts of computer science making them accessible to all learners. The CSTA K-12 academic standards were written by educators.

The CSTA 2017 revised standards were voluntarily endorsed by the Pennsylvania State Board of Education, January 2018. Upon the voluntary endorsement of the CSTA standards by the Pennsylvania State Board of Education, a cross-sector group of 50 P-20 educators co-constructed the computer science teacher competencies for the Computer Science 7-12 Program design based upon these core computer science student standards.

## PROGRAM DESIGN

The Professional Core courses, competencies, and experiences for the Computer Science 7-12 teacher preparation program should be designed to address the broad set of issues, knowledge, and competencies that are relevant to secondary grades teaching and learning. The program must prepare teachers who will be able to ensure students' mastery of academic standards. The Professional Core component of the program design must be maintained regardless of the configuration or options that the training program selects. The Professional Core in the 7-12 certification program consists of required competencies and includes field experiences. A minimum 12-week student teaching experience is a requirement of the 7-12 teacher certification program. Programs have flexibility in how they address adaptations, accommodations, and cognitive development of diverse students in an inclusive setting (9 credits or 270 hours or equivalent combination embedded in coursework, activities, or projects), and meeting the needs of English Learners (3 credits or 90 hours or equivalent combination embedded in coursework, activities, or projects). See Appendix A.

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<sup>1</sup> [Computer Science Teachers Association Revised 2017 Academic Standards](#)

**Professional Core for secondary-level teacher preparation must include:**

**I. Secondary Education**

- A. Organizational Structure of the High School
- B. Adolescent Development

**II. Subject Matter Content and Pedagogy**

- A. Subject Matter Content
- B. Pedagogy

**III. Assessment**

**IV. Professionalism**

**Adaptations and Accommodations for Diverse Students in an Inclusive Setting and Meeting the Needs of English Language Learners (Appendix A)**

The Professional Core of courses, competencies, and experiences for secondary teacher preparation programs must be designed to address the issues and knowledge that are relevant for secondary-level teaching and learning. The philosophy and standards (Pennsylvania standards as well as those of the learned societies of the content areas, such as the CSTA<sup>2</sup>) must permeate the candidates' course experiences, as well as their field experiences and student teaching.

Institutions are charged with producing evidence to demonstrate that their graduates understand and apply the knowledge, concepts, and skills essential for successful Computer Science 7-12 instruction. The program design must describe clearly how the relevant set of knowledge, skills, and competencies inform the program design, and the application must also indicate how the institution will assess whether candidates have acquired the required knowledge, skills, and competencies.

For candidates preparing to be teachers in grade 7-12, all courses should be grounded in adolescent development and enable them to gain the knowledge and experience to work successfully with family members and the broader community. Faculty who teach in the professional core must have demonstrated expertise in education methods appropriate to the grade 7-12 content they are teaching, as well as advanced degrees in disciplines appropriate to teaching in the program.

## **PROGRAM DELIVERY**

The Pennsylvania Department of Education (PDE) believes that 7-12 Certificate Preparation programs should be comprehensive and delivered through a combination of university classroom and school settings. While some online courses may be a component of the program, programs that are delivered completely online will not be approved.

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<sup>2</sup> [Based upon the Computer Science Teachers Association 2017 Revised Academic Standards](#)

## **PROFESSIONAL CORE RATIONALE**

For Pennsylvania teachers, Title 22 of the Pennsylvania Code, §354.25(3), as well as §354.32 (a)(1) and §354.33(1)(i)(A)-(H) enumerate aspects of the knowledge and skills that candidates for teaching in the commonwealth are expected to learn and demonstrate. While this set of knowledge and skills is developed in university academic classroom settings and clinical practice, the program curriculum should reflect this centrality to the process of educator preparation.

### **I. Secondary Education**

#### Organizational Structure of the High School

Understanding the organizational structure of the high school is central to the work of secondary teachers. Such work is guided by knowledge of the philosophical, historical, and social foundations of education, including the development of the high school, the diverse needs of students in grades 7-12, and the particularities of the need for active citizens and community members, as well as the labor market. Teacher preparation in this area should be geared toward the social, emotional, and intellectual development of adolescents and should be grounded in the notion of communities of practice.

#### Adolescent Development

The study of adolescent development is critical for any secondary-level teacher. A teacher should have a working knowledge of the concepts, principles, and theories of adolescent development, which will support the teacher in ensuring the healthy social, intellectual, sexual, emotional, and moral development of all students. Likewise, awareness of diversity issues supports the motivation and self-esteem of students in grades 7-12, as well as encouraging academic excellence.

### **II. Subject Matter Content and Pedagogy**

#### Subject Matter Content

Teachers in the secondary (7-12) levels are expected to have expertise in the subject matter they teach. This expertise is critical for modeling the thinking patterns of experts in the subject field, as well as for relating the various components of secondary subject matter. Candidates interested in teaching at secondary levels must in one sense be prepared to “unpack” complex issues and procedures to their foundational elements, yet in another sense be able to motivate and challenge students with a variety of evolving 21st century applications of the subject matter. This expertise may be a result of a teacher education program that requires subject matter coursework, or it may be a result of an undergraduate major in the subject area that is accompanied or followed by a teacher preparation program.

#### Content Specific Guidelines

PDE has secondary grades 7-12 program framework guidelines for all 7-12 program areas, developed by the PDE Division of Professional Education and Teacher Quality over a two-year period and approved by the State Board of Education in 2000. Secondary education programs are expected to follow the guidelines to ensure that the required subject-area



content is completed prior to the completion of the program. Those guidelines are available on the [PDE website](#).

In developing the guidelines, efforts were made to align the content with the Pennsylvania Academic Standards, the standards of the professional organizations, the content of the state-required assessments, and specific language and conditions of the state's professional education community.

The guidelines for each preparation program were originally divided into three categories: Knowing the Content, Performances, and Professionalism. For the purpose of secondary program reviews in 2010 and beyond, only the first section of the Specific Program Guidelines, Knowing the Content, is required. The subsequent sections have been incorporated into this framework document with clarifications and revisions.

## Pedagogy

Institutions are charged with producing evidence to demonstrate that their graduates understand and apply the knowledge, concepts, and skills essential for successful grade 7-12 instruction. Pedagogy includes understanding of how a particular content area's concepts are related to one another and to other content areas; the historical and evidence-based variety of approaches to teaching the content; engaging and maintaining the interest of typical and atypical adolescent learners; utilizing a range of resources and technology to facilitate learning; knowing how to differentiate instruction; and supporting literacy development in a variety of contexts (e.g., textual, media).

## III. Assessment

Assessment skills, extensive practice, and the application of assessment results to design effective individualized interventions are essential middle level teaching skills. Successful demonstration of these abilities is an expected outcome through the PDE 430, *Pennsylvania Statewide Evaluation Form for Student Professional Knowledge and Practice*.

The preparation program coursework content should be organized to provide candidates with the knowledge and skills to recognize students having difficulty, identify student challenges, design interventions (with collaborative assistance from colleagues when needed), and test the effectiveness of appropriate interventions. Course content must enable candidates to learn how to understand and use data about student learning (standardized tests and other assessment practices), adapt and modify instruction, use technology appropriately, and adapt curriculum successfully. Translating diagnostic information about student learning into successful teaching strategies that will improve student learning requires formal preparation, proficiency with assessment tools, and extensive practice under careful supervision and mentoring. The content must also include explicit attention to [Pennsylvania's Academic Standards](#) and [Assessment Anchor Content Standards](#) for grades 7 through 12, as well as be consistent with authentic, screening, diagnostic, formative, benchmark, and summative diagnostic assessments.

## Definitions of Assessments

The following definitions describe different types of assessments used in classroom settings. The definitions for diagnostic, benchmark, formative, and summative can also be found on the [Standards Aligned System](#) web pages. Candidates are expected to understand the

differences between screening, authentic, diagnostic, formative, and summative assessments.

The program design of a program must include instruction and assessments of candidates demonstrating the appropriate use of each type of assessment.

Authentic:

A form of assessment in which students are asked to perform real world tasks that demonstrate meaningful application of essential knowledge and skills. The assessment usually includes a task for students to perform, and a rubric is used to evaluate their performance.

Screening:

Screening assessments are used to determine which students may be at risk of lower achievement. Poor performance on the screening assessment identifies those students needing additional, in-depth assessment of strengths and weaknesses. The primary purpose of screening assessments is to identify those students who need additional instructional (or behavioral) intervention. As adolescents develop, additional screenings may be necessary. An essential element of using a screening assessment is implementing additional identified intervention(s) (instructional, behavioral, or medical).

Summative Assessment:

Summative assessments seek to make an overall judgment of progress made at the end of a defined period of instruction. They occur at the end of a school level, grade, or course, or are administered at certain grades for purposes of state or local accountability. These are considered high-stakes assessments and the results are often used in conjunction with the Every Student Succeeds Act (ESSA). They are designed to produce clear data on the student's accomplishments at key points in his or her academic career. Scores on these assessments usually become part of the student's permanent record and are statements as to whether the student has fallen short of, met, or exceeded the expected standards. Whereas the results of formative assessments are primarily of interest to students and the teachers, the results of summative assessments are also of great interest to parents, the faculty, the central administration, the press, and the public at large. It is the data from summative assessments on which public accountability systems are based. If the results of these assessments are reported with reference to standards and individual students, they can be used as diagnostic tools by teachers to plan instruction and guide the leadership team in developing strategies that help improve student achievement. Examples of summative assessment are PSSA, PSSA-M, PASA, Terra Nova, Stanford 10, Access for English Language Learners, end of unit tests, and final exams, e.g. Keystone Exams.

Formative Assessment:

Formative assessments are used by teachers and students during instruction to provide feedback, which guides the teacher to adjust ongoing instruction to improve students' achievement of intended instructional outcomes. Pennsylvania defines formative assessment as classroom-based assessment that allows teachers to monitor and adjust their instructional practice to meet the individual needs of their students. Formative assessment can consist of formal instruments or informal observations. The key is how the

results are used. Results should be used to shape teaching and learning. Black and William (1998) define formative assessment broadly to include instructional formats that teachers utilize to get information that when used diagnostically alter instructional practices and have a direct impact on student learning and achievement. Under this definition, formative assessment encompasses questioning strategies, active engagement check-ins and analysis of student work based on set rubrics and standards including homework and tests. Assessments are formative when the information is used to adapt instructional practices to meet individual student needs as well as providing individual students corrective feedback that allows them to “reach” set goals and targets. Ongoing formative assessment is an integral part of effective instructional routines that provide teachers with the information they need to differentiate and make adjustments to instructional practice to meet the needs of individual students.

When teachers know how students are progressing and where they are having trouble, they can use this information to make necessary instructional adjustments, such as re-teaching, trying alternative instructional approaches, or offering more opportunities for practice. The use of ongoing formative classroom assessment data is an imperative. Effective teachers seamlessly integrate formative assessment strategies into their daily instructional routines.

Benchmark:

Assessments that are designed to provide feedback to both the teacher and the student about how the student is progressing toward demonstrating proficiency on grade- level standards. Well-designed benchmark and standards-based assessments:

- measure the degree to which students have mastered a given concept;
- measure concepts, skills, and/or applications;
- are reported by referencing the standards, not other students' performance;
- serve as a test to which teachers want to teach; and
- measure performance regularly, not only at a single moment in time.

## **CANDIDATE COMPETENCIES**

This section outlines the competencies required for certification by Chapter 354: “The preparing institution shall ensure that candidates complete a well-planned sequence of professional educator courses and field experiences to develop an understanding of the structure, skills, core concepts, facts, methods of inquiry and application of technology related to each academic discipline the candidates plan to teach or in the academic disciplines related to the non-instructional certificate categories in which they plan to serve.” (22 Pa. Code §354.25(b) (3)).

Aligned resources and tools to support the acquisition of these competencies can be found on the [Standards Aligned System \(SAS\)](#) portal.

Secondary-level teachers should be prepared in programs that facilitate understanding of the organizational structure of the high school, adolescent development, subject matter content and pedagogy, and assessment. Likewise, candidates should uphold professional standards and engage in lifelong learning and professional development. Each of these competencies embraces the notion of the school and classroom as a community of learners which maintains that reflection is at the core of successful practice.

## **I. Secondary Education**

A guiding principle for the secondary level is to prepare professionals who support student learning consistently in a variety of contexts and with a variety of means. Candidates will demonstrate their abilities in and understanding of:

### **A. Organizational Structure of the High School**

1. Make curricular decisions that are grounded in the social, philosophical, and historical foundations of education.
2. Engage adolescents in activities related to their interpersonal, community, and societal responsibilities.
3. Develop classrooms as communities of practice that are learner-oriented.
4. Utilize student assistance and student support programs that attend to the intellectual, social, and emotional needs of adolescents.
5. Participate in professional organizations related to a subject-area specialization, academic discipline, and/or teaching.
6. Interact with various professionals that serve adolescents (e.g., school counselors, social service workers, home-school coordinators).
7. Understand the philosophy of secondary education.

### **B. Adolescent Development**

1. Recognize and implement the major concepts, principles, theories, and research related to adolescent cognitive, social, sexual, emotional, and moral development.
2. Design and implement strategies that encourage students' positive self-esteem, self-efficacy, and motivation.
3. Identify and respect the range of individual and cultural differences of all adolescents and the implications of those differences in teaching and learning.
4. Identify how the development of all adolescents occurs in the context of classrooms, families, peer groups, communities, and society.
5. Design and implement strategies that provide students with appropriate skills in making the transition from middle-level to high school, and then to full citizenship (work, college, military, etc.).
6. Incorporate knowledge of adolescent development into educating students in goal-setting and decision-making.
7. Create and support learning environments that promote the healthy development of all adolescents.
8. Demonstrate effective adolescent behavior strategies for the classroom.

## **II. Subject-Matter Content and Pedagogy<sup>3</sup>**

### **A. Algorithms and Programming**

#### **A1. Programing Skills:**

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<sup>3</sup> [Based upon the Computer Science Teachers Association 2017 Revised Academic Standards](#)

1. Convert problem statement into an algorithm.
2. Given an algorithm, create a computational artifact that implements that algorithm.
3. Create variables that store data.
4. Create expressions that manipulate variables appropriately.
5. Use lists to aggregate data.
6. Be able to fill and manipulate data in a list.
7. Be able to evaluate efficiency tradeoffs of different data representations and algorithms.

## **A2. Control Structure:**

1. Design and implement programs that demonstrate:
  - Sequential;
  - Conditional;
  - Iterative, including nested loops;
  - Recursion;
  - Event handling; and
  - Execution.
2. Assess the appropriate choice of different control structures given problem constraints.
3. Determine the appropriate abstraction to model a solution and decompose the programming into smaller parts (divide and conquer).
4. Create appropriate constructs (procedures, modules, functions, methods, etc.) to solve subproblems and be able to combine subproblems into a solution for the overall problem.
5. Identify possible usages of prewritten code (e.g., API modules); encapsulate personally written code into a function for reuse through the use of parameters.
6. Understand how a generalized function can solve a specific instance via parameters.

## **A3. Program Development:**

1. Incorporate user input and feedback to develop and refine solution. Be able to work in a team to solve a problem.
2. Observe licenses and limitations when evaluating and incorporating existing artifacts into computer programs with proper attribution.
3. Identify and correct errors in a program using available tools (e.g., code trace, debugger).
4. Design and implement a test suite to discover hidden bugs.
5. Develop, implement, assess and modify curriculum and lessons as evidenced by their ability to teach students how to:
  - Identify and fix errors or inefficiencies in programs;
  - Compare actual with expected outcomes; and
  - Demonstrate a knowledge of the needs of end users, including collecting feedback from users to incorporate into the program to improve usability including menus, buttons, etc.
6. Evaluate and enhance programs from a usability perspective.

7. Demonstrate techniques and strategies to foster and facilitate collaboration.
8. Explain programs by creating end user documentation as well as in code comments.
9. Ability to explicate design and coding decisions for internal and external audiences.

## **B. Computing Systems**

### **B1. Hardware Abstractions:**

1. Evaluate a hardware component with respect to its capabilities and make evidence-based recommendations for improvement.
2. Evaluate a complex system with regard to its underlying abstractions (the relationship between whole to parts and parts to whole).
3. Some computer science examples would include how an operating system masks various hardware issues, or how a Virtual Machine allows the same source code to be run on various devices.

### **B2. Hardware and Software:**

1. Design (not necessarily implement) open-ended, creative projects that integrate hardware (sensor output, other data) and software (to analyze the data).
2. Illustrate a variety of different input, output, and storage mechanisms using appropriate hardware devices.

### **B3. Troubleshooting:**

1. Describe a hardware malfunction precisely and, with appropriate vocabulary, suggest a reasonable path to debugging the problem.

## **C. Data and Analysis**

### **C1. Representing & Translating Data:**

1. Represent data using multiple encoding schemes including, at minimum: binary, decimal, hexadecimal, ASCII, and Unicode.
2. Translate between digital data representations and real-world phenomena.
3. Recognize that floating point numbers are imprecise and understand the potential errors associated with using them (e.g., equality testing).

### **C2. Data Collection, Visualization, Transformation:**

1. Identify appropriate sources and use available computational tools for data collection and transformation.
2. Use computational tools to aggregate, synthesize, generalize, and simplify data sets.
3. Present data sets in multiple ways using a variety of software/programming tools.
4. Identify appropriate high-level encoding, and their tradeoffs, for various media (e.g., audio, video, images).

### **C3. Inference and Models:**

1. Prioritize data by relevance and accuracy and the applicability of computational models to efficiently work with the data.
2. Use data to make predictions.
3. Model phenomena as systems with rules.
4. Evaluate models against real-world observations.
5. Refine hypothesis by creating, testing, and evaluating models and simulations.
6. Analyze output of data visualizations to determine potential sources of error/bias (either in data or algorithm).

#### **D. Impacts of Computing**

1. Evaluate the ways computing technologies impact personal, ethical, social, economic, political, and cultural practices.
2. Analyze the impact of technology on ethical, social, economic, and cultural practices in both personal and global arenas.
3. Assess the ubiquity and impact of social media on inter-personal interactions (both positive, such as keeping people connected over long distance and negative, such as cyber-bullying).
4. Identify, evaluate, and address real-world accessibility, implicit and explicit bias, and equity deficits in technology design, algorithms, and computational artifacts.
5. Describe computer science projects that illustrate how the same algorithm can be used to solve problems in various disciplines.
6. Identify, assess, and utilize available tools to collaborate across cultures as well as for open source development.
7. Explain the positive and negative effects of intellectual property law, privacy, ethics, and other legal issues related to technology.
8. Identify the ways data is collected and disseminated about online interactions.
9. Examine and evaluate the competing forces of privacy policies and their legal, social, ethical, and economic consequences.

#### **E. Networks and the Internet**

##### **E1. Network Communication & Organization:**

1. Understand that a protocol is an agreement on when and how to send information.
2. Describe how data requests go from one device to another through the internet using both hardware and software protocols.

##### **E2. Cybersecurity:**

1. Compare and contrast ways to secure data and communication (e.g., using secure passwords, HTTPS vs. HTTP) considering usability v. security, feasibility v. ethics, etc.
2. Identify and evaluate appropriate current events to illustrate cybersecurity concepts and issues (e.g., Botnets, malware, man-in-the-middle, DDoS).
3. Explain and implement various encryption schemes that are used to secure data and communication over networks.

## **F. Pedagogy**

1. Use effective instructional principles, especially those that draw on the research on pedagogical content knowledge in course content.
2. Employ teaching and learning strategies that consider and capitalize upon the developmental characteristics of all adolescents.
3. Use effective comprehensive instructional principles responsive to the needs of students.
4. Incorporate technology into instruction appropriately.
5. Use materials designed explicitly for the secondary grades.
6. Make decisions about curriculum and resources that reflect an understanding of adolescent development.
7. Utilize subject-specific methodologies.
8. Deliver curriculum that is relevant, challenging, integrative, and exploratory.
9. Incorporate adolescents' ideas, interests, and experiences into instruction
10. Design successful interventions responsive to the needs of individual students.
11. Integrate technology and other resources appropriately to prepare students for higher education, full citizenship, and the workforce.
12. Apply Pennsylvania core academic standards into both short-term and long-term instructional goals.
13. Create lessons that support literacy across the curriculum.
14. Prepare students to gain, process, and use information in different contexts.
15. Design educational experiences that help students communicate using various tools and means.
16. Create lessons that demonstrate an understanding of literacy both broadly and in discipline contexts.
17. Utilize literature, classic texts in different genres, commercial reading materials, electronic-based information, and locally-created materials.
18. Demonstrate the adaptation of educational or subject-specific research in lessons
19. Differentiate instruction, assessment, and management strategies to represent a broad spectrum of learning abilities, learning styles, multiple intelligences, and interests.
20. Develop inclusionary practices that respect differences and encourage students to work together to maximize their own and one another's learning.

## **III. Assessment Skills**

- A.** Use assessment data to guide instruction;
- B.** Monitor the results of interventions and alter instruction accordingly;
- C.** Use multiple assessments (authentic, screening, diagnostic, formative, benchmark, and summative) that are developmentally appropriate for young adolescent learners;
- D.** Implement technology in student assessment measures;
- E.** Use multiple assessment strategies that effectively measure student mastery of the curriculum in more than one way; and
- F.** Design assessments that target academic standards and assessment anchor content standards in subject areas.

## **IV. Professionalism**



- A. Act as positive role models, coaches, and mentors for all adolescents;
- B. Communicate deep content knowledge in the subjects taught;
- C. Serve on an advisory program, co-curricular activities, and other programs supporting the curriculum;
- D. Uphold high professional standards;
- E. Utilize research and data-based decision-making;
- F. Participate fully in grade- and building-level structures;
- G. Develop effective teaching practices and focus on continual improvement within the teacher-preparation apprenticeship model; and
- H. Understand and comply with Pennsylvania’s Code of Professional Practice and Conduct for Educators.

**ALIGNMENT WITH PENNSYLVANIA’S ACADEMIC STANDARDS AND ASSESSMENT ANCHOR CONTENT STANDARDS**

The grades 7-12 teacher must have deep understanding and mastery of the Academic Standards and the Assessment Anchor Content Standards for those grade levels, including Alternate Academic Content Standards (See below).<sup>4</sup> Section 49.14 (iii) of the Pennsylvania School Code identifies how the Academic Standards are included in certification programs: “Institutions are able to demonstrate that educator candidates have participated in instructional activities that enable the candidates to provide instruction to students to meet the provision of Chapter 4 (relating to academic standards and assessment).” Furthermore, preparation programs must be designed to enable candidates to integrate general, core, and professional coursework so the candidate can teach and assist public school students in achieving the academic standards under Chapter 4 (22 Pa. Code §354.25(b)).

<p><b>Pennsylvania Academic Standards (22 Pa. Code § 4.12)</b></p> <ul style="list-style-type: none"> <li>(1) Science &amp; Technology<sup>*a</sup></li> <li>(2) Environment &amp; Ecology<sup>*a</sup></li> <li>(3) Social Studies <ul style="list-style-type: none"> <li>(i)History</li> <li>(ii)Geography</li> <li>(iii)Civics &amp; Government</li> <li>(iv) Economics</li> </ul> </li> <li>(4) Arts &amp; Humanities</li> <li>(5) Career Education &amp; Work</li> <li>(6) Health, Safety &amp; Physical Education</li> <li>(7) Family &amp; Consumer Science</li> <li>(8) Reading <ul style="list-style-type: none"> <li>(i) Reading<sup>*a</sup></li> <li>(ii) Writing</li> <li>(iii) Speaking &amp; Listening</li> </ul> </li> <li>(9) Mathematics<sup>*a</sup></li> </ul> <p><small>*Grade level Assessment Anchor Content Standards exist for these standards.  <sup>a</sup>Grade span Alternate Academic Content Standards exist for these standards.</small></p>
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<sup>4</sup> Alternate Academic Content Standards do not current exist for the [Computer Science Teachers Association revised 2017 Standards](#)

The preparing institution's program should enable candidates to identify the difference between the Academic Standards and the Assessment Anchor Content Standards. Candidates must also be able to demonstrate their awareness of standards for the earlier and later grades to ensure that there is a continuum of PreK-12 student academic growth. Knowing the continuum of grade level standards is especially important for the 4-8 middle level teacher, where Assessment Anchor Content Standards exist at all grade levels within the certificate. This knowledge will enable the candidate to address the needs of students who have not met the standards including students with disabilities or English Learners in inclusive settings.

Candidates must demonstrate mastery beyond superficial levels to be able to prepare students to be successful on state and local assessments. This mastery will allow the candidate to guide and assist the public-school student in achieving proficiency on all state assessments. The annual Pennsylvania System of School Assessment (PSSA) is a standards-based criterion-referenced state assessment used to measure a student's attainment of the academic standards while also determining the degree to which school programs enable students to attain proficiency of the standards. Every Pennsylvania student in grades 3 through 8 is assessed in English language arts and math. Every Pennsylvania student in grades 4 and 8 is assessed in science.

The preparation program requirements must function together so that candidates understand and make effective use of the academic standards, have the skills to develop and implement appropriate interventions to improve student learning, have the content and pedagogical knowledge to teach the curriculum effectively, understand and make regular use of standardized and curriculum-based assessment data, and use the instructional materials and resources necessary to support standards-based instructional practices. Preparing institutions must provide evidence that there is an alignment of the candidates' course work, clinical experiences, and assessments with the standards adopted by the Commonwealth. Collaboration among "professional educator faculty and faculty from liberal arts and other academic disciplines in program planning and evaluation of all facets of the curriculum" is essential to facilitating deep understanding of the standards by candidates (as regulated by 22 Pa. Code §354.26(a)(1)).

#### **Electronic Access to Standards**

This link provides access to the [State Board of Education Academic Standards website](#). It contains the Pennsylvania Academic Standards, the Assessment Anchor Content Standards, the Alternate Academic Content Standards, the Early Learning Standards, and the Language Proficiency Standards for English Language Learners.

## **FACULTY**

Certification programs submitted for review to the Department will include the qualifications of faculty assigned to teach each course within the professional core of the program. Faculty who teach in the professional core must have demonstrated expertise in middle level education, as well as advanced degrees in disciplines appropriate to teaching in the

program. Additionally, program proposals will be expected to include evidence of successful alignment and evidence of significant collaboration between arts and sciences faculty and education faculty, along with current practicing secondary level teachers and administrators in all content areas (refer to Chapter 354.25 and 354.26).

## **FIELD EXPERIENCES AND STUDENT TEACHING**

All professional educator programs must include the components of field experiences and student teaching into the program design. As regulated by Chapter 354 of the Pennsylvania Code (Title 22), the planned sequential field experiences may begin as early as the initial semester of college enrollment, prior to the required minimum 12-week full-time student teaching experience (§354.25(d)&(f)). These experiences are to benefit the candidates' preparation by providing opportunities to apply principles and theories from the program to actual practice in the classroom, provide practice with diverse populations, ages, and school settings (§354.25(d)(1-2)).

### **Field Experience and Student Teaching Requirements**

The professional education program is required to provide evidence of the candidate's participation in developmental field experiences and student teaching, under the supervision of college personnel and cooperating teachers who are well trained, highly qualified, and who demonstrate competence in teaching and mentoring in the field of 7-12 education. The program must also provide evidence that the criteria and competencies required for exit from the 7-12 certification programs are assessed through coursework, field experiences, and student teaching. In addition to incorporating a self-reflective emphasis, the program is expected to require candidates to demonstrate their knowledge and competence in fostering student learning and child well-being.

### **Definitions of Field Experience and Student Teaching**

There are four stages of field experience and student teaching. Each one is progressively more intensive and requires the candidate to assume gradually more responsibility. The experiences should take place in collaborative settings to give candidates a flavor for the values, culture, and working styles of learning environments. This includes learning about the socio-emotional and academic traits of students and gaining experience with the teaming approach to teaching through direct observation and participation in teamwork and collaboration at the elementary/middle level.

Field experiences are defined as a range of formal, required school and community activities participated in by students who are enrolled in teacher preparation programs. These activities generally do not include student teaching under the supervision and mentorship of a classroom teacher. Effective field experiences provide candidates with increasing exposure to schools, under the guidance of program faculty and trained teacher mentors, throughout the preparation program. Institutions should explain:

1. How they implement field experiences to allow candidates to progress from observing, to working with small groups of students, to teaching small groups of students under the direction of a certified teacher, to the culminating student teaching experience.
2. The duration of candidate field experiences.
3. How these experiences are closely integrated with coursework, assessment practices, and program goals.

Student teaching is defined as a set of organized and carefully planned classroom teaching experiences required of all student teachers in a preparation program. Student teachers are assigned to one or more classrooms, closely supervised and mentored by a certified teacher, the cooperating teacher, who provides regular feedback to the student on his or her classroom teaching performance. General supervision of student teachers is provided by a university or college professional educator.

**Field Experience Guiding Principles:**

- Field experiences are designed and delivered for candidates to make explicit connections with content areas, cognitive development, motivation, and learning styles.
- Field experiences allow teacher candidates to observe, practice, and demonstrate coursework competencies, under the supervision of education program faculty, and under the mentorship of certified teachers.
- Field experiences must allow teacher candidates to progress from observation to teaching small groups of students under the mentorship of a certified educator at the pre-student teaching level, to the culminating student teaching experience.
- Field experiences are ongoing throughout the program, aligned with coursework, and include varied experiences in diverse environments.
- Candidates need time to learn and demonstrate the complex competencies and responsibilities required by teachers.

## **Types of Field Experiences and Student Teaching**

Each candidate must participate in field experiences. At least one experience during Stage 3 or student teaching must include students in inclusive settings. An inclusive setting is defined as an educational setting which includes children with and without special needs. An inclusive setting includes at least one child with an IFSP/IEP. At least one experience during Stage 3 or student teaching must be in a public-school setting.

The student teaching component of approved programs in the Commonwealth is expected to involve institution faculty with knowledge and expertise in the certification area being pursued by a teacher candidate. Classroom mentor teachers (sometimes called cooperating teachers), under whose direct supervision the student teachers work, are expected to be trained by the institution, preferably in 7-12 best practices, and to have appropriate certification.

Candidates must learn to identify and conduct themselves as members of the profession. They need to know and use ethical guidelines and other professional standards related to 7-12 best practices. Candidates must also have opportunities to collaborate with other professionals and become informed advocates for sound educational practice and policies.

### **Professional Behaviors to be Demonstrated Throughout the Field Experiences**

- Understand and adhere to Codes of Conduct
- Appreciate the need for, and maintain, student, family, and staff confidentiality
- Acquire and maintain appropriate clearances
- Understand and adhere to policies and procedures of the specific institution
- Advocate for high quality, child-centered teaching practices utilizing the appropriate supervisory channels, including requirements related to mandated reporter status

## **Field Experience Stages**

The following section describes the four stages of field experience required for all certificate areas.

### **Stage 1: Observation**

Candidates are observers in a variety of education and education related settings (e.g., community organizations, tutoring programs). Programs are expected to design this phase so that candidates participate before formal admission to the teacher education program. Apart from community and after-school programs, there must be a range of school and classroom experiences (e.g., urban, suburban, rural; high- and low-performing schools) all taking place in middle level grades so that candidates have a broad experience and learn as much as possible about middle level learners and middle level education philosophy.

### **Stage 2: Exploration**

This stage may be called the “assistant” phase of field experience. It is where the candidate works under a certified teacher’s direction with a small group of students. Activities could include tutoring, helping with reading assignments, and so forth. Ideally, this stage would also occur before admission to the teacher preparation program.

### **Stage 3: Pre-student teaching**

Pre-student teaching is where candidates will work with small groups of students, in school or in after-school settings, under the supervision of a certified teacher. For this phase of clinical (field) experience, middle level candidates will be admitted to the education program, have taken at least one methods course, but will not be in full control of a class.

At least one experience during field experience 3 or student teaching must include students with special needs in inclusive settings. An inclusive setting is defined as an educational setting which includes children with and without special needs. An inclusive setting includes at least one child with an IFSP/IEP.

#### **Stage 4: Student Teaching**

There is a minimum of 12 weeks full-time student teaching required in §354.25(f). The student teacher must be supervised by faculty with knowledge and experience in the area of certification and a cooperating teacher with appropriate professional educator certification (3 years certified teaching experience and 1-year experience in the placement school) who is trained by the preparation program faculty (22 Pa. Code, §354.25(f)).

#### **New Teacher Support**

According to §49.16 (22 Pa. Code), all school entities (LEAs) must submit a plan for the induction experience for first-year teachers. This plan is submitted as part of the LEA's strategic plan written every six years as required by Chapter 4. Preparing institutions have a role in a new teacher's induction experience. The preparing institution shall provide, "...ongoing support for novice educators in partnership with local education agencies during their induction period, including observation, consultation and assessment." (22 Pa. Code §49.14(4)(ix))

## **APPENDICES**

**Appendix A:** Accommodations and Adaptations for Students with Disabilities in an Inclusive Setting and Meeting the Needs of English Language Learners.

**Appendix A**



**ACCOMMODATIONS AND ADAPTATIONS  
FOR STUDENTS WITH DISABILITIES IN AN INCLUSIVE SETTING  
AND MEETING THE NEEDS OF ENGLISH LANGUAGE LEARNERS  
PROGRAM GUIDELINES**



## INTRODUCTION

Pennsylvania's teacher preparation programs must include the competencies and skills needed to equip teachers to accommodate and adapt instruction for students with disabilities in an inclusive setting and to assist English language learners.

Final rulemaking of the State Board of Education published in the *The Pennsylvania Bulletin* on September 22, 2007 requires **all instructional and educational specialist preparation programs to include the following by January 1, 2011:**

1. At least 9 credits or 270 hours regarding accommodations and adaptations for students with disabilities in an inclusive setting (instruction in literacy skills development and cognitive skill development for students with disabilities must be included); and
2. At least 3 credits or 90 hours regarding the instructional needs of English language learners. (22 PA Code, Chapter 49, §49.13(b) (relating to policies)).<sup>5</sup>

Competencies and skills to accommodate and adapt instruction for students with disabilities in an inclusive setting and to assist English language learners must be identifiable during the program review process. Candidates who apply for a Pennsylvania instructional and/or educational specialist certificate on or after **January 1, 2013** must have completed the credits/hours described above.

## DESIGN

Applicable hours are limited to a combination of seat hours of classroom instruction, field observation experiences, major research assignments, and development and implementation of lesson plans with accommodations and adaptations for diverse learners in an inclusive setting. In order to help all teachers better understand ways to accommodate and adapt learning for students with disabilities in an inclusive setting, it is essential that courses and course content be developed and taught by faculty who have thorough knowledge and expertise in using evidence-based practices to teach individuals with disabilities. The preferred approach is the use of faculty with post-graduate training and certification in special education. While preparation programs may infuse the candidate competencies related to accommodations and adaptations for students with disabilities into existing courses or add additional courses as appropriate, it is the explicit application and relationship to students with disabilities that require faculty who deliver the content to have thorough knowledge and expertise in special education.

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<sup>5</sup> (4) Evaluation and approval of teacher education programs leading to the certification and permitting of professional personnel. (i) The evaluation by the Department will provide assurance that, on or before January 1, 2011, teacher education programs will require at least 9 credits or 270 hours, or an equivalent combination thereof, regarding accommodations and adaptations for students with disabilities in an inclusive setting. Within the content of these 9 credits or 270 hours, instruction in literacy skills development and cognitive skill development for students with disabilities must be included, as determined by the institution. At least 3 credits or 90 additional hours, or an equivalent combination thereof, must address the instructional needs of English language learners. For purposes of this requirement, 1 credit equals 30 hours of coursework. Applicable hours are limited to a combination of seat hours of classroom instruction, field observation experiences, major research assignments, and development and implementation of lesson plans with accommodations and adaptations for diverse learners in an inclusive setting. (22 Pa. Code §49.13(4)(i)).

Training for higher education faculty may include the use of modules and other educational activities prepared by special education faculty.

**COMPETENCIES: ACCOMMODATIONS AND ADAPTATIONS FOR STUDENTS WITH  
DISABILITIES IN AN INCLUSIVE SETTING  
(9 CREDITS OR 270 HOURS)**

The following outline includes the competencies for the 9 credits or 270 course hours addressing the academic needs and adaptations for students with disabilities.

**I. Types of Disabilities and Implications for Learning**  
**Candidates will be able to:**

- A.** Demonstrate an understanding of and ability to plan for: type, identification, and characteristics of different types of disabilities, as well as effective, evidence-based instructional practices and adaptations.
- B.** Demonstrate an understanding of the legal rights and responsibilities of the teacher related to special education referral and evaluation and the rights and procedural safeguards that students are guaranteed.
- C.** Demonstrate an understanding of possible causes and implications of over-representation of minorities in special education to avoid misinterpretation of behaviors that represent cultural, and linguistic differences as indicative of learning problems.

**II. Cognitive Skill Development to Ensure Achievement of Students with Disabilities in Standards Aligned System to include All School Environments**

- A. Cognitive** – Delineate how individuals acquire and process information.
  - 1. Design learning environments to facilitate encoding, storage, and retrieval of knowledge and information for memory, attention, perception, action, and problem solving.
  - 2. Describe the developmental patterns of change, physical, cognitive, and psychosocial areas that have been identified for each stage of development.
  - 3. Apply concepts of human development to education and learning regarding attention, memory, conceptual knowledge and its formation, reasoning, decision-making, problem-solving, executive functioning, principles and mechanisms of development, intelligence, action, and motor control.
  - 4. Specify the experiences children need from birth to age eight to prepare them to learn, read, and succeed in school.
  - 5. Identify early interactions with adults and peers, the early childhood education teaching methods and curricula, and comprehensive early childhood interventions that support learning and development, specifically in domains that prepare children from diverse backgrounds for kindergarten and the early grades.
- B. Physical** – Recognize patterns of typical physical developmental milestones and how patterns of students with disabilities may be different, and plan effectively for possible accommodations and/or modifications which may be necessary to implement effective instructional practices.
- C. Social** – Initiate, maintain, and manage positive social relationships with a range of people in a range of contexts.
  - 1. Recognize areas of development for students with disabilities and plan effectively for: interpersonal processes, forming and maintaining relationships (including parent-

child, caregiver, peer, friend, sibling), and attachment models and their effects on learning.

2. Apply principles in social competence, social withdrawal, social role formation and maintenance, prosocial behaviors, and aggression as they affect learning.

**D. Behavioral** – Recognize patterns of typical behavioral milestones and how patterns of students with disabilities may be different, and plan effectively for positive teaching of appropriate behaviors that facilitate learning.

**E. Language** – Apply reading predictors, analyzing the effect of individual differences in specific perceptual, linguistic, and cognitive skills and how they affect a child's ability to read.

1. Apply principles of early learning to language development in the following areas: language comprehension, language expression, language form and syntax, morphology, and semantics.
2. Apply and teach skills of spoken language as a precursor of reading and academic development.

**F. Positive Environments for Learning for Students with Disabilities**

1. Define the scientific principles influencing academic and social behavior.
2. Implement positive behavioral interventions based on a functional analysis of behavior.
3. Create an optimal learning environment by utilizing, evaluating, modifying, and adapting the classroom setting, curricula, teaching strategies, materials, and equipment.

**G. Collaboration and Communication**

1. Identify effective co-planning and co-teaching strategies.
2. Identify collaborative consultative skills and models (i.e., understanding role on the IEP team, teaming, parallel teaching).
3. Identify instructional levels of students through collaboration with members of the IEP team.
4. Understand the role of the general educator as part of the team for transition planning across transition points (i.e., preschool to school entry, grade level to grade level, school to school, to post school outcomes).
5. Demonstrate an understanding of the meaningful roles that parents and students play in the development of the student's education program.
6. Demonstrate sensitivity for multicultural and economic perspectives in order to encourage parent participation.
7. Demonstrate an understanding of how to support student and family communication and meaningful participation into the student's educational program.
8. Work collaboratively with all members of the student's instructional team including parents and non-educational agency personnel.

### **III. Assessments**

Candidates will be able to:

**A.** Identify, administer, interpret, and plan instruction based on each of the following assessment components in a standards-aligned system:

1. Authentic – A form of assessment in which students are asked to perform real-world tasks that demonstrate meaningful application of essential knowledge and

- skills. The assessment usually includes a task for students to perform, and a rubric is used to evaluate their performance.
2. Screening – Screening assessments are used to determine which students may be at risk. Poor performance on the screening assessment identifies those students needing additional, in-depth assessment of strengths and weaknesses. The primary purpose of screening assessments is to identify children early who need additional instructional (or behavioral) intervention. An essential element of using a screening assessment is implementing additional identified intervention(s) (instructional, behavioral, or medical).
  3. Diagnostic – The purpose of diagnostic assessments is to ascertain, prior to instruction, each student's strengths, weaknesses, knowledge, and skills. Using diagnostic assessments enable the instructor to remediate students and adjust the curriculum to meet each pupil's unique needs. (Examples of diagnostic assessments are: DRAs, Running Records, GRADE, GMADE)
  4. Formative – Pennsylvania defines formative assessments as classroom-based assessments that allow teachers to monitor and adjust their instructional practice to meet the individual needs of their students. Formative assessments can consist of formal instruments or informal observations. The key is how the results are used. Results should be used to shape teaching and learning. Black and William (1998) define formative assessments broadly to include instructional formats that teachers utilize to get information that is used diagnostically to alter instructional practices and have a direct impact on student learning and achievement. Under this definition, formative assessment encompasses questioning strategies, active engagement check-ins (such as response cards, white boards, random selection, think-pair-share, popsicle sticks for open-ended questions, and numbered heads), and analysis of student work based on set rubrics and standards including homework and tests. Assessments are formative when the information is used to adapt instructional practices to meet individual student needs as well as to provide individual students corrective feedback that allows them to "reach" set goals and targets. Ongoing formative assessment is an integral part of effective instructional routines that provide teachers with the information they need to differentiate and make adjustments to instructional practice to meet the needs of individual students. When teachers know how students are progressing and where they are having trouble, they can use this information to make necessary instructional adjustments, such as re-teaching, trying alternative instructional approaches, or offering more opportunities for practice. The use of ongoing formative classroom assessment data is an imperative. Effective teachers seamlessly integrate formative assessment strategies into their daily instructional routines.
  5. Benchmark – Assessments that are designed to provide feedback to both the teacher and the student about how the student is progressing towards demonstrating proficiency on grade level standards. Well-designed benchmark assessments and standards-based assessments measure the degree to which students have mastered a given concept, measure concepts, skills, and/or applications, are reported by referencing the standards, not other students' performance, serve as a test to which teachers want to teach, and measure performance regularly, not only at a single moment in time. (Examples of benchmark assessments are: 4Sight, Riverside 9-12, DIBELS)
  6. Summative – Summative assessments seek to make an overall judgment of progress at the end of a defined period of instruction. Often these summative assessments occur at the end of a school level, grade, or course, or are

administered at certain grades for purposes of state or local accountability. These summative assessments are considered high-stakes assessments and the results are often used in conjunction with the No Child Left Behind Act (NCLB) and Adequate Yearly Progress (AYP). They are designed to produce clear data on the student's accomplishments at key points in his or her academic career. Performance on these assessments are often part of the student's permanent record and serve as an indication of overall performance on a set of standards. Results from summative assessments are of interest to parents, faculty, administration, the press, and the public. The data from summative assessments are the basis of accountability systems. (Examples of summative assessment: PSSA; Terra Nova)

- B.** Demonstrate an understanding of the types of assessments used (e.g., screening, diagnostic, formative, summative) and the purpose of each assessment in a data-based decision-making process.
- C.** Demonstrate the use of formal and informal assessment data for instructional, behavioral, and possible eligibility for special education based on the type of assessment, level of the students being assessed, and the purpose of and the quality of instruction.
- D.** Demonstrate an understanding of the multi-disciplinary evaluation process and an ability to articulate the findings presented in an evaluation report including grade-level equivalents, percentile rank, standard scores, and stanines.
- E.** Demonstrate an understanding of the components of the Individualized Education Plan (IEP) process, with emphasis on understanding measurable goals based on present levels, specially designed instruction, adaptations, accommodations, supplementary aids and services, and supports for school personnel.
- F.** Articulate differences between achievement tests, aptitude tests, and observational data used in special education placement decisions.
- G.** Create an instructional plan using assessment information related to individual student achievement.
- H.** Analyze and interpret formative assessment (e.g., curriculum-based assessment, CBA).
- I.** Demonstrate an understanding of the purpose and intent of standardized assessments and progress monitoring as one of the multiple indicators used in overall student evaluation.
- J.** Systematically monitor student performance to identify areas of need.
- K.** Use evaluative data on an individual, class, and district level to identify and implement instructional and/or programmatic revisions for quality improvement.
- L.** Demonstrate an understanding of legally acceptable modifications and accommodations for assessment for students with disabilities.
- M.** Demonstrate an understanding of ethical practice for assessment.
- N.** Recognize the need to consult with multi-disciplinary team when cultural, economic, or linguistic differences are present to avoid biased assessment.

#### **IV. Literacy Development and Instruction in Core and Intervention Areas**

Candidates will be able to:

- A.** Demonstrate an ability to match instructional research-validated literacy interventions to identified student needs.
- B.** Demonstrate a conceptual understanding of the components of reading and describe how these areas pose challenges for students with disabilities:
  - Phonological Awareness & Phonics;

Fluency;  
Vocabulary;  
Comprehension;  
Language; and  
Word Study (investigate & understand the patterns in words).

- C. Demonstrate an ability to review and evaluate literacy programs for purpose, quality, effectiveness, and research-base and show knowledge of commonly available programs.
- D. Identify evidence-based instructional practices to be used with students with disabilities in the area of literacy.
- E. Demonstrate an understanding of the evidence-based connection between literacy and behavior.
- F. Demonstrate a conceptual understanding of the components of writing and describe how these areas pose challenges for students with disabilities:
  - Text production;
  - Spelling; and
  - Composition for different types of writing.
- G. Clearly articulate and model the use of explicit and systematic instruction in the teaching of literacy (reading and writing) for students with disabilities across all reading levels.
- H. Clearly articulate and model the use of explicit and systematic instruction in the teaching of content area literacy for all students with disabilities across all reading levels.
- I. Demonstrate instructional strategies to enhance comprehension of material.
- J. Demonstrate an understanding of the challenges that students with specific disabilities face in content area literacy.
- K. Assess the readability of content area reading materials.
- L. Demonstrate the ability to adapt content area material to the student's instructional level.
- M. Utilize assessment tools with appropriate accommodations in the area of literacy to identify effectiveness of the standards-based curriculum (core literacy program for students with disabilities).
- N. Establish and maintain progress monitoring practices aligned with the identified needs of each student to adjust instruction and provide rigor in the area of literacy for students with disabilities.
- O. Establish and maintain progress monitoring practices within the content area aligned with the identified needs of each student to adjust instruction and provide rigor in the area of literacy for all students with disabilities.

**V. Effective Instructional Strategies for Students with Disabilities in Inclusive Settings**

Candidates will be able to:

- A. Identify effective instructional strategies to address areas of need.
- B. Scaffold instruction to maximize instructional access to all students.
- C. Monitor student progress to provide mediated scaffolding and increase academic rigor when appropriate.
- D. Provide feedback to students at all levels to increase awareness in areas of strength, as well as areas of concern.
- E. Strategically align standard-based curriculum with effective instructional practices.
- F. Identify and implement instructional adaptations based on evidence-based practices (demonstrated to be effective with students with disabilities) to provide curriculum content using a variety of methods without compromising curriculum intent.
- G. Analyze performance of all learners and make appropriate modifications.

- H. Design and implement programs that reflect knowledge, awareness, and responsiveness to diverse needs of students with disabilities.
- I. Use research supported methods for academic and non-academic instruction for students with disabilities.
- J. Develop and implement universally designed instruction.
- K. Demonstrate an understanding of the range and the appropriate use of assistive technology (i.e., no tech, low tech, high tech).
- L. Demonstrate efficient differentiated instruction and an understanding of efficient planning, coordination, and delivery for effective instruction required for inclusive settings.

## **MEETING THE INSTRUCTIONAL NEEDS OF ENGLISH LANGUAGE LEARNERS (ELL) (3 CREDITS OR 90 HOURS)**

The following outline includes the competencies for the 3 credits or 90 course hours addressing the academic needs and adaptations for ELL students.

### **I. Foundations for Preservice Candidates**

Candidates will be able to:

#### **A. Language**

1. Demonstrate knowledge of language systems, structures, functions, and variation.
2. Identify the process of acquiring multiple languages and literacy skills, including the general stages of language development.
3. Identify the differences between academic language and social language.

#### **B. Culture**

1. Identify sociocultural characteristics of ELLs, including educational background and demographics.
2. Describe how ELLs' cultural communication styles and learning styles affect the learning process.
3. Describe how ELLs' cultural values affect their academic achievement and language development.
4. Identify bias in instruction, materials, and assessments.
5. Demonstrate cross-cultural competence in interactions with colleagues, administrators, school and community specialists, and students and their families.
6. Observe culturally and/or linguistically diverse instructional settings.

### **II. Applications for Pre-service Candidates**

Candidates will be able to:

#### **A. Standards-based Instruction**

1. Apply research, concepts, and theories of language acquisition to instruction.
2. Implement appropriate research-based instructional strategies to make content comprehensible for all ELLs.
3. Demonstrate effective instructional planning and assessment integrating the [PA Language Proficiency Standards for English Language Learners PreK-12](#) (ELPS) and PA academic standards.

#### **B. Assessment specific to ELL**

1. Use PA ELPS to design content assessment.

2. Identify issues related to standards-based formative and summative assessment for *all* ELLs.
3. Use assessment data to differentiate and modify instruction for optimal student learning.

**C. Professionalism**

1. Describe the legal responsibilities related to serving ELLs.
2. Demonstrate collaborative, co-teaching models for serving ELLs.
3. Define common terms associated with ELLs.
4. Identify professional resources and organizations related to serving ELLs.