



# Subject Matter Knowledge (SMK) Guidelines

(Draft for Public Comment)

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## Purpose

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Students in Massachusetts must meet rigorous [academic standards](#). To do so, they must have access to educators who have demonstrated strong content knowledge and pedagogical skill, as well as the ability to leverage content knowledge and pedagogical skill into effective instructional practice. In support of promoting strong content knowledge and pedagogical skill, these Subject Matter Knowledge (SMK) Guidelines set forth the content knowledge expectations for educator licensure in Massachusetts.<sup>1</sup>

By outlining SMK requirements for educators, these Guidelines serve two primary purposes:

1. Sponsoring Organizations<sup>2</sup> (SO) use the SMKs in designing the educator preparation programs and in preparing candidates.
2. The Massachusetts Department of Elementary and Secondary Education (ESE) uses the SMKs in decisions about educator licensure and program approval, including authorizing an SO to operate, review individual licensure applications and relicensure, and develop the Massachusetts Tests for Educator Licensure (MTELs). Through these mechanisms, ESE also seeks to ensure that educators entering the workforce have sufficient content knowledge in their licensure area to support students in mastering relevant *Massachusetts Curriculum Frameworks*.

With the goal of focusing all efforts first on the needs of our students in Massachusetts, the SMK requirements outlined here are directly aligned with the set of pre-K—12 *Massachusetts Curriculum Frameworks* appropriate for the subject and grade level license, wherever possible.

## Context

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### *Change in Approach*

With the release of the 2018 SMK Guidelines, ESE is making a shift in the way the state has historically approached the articulation of content expectations for educators. Most notably, for licensure areas in which *Massachusetts Curriculum Frameworks* exist, ESE directly references a corresponding *Framework* to establish what educators need to demonstrate in content knowledge, rather than provide a separate set of expectations. Thus, the *Frameworks* for students anchor the expectations of content knowledge for educators.

This approach is advantageous for several reasons:

1. Alignment of Expectations: The approach more tightly aligns expectations for pre-service educators with those in place for educators once they are employed. By grounding preparation and licensure expectations in the *Massachusetts Curriculum Frameworks*, educators will be more explicitly prepared to enact those standards effectively with students. Furthermore, this

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<sup>1</sup> See [CMR 7.04 \(3\) \(a\), \(b\), \(c\) 5. and \(d\) 1. and 4](#)

<sup>2</sup> Sponsoring Organizations are institutions of higher education or alternative preparation organizations that provide approved preparation programs

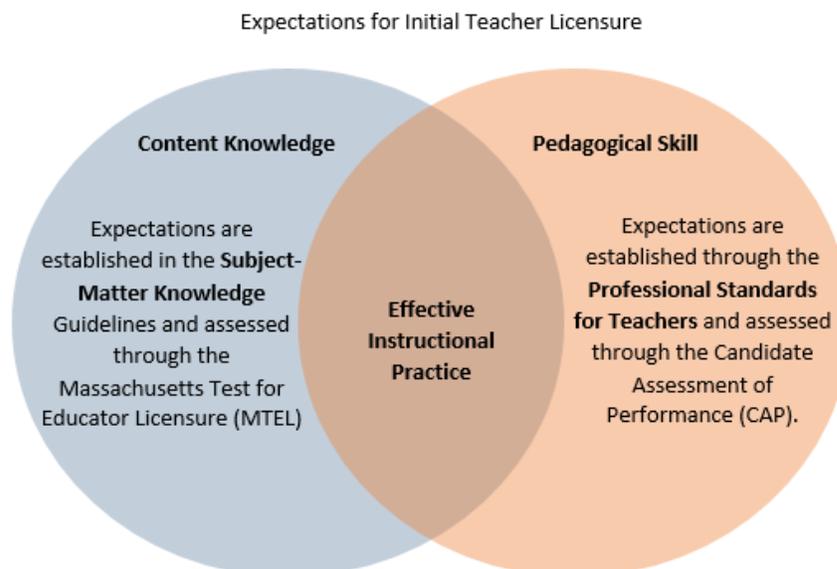
approach streamlines implementation timelines around the adoption of new *Frameworks*, such that programs can immediately begin to align coursework with newly adopted *Frameworks*. Additionally, this alignment will open up a larger set of resources and opportunities to preparation programs and their candidates given the work already in place to well-support pre-K—12 standards implementation.

2. **Structured Flexibility for SOs:** The approach creates flexibility and autonomy for preparation providers in designing a set of coherent experiences for novice educators rooted in the needs of Massachusetts’ pre-K—12 students. It also empowers SOs to make decisions based on professional expertise and the needs of the candidates with whom they are working. This aligns with an overall effort to be *descriptive* of expectations without being *prescriptive* of approach. Finally, it will provide additional incentives and opportunities to align what candidates must know (content) alongside how to teach (pedagogy).

This approach means that SOs will need to operate differently moving forward. As before, SOs will continue to be responsible for ensuring that candidates have the necessary content knowledge to be effective in the licensure role. Now, however, SOs will need to engage in a more intentional discussion and planning effort within each program to unpack the *Massachusetts Curriculum Frameworks* and identify the necessary depth and breadth of content knowledge candidates will need in order to support all students in mastering expectations outlined in the *Massachusetts Curriculum Frameworks*. This is the responsibility of all SOs, both at the baccalaureate and post-baccalaureate levels.

### *Content Knowledge as One Piece of Effective Practice*

An educator’s content knowledge forms the foundation of high-quality instructional practice. We recognize that educators need preparation, support, and ongoing development to use subject-area expertise in a way that advances student learning. Therefore, it is important to note that these SMK Guidelines outline the content knowledge expectations for educators, just one component of the full set of knowledge and skills necessary to be effective with all students. The intersection of these content expectations with the standards for the pedagogical skills should be the primary focus of preparation and professional development for educators.



Since early 2014, ESE has worked to update the pre-service licensure regulations for clearer alignment to professional expectations during employment. With these SMK Guidelines now in place, ESE intends to look for additional ways to emphasize the application of both sets of standards together; therefore, heightening focus on the content-specific pedagogical knowledge and skill needed for effective instructional practice.

## Orientation to Overall Approach

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Given the shift in the approach outlined above, there are important notes pertaining to the structure and organization of the Guidelines that follow. How we designed this document:

1. **Direct reference to a specific *Massachusetts Curriculum Framework*.** Throughout these Guidelines, ESE refers to one or more sets of *Massachusetts Curriculum Frameworks*. In doing so, it is ESE's expectation that SOs study and use the entirety of the Framework, not just the standards, in programmatic and assessment development decisions. This includes, for instance, introduction sections about sequencing and guiding principles, as well as the recommended resources and appendices. All [Massachusetts Curriculum Frameworks](#) are available online. For all licenses with no specific set of *Massachusetts Curriculum Frameworks* to reference, these Guidelines issue a set of content requirements.
2. **Implementation of Legacy SMK requirements.** Given that some *Frameworks* have not been updated recently or are currently slated for revision, SMK requirements in these areas will remain unchanged from previous iterations of these Guidelines until new *Frameworks* are adopted. Once adopted, educators must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the associated *Massachusetts Curriculum Frameworks*. Implementation of these legacy SMK requirements applies to all *Frameworks* released prior to 2016.
3. **Expectations for content knowledge at least two grade spans above and below the license level.** In support of a strong vertical progression of learning, educators should have the knowledge to support students in mastering prerequisite and advanced standards. This expectation also allows teachers to meet students where they are and prepare them for where they are going. Programs should prioritize deep knowledge and mastery of the content in the grade spans for the license, while ensuring knowledge of the needed content in the two grade levels below and above the grade spans for the license.
4. **Crosscutting SMK requirements.** There is a set of core knowledge that educators across multiple license areas must know in order to effectively support student learning. These are outlined at the beginning of the requirement section for each type of license, where applicable.
5. **Organized by relationship to a given *Massachusetts Curriculum Framework*, rather than alphabetically.** Rather than listing the SMK requirements for each license type alphabetically (e.g., Biology, Business) we have grouped the licenses so that those connected to similar *Frameworks* are together. So, for instance, you will now see all of the license areas that correspond to the STE Framework (Biology, Physics, Chemistry, etc.) listed together.

## Subject Matter Knowledge (SMK) Requirements

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### *Teacher Licenses and Levels, 603 CMR 7.06*

#### **Crosscutting SMKs**

There are a few subject-matter expectations that apply to multiple initial teacher subject and grade span license areas; they are as follows:

For all pre-K—12 educators licensed at the initial teacher level, it is expected that they have the knowledge needed to:

- a. Support the integration of standards for literacy across the content areas as outlined in the [2017 ELA/Literacy Framework](#).
- b. Apply basic principles and concepts for digital literacy and computer science in Computing and Society, Digital Tools and Collaboration, Computing Systems, and Computational Thinking as outlined in the [2016 Digital Literacy Computer Science Framework](#).
- c. Navigate the theories of cognitive, social, emotional, language, and physical development from childhood through adolescence.
- d. Understand the characteristics and instructional implications of moderately and severely disabling conditions.
- e. Apply special education policies and procedures.
- f. Support English learners through English learner education instruction.

For all pre-K—12 educators licensed in Early Childhood, pre-K—2; Elementary, 1-6; Moderate Disabilities, pre-K—8 & 5-12; Teachers of Deaf and Hard of Hearing Oral/Aural; and Teachers of Visually Impaired, it is expected that they demonstrate the knowledge needed to support students in mastering the foundations of reading, including:

- a. Knowledge of the significant theories, approaches, practices, and programs for developing reading skills and reading comprehension:
  - i. Current research-based theories and practices for developing proficient and strategic readers; familiarity with programs and approaches for teaching literacy/reading.
  - ii. Principles and research-based instructional practices for developing proficient readers (phonics and word recognition, vocabulary, reading fluency, comprehension, and the reading-writing connection).
  - iii. Theories, research, and instructional practices for supporting readers with diverse cultural and linguistic backgrounds, strengths, and challenges.
  - iv. Knowledge of reading standards as outlined in the *2017 ELA/Literacy Curriculum Framework*: reading for key ideas and details, craft and structure, integration of knowledge and ideas, and range of reading and text complexity.
  - v. Instructional practices for supporting comprehension in a variety of genres and content areas.
  - vi. Knowledge of selection criteria for classroom literary and informational texts.
- b. Principles and research-based instructional practices for developing emergent reader skills (alphabetic principle, concepts of print, phonological and phonemic awareness).

- c. Phonemic awareness and phonics; principles, knowledge, and instructional practices.
- d. Use of assessment for instruction and intervention.
- e. Knowledge of a variety of formal and informal reading assessment tools.
- f. Use of data from screening, diagnostic, and formative assessments to identify individual strengths and weaknesses and differentiate instruction (prepare mini-lessons, select appropriate materials, form flexible groups).
- g. Knowledge of Response to Intervention models/components, including tiered instruction, shared responsibility and decision-making, research-based interventions, and progress monitoring.
  - i. Diagnosis and assessment of reading skills using standardized, criterion-referenced, and informal assessment instruments.

### ***Science, Technology, and Engineering***

#### **Biology, 8-12**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2016 Science and Technology/Engineering (STE) Curriculum Framework*:
  - i. Grades 6-8 Life Science
  - ii. High School Biology

#### **Chemistry, 8-12**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2016 Science and Technology/Engineering (STE) Curriculum Framework*:
  - i. Grades 6-8 Physical Science
  - ii. High School Chemistry

#### **Earth and Space Science, 8-12**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2016 Science and Technology/Engineering (STE) Curriculum Framework*:
  - i. Grades 6-8 Earth and Space Science
  - ii. High School Earth and Space Science

#### **General Science**

**1-6 Level:** Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2016 Science and Technology/Engineering (STE) Curriculum Framework*:
  - i. Pre-K—8

**5-8 Level:** Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2016 Science and Technology/Engineering (STE) Curriculum Framework*:
  - i. Pre-K—8
  - ii. High School Earth and Space Science, Physics, Biology and Chemistry

#### **Physics, 8-12**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2016 Science and Technology/Engineering (STE) Curriculum Framework*:
  - i. Grades 6-8 Physical Science
  - ii. High School Introductory Physics

#### **Technology/Engineering, 5-12**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2016 Science and Technology/Engineering (STE) Curriculum Framework*:
  - i. Grades 3-8 Technology/Engineering

- ii. High School Technology/Engineering

**Mathematics**

**Mathematics**

**1-6 Level:** Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2017 Mathematics Curriculum Framework*:
  - i. Pre-K—8

**5-8 Level:** Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2017 Mathematics Curriculum Framework*:
  - i. Grades 3-8
  - ii. Model Algebra I Content Standards
  - iii. Model Geometry Content Standards
  - iv. Model Mathematics I Content Standards
  - v. Model Mathematics II Content Standards

**8-12 Level:** Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2017 Mathematics Curriculum Framework*:
  - i. Grade 6-High School

**Mathematics/Science**

**Middle School: Mathematics/Science, 5-8**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Frameworks*:

- a. *2016 Massachusetts Science and Technology/Engineering (STE) Curriculum Framework*:
  - i. Grades 3-8
  - ii. High School Earth and Space Science, Biology, Chemistry and Physics
- b. *2017 Mathematics Curriculum Framework*:
  - i. Grades 3-8
  - ii. Model Algebra I Content Standards
  - iii. Model Geometry Content Standards
  - iv. Model Mathematics I Content Standards
  - v. Model Mathematics II Content Standards

**Digital Literacy and Computer Science**

**Digital Literacy and Computer Science (DLCS), 5-12**

One of the following:

Upon development of a Massachusetts Test for Educator Licensure (MTEL) (in 2020) and for the purpose of program development:	Until the new Massachusetts Test for Educator Licensure is developed (in 2020), the following legacy SMK requirements remain in place for the Competency Review:
Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support	<ul style="list-style-type: none"> <li>i. Computing and Society                             <ul style="list-style-type: none"> <li>a. Understand safety and security concepts, security and recovery strategies, and how to</li> </ul> </li> </ul>

<p>all students in mastering expectations outlined in the following  <i>Massachusetts Curriculum Framework:</i></p> <ul style="list-style-type: none"> <li>i. <i>2016 Digital Literacy and Computer Science (DLCS) Framework:</i> <ul style="list-style-type: none"> <li>a. Kindergarten-Grade 12</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>deal with cyberbullying and peer pressure in a social computing setting. (Standards: 6-8.CAS.a and 9-12.CAS.a)</li> <li>b. Understand, analyze impact and intent of, and apply technology laws, license agreements and permissions. (Standards: 6-8.CAS.b and 9-12.CAS.b)</li> <li>c. Recognize, analyze, and evaluate the impact of technology, assistive technology, technology proficiencies, and cybercrime in people's lives, commerce, and society. (Standards: 6-8.CAS.c and 9-12.CAS.c)</li> </ul> <p>ii. Digital Tools &amp; Collaboration and Computing Systems</p> <ul style="list-style-type: none"> <li>a. Selection and use of digital tools or resources and computing devices to create an artifact, solve a problem, communicate, publish online or accomplish a real-world task. (Standards: 6-8.DTC.a, 9-12.DTC.a, 6-8.DTC.b, 9-12.DTC.b, 6-8.CS.a and 9-12.CS.a)</li> <li>b. Use of advance research skills including advanced searches, digital source evaluation, synthesis of information and appropriate digital citation. (Standards: 6-8.DTC.c and 9-12.DTC.c)</li> <li>c. Understand how computing device components work. Use of troubleshooting strategies to solve routine hardware and software problems. (Standards: 6-8.CS.a, 9-12.CS.a, 6-8.CS.b, and 9-12.CS.b)</li> <li>d. Understand how networks communicate, their vulnerabilities and issues that may impact their functionality. Evaluate the benefits of using a service with respect to function and quality. (Standards: 6-8.CS.c, 9-12.CS.c, 6-8.CS.d, and 9-12.CS.d)</li> </ul> <p>iii. Computational Thinking</p> <ul style="list-style-type: none"> <li>a. Creation of new representations, through generalization and decomposition. Write and debug algorithms in a structured language. (Standards: 6-8.CT.a, 9-12.CT.a, 6-8.CT.b, and 9-12.CT.b)</li> <li>b. Understand how different data representation affects storage and quality. Create, modify, and manipulate data structures, data sets, and data visualizations. (Standards: 6-8.CT.c and 9-12.CT.c)</li> </ul>
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	<ul style="list-style-type: none"> <li>c. Decompose tasks/problems into sub-problems to plan solutions. (Standards: 6-8.CT.d and 9-12.CT.d)</li> <li>d. Creation of programs using an iterative design process to create an artifact or solve a problem. (Standards: 6-8.CT.d and 9-12.CT.d)</li> <li>e. Creation of models and simulations to formulate, test, analyze, and refine a hypothesis. (Standards: 6-8.CT.e and 9-12.CT.e)</li> </ul>
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**English Language Arts and Literacy**

**English, 5-12**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2017 English Language Arts(ELA)/Literacy Framework*:
  - i. Grades 3-12

**Speech, All**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Framework*:

- a. *2017 English Language Arts (ELA)/Literacy Framework*:
  - i. Speaking and Listening Strand, pre-K—12

**English Language Arts and Literacy and History**

**Middle School: Humanities, 5-8**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Frameworks*:

- a. *2017 English Language Arts (ELA)/Literacy Framework*:
  - ii. Grades 3-10
- b. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ul style="list-style-type: none"> <li>i. <i>History and Social Science Framework</i>:                     <ul style="list-style-type: none"> <li>a. Grades 3-10</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. United States History: indigenous people of North America; European settlements and colonies; the American Revolution; expansion, reform, and economic growth of the United States up to the Civil War; the Civil War and Reconstruction; European immigration, industrialization, and scientific and technological progress; the two World Wars; and the United States from 1945 to the present.</li> <li>ii. World History: human beginnings and early civilizations (Africa, Mesopotamia, Phoenicia, Egypt, India, China); roots of Western Civilization (Israel, Greece, Rome); English and Western European history; Renaissance and the age of exploration; age of revolutionary change in Europe; development of</li> </ul>

	<p>Asia, Africa, and South America; the world in the era of two World Wars; and the world from 1945 to the present.</p> <p>iii. Geography.</p> <p>a. Major physical features of the world.</p> <p>b. Key concepts of geography and its effects on various peoples.</p> <p>iv. Economics.</p> <p>a. Fundamental economic concepts and economic reasoning.</p> <p>b. American economic history.</p> <p>v. Government: Principles of American government and the founding documents of the United States.</p> <p>vi. Methods and Sources for Research in History.</p>
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**History and Social Science**

**History**

**Level 1-6**

- a. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<p>i. <i>History and Social Science Framework</i>:</p> <p>a. Pre-K—8</p>	<p>i. United States history from the age of exploration to the Civil War.</p> <p>ii. World history from human beginnings and ancient and classical civilizations of the Mediterranean area; and English and Western European history through the Enlightenment.</p> <p>iii. Geography: major physical features of the world and key concepts of geography.</p> <p>iv. Basic economic principles and concepts.</p> <p>v. United States political principles, institutions, and processes, their history and development.</p> <p>vi. Major developments and figures in Massachusetts history.</p>

**Level 5-12**

- a. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<p>i. <i>History and Social Science Framework</i>:</p> <p>a. Grades 3-12</p>	<p>i. United States History: indigenous people of North America; European settlements and colonies; the American Revolution; expansion, reform, and economic growth of the United States up to the Civil War; the Civil War and Reconstruction; European immigration, industrialization, and scientific and technological progress; the two World</p>

	<p>Wars; and the United States from 1945 to the present.</p> <p>ii. World History: human beginnings and early civilizations (Africa, Mesopotamia, Phoenicia, Egypt, India, China); roots of Western civilization (Israel, Greece, Rome); English and Western European history; Renaissance and the age of exploration; development of Asia, Africa, and South America; age of revolutionary change in Europe; the world in the era of two World Wars; and the world from 1945 to the present.</p> <p>iii. Geography.</p> <p>a. Major physical features of the world.</p> <p>b. Key concepts of geography and its effects on various peoples.</p> <p>iv. Economics.</p> <p>a. Fundamental economic concepts and economic reasoning.</p> <p>b. American economic history.</p> <p>v. Government.</p> <p>a. Principles of American government and the Founding Documents of the United States.</p> <p>b. Comparative government.</p> <p>vi. History and Philosophy of Science.</p> <p>vii. Methods and Sources for Research in History.</p>
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**Social Science 5-12**

a. One of the following:

<p>Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i>, post-2016</p>	<p>Until adoption of corresponding <i>Massachusetts Curriculum Framework</i>, the following legacy SMK requirements remain in place:</p>
<p>i. <i>History and Social Science Framework</i>:</p> <p>b. Grades 3-12</p>	<p>i. Major developments and figures in Massachusetts and U.S. history from colonial times to the present.</p> <p>ii. Major developments and figures in world history, with emphasis on Western civilization.</p> <p>iii. Basic economic principles and concepts.</p> <p>iv. Basic geographical principles and concepts.</p> <p>v. U.S. political principles, ideals, founding documents, institutions, and processes, their history and development.</p>

**Early Childhood**

**Early Childhood, Pre-K—2**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Frameworks*:

- a. *2017 English Language Arts(ELA)/Literacy Framework*
  - i. Pre-K—4
- b. *2017 Mathematics Curriculum Framework*

- i. Pre-K—4
- c. *2016 Science and Technology/Engineering (STE) Curriculum Framework*
  - i. Pre-K—4
- d. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
i. <i>History and Social Science Framework</i> : <ul style="list-style-type: none"> <li>a. Pre-K—4</li> </ul>	<ul style="list-style-type: none"> <li>i. An understanding of how children acquire conceptual understanding and knowledge of fundamental ideas of history/social science.</li> <li>ii. Knowledge and understanding of the curricular continuum disciplinary core ideas related to history and geography, civics and government, and economics.</li> </ul>

**Elementary**

**Elementary, 1-6**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Frameworks*:

- a. *2017 English Language Arts (ELA)/Literacy Framework*:
  - i. Pre-K—8
- b. *2017 Mathematics Curriculum Framework*:
  - i. Pre-K—8
- c. *2016 Science and Technology/Engineering (STE) Curriculum Framework*:
  - i. Pre-K—8
- d. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
i. <i>History and Social Science Framework</i> : <ul style="list-style-type: none"> <li>a. Pre-K—8</li> </ul>	<ul style="list-style-type: none"> <li>i. Major developments and figures in Massachusetts and U.S. history from colonial times to the present.</li> <li>ii. Major developments and figures in world history, with stress on Western civilization.</li> <li>iii. Basic economic principles and concepts.</li> <li>iv. Basic geographical principles and concepts.</li> <li>v. U.S. political principles, ideals, founding documents, institutions, processes, and their history and development.</li> </ul>

**Moderate and Severe Disabilities**

**Teacher of Students with Moderate Disabilities**

**Level Pre-K—8:**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Frameworks*:

- a. *2017 English Language Arts (ELA)/Literacy Framework*:
  - i. Pre-K—8
- b. *2017 Mathematics Curriculum Framework*:

- i. Pre-K—8
- c. *2016 Science and Technology/Engineering (STE) Curriculum Framework:*
  - i. Pre-K—8
- d. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ul style="list-style-type: none"> <li>i. <i>History and Social Science Framework:</i> <ul style="list-style-type: none"> <li>a. Pre-K—8</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Major developments and figures in Massachusetts and U.S. history from colonial times to the present.</li> <li>ii. Major developments and figures in world history, with stress on Western civilization.</li> <li>iii. Basic economic principles and concepts.</li> <li>iv. Basic geographical principles and concepts.</li> <li>v. U.S. political principles, ideals, founding documents, institutions, processes, and their history and development.</li> </ul>

In addition to the content outlined above that aligns with the *Massachusetts Curriculum Frameworks*, teachers of Students with Moderate Disabilities should demonstrate the following knowledge and skills:

- e. Educational terminology for students with mild to moderate disabilities.
- f. Preparation, implementation, and evaluation of Individualized Education Programs (IEPs).
- g. Design or modification of curriculum, instructional materials, and general education classroom environments for students with moderate disabilities.
- h. Instruction on the appropriate use of augmentative and alternative communication and other assistive technologies.
- i. Ways to prepare and maintain students with disabilities for general education classrooms; for example, use of behavioral management principles.
- j. Knowledge of services provided by other agencies.
- k. Federal and state laws and regulations pertaining to special education.

**Level 5-12:**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Frameworks*:

- a. *2017 English Language Arts (ELA)/Literacy Framework:*
  - i. Grades 3-12
- b. *2017 Mathematics Curriculum Framework:*
  - i. Grades 3-12
- c. *2016 Science and Technology/Engineering (STE) Curriculum Framework:*
  - i. Grades 3-12
- d. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ul style="list-style-type: none"> <li>i. <i>History and Social Science Framework:</i> <ul style="list-style-type: none"> <li>a. Grades 3-12</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Major developments and figures in Massachusetts and U.S. history from colonial times to the present.</li> <li>ii. Major developments and figures in world history, with stress on Western civilization.</li> <li>iii. Basic economic principles and concepts.</li> <li>iv. Basic geographical principles and concepts.</li> </ul>

	v. U.S. political principles, ideals, founding documents, institutions, processes, and their history and development.
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In addition to the content outlined above that aligns with the *Massachusetts Curriculum Frameworks*, teachers of Students with Moderate Disabilities should demonstrate the following knowledge and skills:

- e. Educational terminology for students with mild to moderate disabilities.
- f. Preparation, implementation, and evaluation of Individualized Education Programs (IEPs).
- g. Design or modification of curriculum, instructional materials, and general education classroom environments for students with moderate disabilities.
- h. Instruction on the appropriate use of augmentative and alternative communication and other assistive technologies.
- i. Ways to prepare and maintain students with disabilities for general education classrooms; for example, use of behavioral management principles.
- j. Knowledge of services provided by other agencies.
- k. Federal and state laws and regulations pertaining to special education.

**Teacher of Students with Severe Disabilities, All**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Frameworks*:

- a. *2017 English Language Arts (ELA)/Framework*:
  - i. Pre-K—8
- b. *2017 Mathematics Curriculum Framework*:
  - i. Pre-K—8
- c. *2016 Science and Technology/Engineering (STE) Curriculum Framework*:
  - i. Pre-K—8
- d. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ul style="list-style-type: none"> <li>i. <i>History and Social Science Framework</i>:                             <ul style="list-style-type: none"> <li>a. Pre-K—8</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Major developments and figures in Massachusetts and U.S. history from colonial times to the present.</li> <li>ii. Major developments and figures in world history, with stress on Western civilization.</li> <li>iii. Basic economic principles and concepts.</li> <li>iv. Basic geographical principles and concepts.</li> <li>v. U.S. political principles, ideals, founding documents, institutions, processes, and their history and development.</li> </ul>

In addition to the content outlined above that aligns with the *Massachusetts Curriculum Frameworks*, teachers of Students with Severe Disabilities should demonstrate the following knowledge and skills:

- e. Definitions, etiologies, and characteristics of severely disabling conditions.
- f. Theories, concepts, and methods of assessing physical, emotional, intellectual, and social development in children and adolescents.
- g. Theories of language development and the effects of disabilities on learning.
- h. Reading
  - i. Reading theory, research, and practice.
  - ii. Knowledge of the significant theories, practices, and programs for developing reading skills and reading comprehension.

- iii. Phonemic awareness and phonics: principles, knowledge, and instructional practices.
- iv. Diagnosis and assessment of reading skills using standardized, criterion-referenced, and informal assessment instruments.
- v. Development of a listening, speaking, and reading vocabulary.
- vi. Theories on the relationships between beginning writing and reading.
- vii. Theories of first and second language acquisition and development.
- i. Preparation, implementation, and evaluation of Individualized Education Programs (IEPs).
- j. How to design or modify curriculum, instructional materials, and classroom environments for students with severe disabilities.
- k. Ways to prepare and maintain students with severe disabilities for general education classrooms; for example, use of behavioral management principles.
- l. Knowledge of services provided by other agencies.
- m. Knowledge of appropriate vocational or alternative school programs, or work-study and community-based opportunities and alternative high school programs and how to refer students to them.
- n. Federal and state laws pertaining to special education.
- o. Techniques for developing skills designed to facilitate placement in least-restrictive environments.
- p. Instruction on the appropriate use of augmentative and alternative communication and other assistive technologies.
- q. Source and operation of orthotic devices, medical technologies, and computer-moderated prosthetic devices.

**Arts**

**Dance, All**

- a. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ul style="list-style-type: none"> <li>i. <i>Arts Framework</i>:                             <ul style="list-style-type: none"> <li>a. Pre-K—Dance</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Dance technique, including skills and kinesthetic concepts of ballet, modern, jazz, tap, social, and folk dance.</li> <li>ii. Choreography, including elements and principles of design, rhythm, dynamics, form, improvisation, and composition.</li> <li>iii. Dance production, including costumes, lighting, sound, promotion, and management.</li> <li>iv. History of Western dance performance, including historical periods, major stylistic traditions, and major artists.</li> <li>v. Introductory knowledge of dance traditions across the world.</li> <li>vi. Children's dance, movement exploration, and improvisation.</li> <li>vii. Artistic development of children and adolescents in dance.</li> <li>viii. Dance criticism: analysis and critique of dance works and performance.</li> </ul>

**Music: Vocal/Instrumental/General, All**

a. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<p>i. <i>Arts Framework</i>:</p> <p>a. Pre-K—Music</p>	<p>i. Traditional Western music theory and harmony.</p> <p>ii. Score reading and musical analysis.</p> <p>iii. Music history and literature, including the following:</p> <p>a. Western (European) - early Gregorian chant to present.</p> <p>b. American music - 1650 to present (including ethnic folk, jazz, Broadway, and classic streams).</p> <p>c. Introductory knowledge of at least two other musical traditions with contrasting compositional and performance characteristics and genres.</p> <p>iv. Music criticism: analysis and critique of musical works and performance.</p> <p>v. Knowledge of at least one special approach to music education for students, such as Orff Schulwerk, Kodály, Dalcroze, Suzuki, Gordon.</p> <p>vi. Musical development in children and adolescents.</p> <p>vii. Introductory knowledge of choral literature and conducting techniques.</p> <p>viii. Introductory knowledge of instrumental literature and conducting techniques.</p> <p>ix. Singing skills and basic vocal production.</p> <p>x. Sight singing and music reading, using standard notation.</p> <p>xi. Intermediate level of keyboard proficiency.</p> <p>xii. Use of technologies in music.</p> <p>xiii. Advanced vocal proficiency.</p> <p>xiv. Choral methods for treble, changing, and high school voices.</p> <p>xv. Advanced instrumental proficiency on one instrument.</p> <p>xvi. Instrumental methods on strings, woodwinds, brass, percussion.</p>

**Theater, All**

a. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<p>i. <i>Arts Framework</i>:</p> <p>a. Pre-K—12 Theater</p>	<p>i. Principles of acting, including improvisation methods, styles, and techniques for developing voice, movement and characterization.</p>

	<ul style="list-style-type: none"> <li>ii. Principles of dramatic structure and processes of playwriting, playmaking, and adaptation of literary works for the theater.</li> <li>iii. Fundamentals of directing, including selection of material, script analysis, and techniques and procedures for rehearsing and staging theatrical works.</li> <li>iv. Basics of stage and theater management.</li> <li>v. Knowledge of theater production, including principles of design and basic tools and techniques of technical theater.</li> <li>vi. American dramatic literature in the 20th century.</li> <li>vii. British, European, and classical Greek dramatic literature: historical periods, major stylistic traditions, major works and writers.</li> <li>viii. History of drama.</li> <li>ix. Introductory knowledge of other world drama in its cultural and historical contexts.</li> <li>x. Theater criticism: analysis and critique of works of theater and dramatic literature.</li> <li>xi. Knowledge of theater for young audiences and dramatic literature for children.</li> <li>xii. Appropriate practices in drama and theater education for children.</li> <li>xiii. Artistic development of children and adolescents in the theater arts.</li> </ul>
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**Visual Art, Pre-K—8 and 5-12**

a. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ul style="list-style-type: none"> <li>i. <i>Arts Framework</i>:             <ul style="list-style-type: none"> <li>a. Pre-K—12 Visual Art</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Elements of art and the principles of design.</li> <li>ii. Methods, materials, and techniques unique to the visual arts in: drawing, painting, sculpture, printmaking, collage, crafts, photography, film, and electronic technologies.</li> <li>iii. Observation, abstraction, invention, and representation in visual art.</li> <li>iv. Theories of artistic creativity and aesthetics; philosophies of prominent artists and art educators.</li> <li>v. Art criticism: concepts of style and stylistic change.</li> <li>vi. Artistic development in children and adolescents.</li> <li>vii. Major developments, periods, and artists in Western traditions in art and architecture.</li> </ul>

	<ul style="list-style-type: none"> <li>viii. Major developments, periods, and artists in American art and architecture from <i>circa</i> 1650 to the present.</li> <li>ix. Characteristics of art and architecture in two non-Western artistic traditions stylistically different from each other.</li> <li>x. Influences of non-Western artistic traditions on Western art; influences of Western art on non-Western artistic traditions.</li> </ul>
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**Foreign and Classical Language**

**Foreign Language**

**Level Pre-K—6:**

a. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ul style="list-style-type: none"> <li>i. <i>Foreign Languages Framework:</i> <ul style="list-style-type: none"> <li>a. Pre-K—8</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Spoken and written command of a standard version of the target language (the version used by a formally educated speaker of the language).</li> <li>ii. Knowledge of culturally and historically significant literary and non-literary texts and authors associated with the country of origin of the target language and of one other country with which the target language may now be associated.</li> <li>iii. Introductory knowledge of contemporary political, social, and artistic features of the country of origin of the target language and of one other country with which the target language may now be associated.</li> <li>iv. Children's literature, songs, and games in the target language.</li> <li>v. Characteristics of elementary reading and writing pedagogy in the target language.</li> <li>vi. Similarities and differences between the target language and English.</li> <li>vii. Theories of, and differences between, first and second language acquisition.</li> </ul>

**Levels 5-12:**

a. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ul style="list-style-type: none"> <li>i. <i>Foreign Languages Framework:</i> <ul style="list-style-type: none"> <li>a. Grades 3-12</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Spoken and written command of a standard version of the target language (the version used by a formally educated speaker of the language).</li> </ul>

	<ul style="list-style-type: none"> <li>ii. Similarities and differences between the target language and English.</li> <li>iii. Theories of, and differences between, first and second language acquisition.</li> <li>iv. Knowledge of culturally and historically significant literary and non-literary texts and authors associated with the country of origin of the target language, literary traditions, periods, and genres.</li> <li>v. Introductory knowledge of the other arts (historical traditions, genres, and major artists) associated with the country of origin of the target language.</li> <li>vi. Introductory knowledge of the political, social and intellectual history of the country or culture with which the target language is or was originally associated.</li> <li>vii. Introductory knowledge of significant literary and non-literary texts, the arts, and history of at least one other country or people with which the target language may now be associated.</li> </ul>
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**Latin and Classical Humanities, 5-12**

a. One of the following:

<p>Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i>, post-2016</p>	<p>Until adoption of corresponding <i>Massachusetts Curriculum Framework</i>, the following legacy SMK requirements remain in place:</p>
<ul style="list-style-type: none"> <li>i. <i>Foreign Languages Framework</i>:             <ul style="list-style-type: none"> <li>a. Grades 3-12</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Selections commonly read in secondary schools from the works of Cicero, Caesar, Catullus, Vergil, Horace, Ovid, and Pliny the Younger in the original Latin.</li> <li>ii. How English words are derived and formed from Greek and Latin prefixes, bases, and suffixes, and the influence of Greek and Latin on the technical vocabulary of the arts, sciences, and professions (medical and legal).</li> <li>iii. Works of Greek literature in translation including Herodotus, Homer, Plato, Sappho, Thucydides, and the four major dramatists.</li> <li>iv. Culture and history of ancient Greece and Rome, with emphasis on those elements that contributed to the foundation of modern Western civilization, including:             <ul style="list-style-type: none"> <li>a. Major myths and legends.</li> <li>b. Significant characteristics of classical art, architecture, and technology.</li> <li>c. Major genres of literature.</li> <li>d. Political, social, and economic institutions</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>v. Linguistics and theories of classical language acquisition.</li> <li>vi. Methods of research and criticism as they apply to the study of Latin and classical humanities.</li> <li>vii. Basic reading knowledge of the Greek language as demonstrated by the ability to translate from the first book of Homer's Iliad or from Plato's Apology.</li> <li>viii. Knowledge of grammar and syntax of classical Latin</li> </ul>
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**Health and Physical Education**

**Health/Family and Consumer Sciences, All**

a. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ul style="list-style-type: none"> <li>i. <i>Comprehensive Health Framework</i>: <ul style="list-style-type: none"> <li>a. Pre-K—12</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Human growth and development: physical (anatomy and physiology), emotional/mental, social, intellectual, and moral.</li> <li>ii. Food science and nutrition.</li> <li>iii. Physical fitness.</li> <li>iv. Human sexuality.</li> <li>v. Disease prevention and control.</li> <li>vi. First aid, safety, and injury prevention.</li> <li>vii. Tobacco, alcohol, and other substance abuse prevention.</li> <li>viii. Current topics in health education, including family violence, child abuse, suicide, sexually transmitted diseases (including AIDS), teen pregnancy, violence prevention, and eating disorders</li> <li>ix. Parenting skills, early childhood education, and care.</li> <li>x. Family and interpersonal relationships.</li> <li>xi. Public health functions and responsibilities.</li> <li>xii. Management.</li> </ul>

**Physical Education, Pre-K—8; 5-12**

a. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ul style="list-style-type: none"> <li>i. <i>Comprehensive Health Framework</i>: <ul style="list-style-type: none"> <li>a. Pre-K—12</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Principles of developmentally sound physical health and fitness.</li> <li>ii. Lifespan growth, development, and nutrition.</li> <li>iii. History and foundations of kinesiology.</li> <li>iv. Range of appropriate play and sports for Pre-K—12 and the relevant motor skills.</li> </ul>

	<ul style="list-style-type: none"> <li>v. Knowledge of appropriate physical and safety limitations, legal standards, tort liability, and first aid and Cardiac Pulmonary Resuscitation (CPR).</li> <li>vi. Knowledge of adaptations for students with disabilities.</li> </ul>
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***Teacher of the Deaf and Hard of Hearing and Visually Impaired***

**Teacher of the Deaf and Hard-of-Hearing, All**

Teacher candidates must demonstrate their knowledge and mastery of the content and skills students need to be taught as outlined in the following standards in the *Massachusetts Curriculum Frameworks*:

- a. *2017 English Language Arts (ELA)/Literacy Framework*:
  - i. Pre-K—8
- b. *2017 Mathematics Curriculum Framework*:
  - i. Pre-K—8
- c. *2016 Science and Technology/Engineering(STE) Curriculum Framework*:
  - i. Pre-K—8
- d. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ul style="list-style-type: none"> <li>i. <i>History and Social Science Framework</i>:                             <ul style="list-style-type: none"> <li>a. Pre-K—8</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>i. Major developments and figures in Massachusetts and U.S. history from colonial times to the present.</li> <li>ii. Major developments and figures in world history, with stress on Western civilization.</li> <li>iii. Basic economic principles and concepts.</li> <li>iv. Basic geographical principles and concepts.</li> <li>v. U.S. political principles, ideals, founding documents, institutions, processes, and their history and development.</li> </ul>

For **Oral/Aural**: Additionally, teacher candidates must demonstrate their knowledge and mastery of the following:

- a. Hearing and Hearing Technology including:
  - i. The anatomy and physiology of ear and neural pathways, physics of sound and psychoacoustics including auditory perception, speech acoustics and impact of environmental acoustics on speech understanding and listening.
  - ii. Hearing measurement and etiology (both objective and subjective screening and test methods), test interpretation, hearing levels and the impact on listening and speech perception.
  - iii. Function and uses of available sensory devices and hearing assistive technology.
- b. Auditory Functioning including:
  - i. Typical auditory development, auditory development of children with hearing loss, auditory development using hearing technology, the auditory hierarchy, acoustic phonetics (sounds of speech and transmission/reception), appropriate electroacoustic and functional assessments, and factors that impact auditory development.
- c. Spoken Language Communication including:
  - i. Speech production: sequence of development (typical and atypical), anatomy and physiology of the speech/voice mechanism; and formal and informal speech production assessment measures.

For **American Sign Language (ASL)**: Additionally, teacher candidates must demonstrate their knowledge and mastery of the following:

- a. Knowledge of the perception, acquisition and processing of language (including both spoken and sign language).
- b. Knowledge of strategies for supporting language acquisition in sign language.
- c. Knowledge of theories in typical and atypical child development as it relates to children who are deaf or hard of hearing, including emotional, social and intellectual development.
- d. Knowledge of the design and modifications of curricular and instructional materials to ensure accessibility of the curriculum for deaf or hard of hearing students with and without special needs.
- e. Knowledge of strategies for promoting literacy among students who are deaf or hard of hearing.
- f. Knowledge of the clinical foundations of hearing.
- g. Knowledge of the relationship between ASL and English and strategies for translating between ASL and English.
- h. Knowledge of Deaf culture, Deaf history and the Deaf community.
- i. Knowledge of medical, social, and ethical issues related to educating students who are deaf or hard of hearing.
- j. Knowledge of Federal and State Special Education Laws, Individualized Education Programs (IEPs) and [Section 504 of the Rehabilitation Act of 1973 \(29 USC 794\)](#) plan development and implementation for students who are deaf or hard of hearing.
- k. Critical analysis and application of research relevant to educating students who are deaf or hard of hearing.

**Teacher of the Visually Impaired, All**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations outlined in the following *Massachusetts Curriculum Frameworks*:

- a. *2017 English Language Arts (ELA)/Literacy Framework*:
  - i. Pre-K—8
- b. *2017 Mathematics Curriculum Framework*:
  - i. Pre-K—8
- c. *2016 Science and Technology/Engineering (STE) Curriculum Framework*:
  - i. Pre-K—8
- d. One of the following:

Upon adoption of corresponding <i>Massachusetts Curriculum Framework</i> , post-2016	Until adoption of corresponding <i>Massachusetts Curriculum Framework</i> , the following legacy SMK requirements remain in place:
<ol style="list-style-type: none"> <li>i. <i>History and Social Science Framework</i>:                             <ol style="list-style-type: none"> <li>a. Pre-K—8</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>i. Major developments and figures in Massachusetts and U.S. history from colonial times to the present.</li> <li>ii. Major developments and figures in world history, with stress on Western civilization.</li> <li>iii. Basic economic principles and concepts.</li> <li>iv. Basic geographical principles and concepts.</li> <li>v. U.S. political principles, ideals, founding documents, institutions, processes, and their history and development.</li> </ol>

In addition to the content outlined above that aligns with the *Massachusetts Curriculum Frameworks*, teachers of the Visually Impaired should demonstrate the following knowledge and skills:

- e. Similarities and differences between visually impaired and non-visually impaired children in emotional, social, physical, and intellectual development.

- f. Anatomy and physiology of the eye and visual abnormalities.
- g. Historical and current developments in education of the visually impaired in the United States and other countries.
- h. How to use state-of-the-art diagnostic information.
- i. Medical and educational research related to the visually impaired.
- j. Use of English Braille (UEB) for non-technical materials and UEB and Nemeth Braille Code for Mathematics for technical materials.
- k. Use of assistive technology, such as low-vision devices.
- l. Design or modification of the curriculum and instructional materials for the visually impaired.
- m. Ways to prepare visually impaired students for classrooms ranging from general education classrooms to schools for the visually impaired.
- n. Features of family support and services.
- o. Preparation, implementation, and evaluation of Individualized Education Programs (IEPs).
- p. Knowledge of Federal and State Special Education Laws, IEPs, and 504 plan development and implementation for students who are visually impaired.
- q. Child development.
  - i. Basic theories of cognitive, social, emotional, language, and physical development from childhood through adolescence.
  - ii. Characteristics and instructional implications of moderately and severely disabling conditions.
- r. Principles and research-based instructional practices for developing emergent reader skills (alphabetic principle, concepts of print, phonological and phonemic awareness).
- s. Phonemic awareness and phonics; principles, knowledge, and instructional practices.
- t. Use of assessment for instruction and intervention.
- u. Knowledge of a variety of formal and informal reading assessment tools.
- v. Use of data from screening, diagnostic, and formative assessments to identify individual strengths and weaknesses and differentiate instruction (prepare mini-lessons, select appropriate materials, form flexible groups).
- w. Knowledge of Response to Intervention models/components, including tiered instruction, shared responsibility and decision-making, research-based interventions, and progress monitoring.
  - i. Diagnosis and assessment of reading skills using standardized, criterion-referenced, and informal assessment instruments.

## **Business**

### **Business, 5-12**

Teacher candidates must demonstrate their knowledge and mastery of the content and skills students need to be taught as outlined in the following:

- a. Business communications.
- b. Business management.
- c. Human resource management.
- d. State and federal business law.
- e. Business marketing.
- f. Accounting principles and procedures.
- g. Business technology and information systems.
- h. Macro- and microeconomics.
- i. Business mathematics.
- j. Principles and procedures related to entrepreneurship.

*English as a Second Language***English as a Second Language (ESL), Pre-K—6; 5-12**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations:

- a. Language and Linguistics.
  - i. Language as a system: functions and registers of language.
  - ii. The structure and nature of language: Phonology, morphology, syntax, semantics, pragmatics, discourse varieties, aspects of social and academic language, rhetorical registers, and writing conventions.
  - iii. Language variation and change.
- b. Language acquisition and literacy development.
  - i. Theory and research in first and second language acquisition.
  - ii. Knowledge of the significant theories and practices for developing reading skills and reading comprehension in English as a first language at different educational levels.
  - iii. Relevance of linguistic differences between the first and the second language for reading instruction in English.
  - iv. Differences in initial reading instruction in English (including phonemic awareness and phonics) for students who may or may not be literate in their first language: effects of first language literacy on second language learning and literacy.
  - v. Formal and informal measures for assessing development in reading skills and their use with second language learners.
  - vi. Development of listening, speaking, reading, and writing vocabulary.
  - vii. Approaches and practices for developing writing skills and the use of writing tools.
  - viii. Writing process and formal elements of writing.
  - ix. Oral/Aural fluency in English at different proficiency levels.
  - x. Social and academic English and academic language for the content areas.
  - xi. Development of metalinguistic skills and vocabulary appropriate to cognitive, academic, and language proficiency levels.
- c. Instructional approaches and best practices for teaching ESL
  - i. Foundations of ESL instruction.
  - ii. Theories and sheltered strategies for developing English language skills in listening, speaking, reading, and writing for English language learners in bilingual or multilingual classrooms from the primary grades on.
  - iii. Research-based practices for English language development.
  - iv. Program models and teaching strategies for developing and integrating language skills.
  - v. Planning and implementing standards-based ESL and content instruction.
- d. Socio-cultural and socio-emotional considerations in teaching ESL.
  - i. Regional, socioeconomic, and developmental factors influencing language variation and bilingualism or multilingualism.
  - ii. The nature and role of culture and its intersection with teaching and learning.
  - iii. Cultural, racial, ethnic, and linguistic identity.
  - iv. Intercultural communication in the classroom.
  - v. Special populations and situations: long-term English language learners, English learners with disabilities, and students with limited or interrupted formal education.
  - vi. The role of the community, families, and schools in English language learner education.
- e. Formal and informal English language assessment procedures and instruments for English language learners: selection, administration, and interpretation; identification of bias and normal variation in performance, as well as possible differentiation from learning disabilities.

- f. Federal and state laws pertaining to the education of English language learners.
- g. Theoretical, political, and historical foundations of education for English language learners.
- h. Instruction, assessments, resources, research, and advances in the field of ESL.
- i. Strategies for school collaboration, family outreach, and community involvement for English language learners.

### *Library*

#### **Library, All**

Teacher candidates must demonstrate the necessary depth and breadth of content knowledge needed to support all students in mastering expectations:

- a. Characteristics, uses, and design of information systems, for standard reference sources and appropriate technologies.
- b. Selection, acquisition, organization, and maintenance of information resources.
- c. Appropriate equipment for using information resources.
- d. Development, organization, management, and evaluation of school library media programs and resource centers.
- e. Literature for children and young adults.
- f. Selection, adaptation, and production of instructional materials.
- g. Federal and state laws and regulations pertaining to media, including those governing access to and reproduction of materials.
- h. Ethical issues affecting library media services.
- i. Community and governmental resources.

*Specialist Teacher Licenses and Levels, 603 CMR 7.07***Instructional Technology Specialist, All (Initial License)**

- a. Understand safety and security concepts, security and recovery strategies, and how to support students to deal with cyberbullying and peer pressure.
- b. Understand, analyze impact of, and apply technology laws and license agreements and permissions.
- c. Recognize, analyze, and evaluate the impact of technology, including cybercrime and assistive technology, in people's lives, commerce, and society.
- d. Understand what it means to be a good digital citizen.
- e. Select and use appropriate digital tools and varied input techniques, such as keyboards and speech recognition software, to publish multimedia artifacts or to communicate, collaborate, or exchange information.
- f. Use online research skills to gather relevant information from multiple digital sources, evaluate the credibility and accuracy of sources, and appropriately attribute sources.
- g. Understand that computing devices can take different forms and have different components.
- h. Select and use a variety of computing devices and digital tools to troubleshoot and solve simple problems.
- i. Differentiate between tasks that are best done by computing systems and humans.
- j. Understand the components of a network and network authentication.
- k. Possess basic understanding of the relationship among computing systems, networks, and services.
- l. Understand binary and Boolean logic and how these are implemented in computer hardware and software.
- m. Understand how graphics and text are represented in a computer system.
- n. Possess basic understanding of abstractions, computer programs (such as block-based programs), algorithms, and databases.
- o. Understand how information can be collected, used, and presented with computing devices or digital tools.
- p. Understand how to create a model and use data from a simulation.
- q. Understand how to decompose tasks/problems into sub-problems to plan solutions.
- r. Understand how to write and analyze algorithms and block-based computer programs using an iterative design process.
- s. Collaborate with school and district leaders, content specialists and other stakeholders to identify the appropriate uses of technology resources to support the development, communication, and implementation of plans for improving student performance under M.G.L. c. 69, § 1I.
- t. Coach, model, observe, and provide feedback for teachers in the integration of in-person learning and technology to improve, facilitate, and extend learning and instruction within and beyond the classroom; continuously monitor student progress to inform tailoring of instruction; individualize learning for each student; and allow students to advance to new content based upon mastery.
- u. Develop strategies for achieving equitable access to digital resources outside the classroom and connecting educators, students, and parents/guardians.
- v. Coach teachers and instruct students in the safe, healthy, legal, and ethical uses of digital information and technologies in people's lives, commerce, and society.
- w. Understand the impact of technology on instructional practice, student learning, and resource allocation at the school and district level.
- x. Select, support, and evaluate the use of assistive and adaptive technology and accessible educational materials for students and adults.

**Reading, (All Levels)**

- a. Foundational Knowledge. Candidates demonstrate knowledge of the theoretical, historical, and evidence-based foundations of reading, writing, language, speaking, listening, and viewing, as well as the roles of the reading/literacy specialist in schools.
  1. Candidates demonstrate knowledge of theoretical, historical, and evidence-based components of reading throughout the grades: concepts of print, phonological awareness, phonics, word recognition, fluency, vocabulary and comprehension.
  2. Candidates demonstrate knowledge of theoretical, historical, and evidence-based components of writing throughout the grades: conventions and structure of various types of writing, the relation between writing and reading development, as well as conventions of spelling, handwriting, and typing.
  3. Candidates demonstrate knowledge of theoretical, historical, and evidence-based components of communication throughout the grades: structure of language, conventions of standard English, vocabulary acquisition and use, speaking, listening, and viewing.
- b. Curriculum and Instruction. Candidates use foundational knowledge to select, critique, evaluate, and design high-quality literacy curricula to meet the needs of all learners, especially those who experience difficulty with literacy.
  1. Candidates plan, adapt, teach and evaluate a range of evidence-based instructional approaches and practices for individual students, especially those who experience difficulty with literacy.
  2. Candidates collaborate with and coach school-based educators in implementing and evaluating high-quality instructional practices and curriculum for whole-class, small-group, and individual instruction in the domains of reading, writing, listening and speaking.
  3. Candidates know how to appropriately select literature and informational text for children and adolescents based on text complexity and student reading proficiency.
  4. Candidates demonstrate knowledge of research-based approaches to teaching disciplinary literacy throughout the grades.
  5. Candidates demonstrate knowledge of the characteristics of reading, writing, and language-based learning disabilities, as well as the research-based strategies, curricula, and practices to address them in the general education classroom and in school-based intervention programs.
- c. Assessment and Evaluation. Candidates understand, select, and use valid, reliable, fair, and appropriate assessment tools to screen, diagnose, and measure student literacy achievement, inform instruction, and evaluate interventions.
  1. Candidates know the purpose, attributes, formats, strengths/limitations, and influences of various types of tools in a comprehensive literacy and language assessment system (including validity, reliability, inherent language, dialect and/or cultural bias) and apply that knowledge to using assessment tools.
  2. Candidates prepare to work with colleagues to administer, interpret, and use data for decision making about student assessment, instruction, intervention, and evaluation for individual students, and groups of students.
  3. Candidates prepare to lead professional learning experiences to assist teachers in selecting, administering, analyzing, interpreting, and using results data for instructional decision making for classrooms and schools.
  4. Candidates are able to produce written and oral communication, which explains assessment results and advocates for appropriate literacy and language practices to a variety of stakeholders, including teachers, administrators, and parents/guardians.
- d. Diversity and Equity. Candidates demonstrate knowledge of research, relevant theories, pedagogies, and essential concepts of diversity and equity.

1. Candidates demonstrate an understanding of the relationship between first and second language acquisition and literacy development.
2. Candidates demonstrate knowledge of research-based approaches to literacy instruction for English learners, including knowledge of appropriate curricula, instructional practices, and assessment.
3. Candidates create and advocate for inclusive and affirming classrooms and school environments.
- e. Learners and the Literacy Environment. Candidates meet the developmental needs of all learners and collaborate with school personnel to use a variety of digital and print materials to engage and motivate all learners; integrate digital technologies in appropriate, safe, and effective ways; foster a positive climate that supports a literacy-rich learning environment.
  1. Candidates know a range of strategies for meeting the developmental needs of learners, taking into account their physical, social, emotional, cultural, and intellectual factors, as well as the different stages of literacy development from birth through adolescence.
- f. Professional Learning and Leadership. Candidates develop and use leadership skills to collaboratively select, align, and assess instructional practices and interventions that support students, professional colleagues, and families.
  1. Candidates learn how to engage in collaborative decision making with colleagues to select, align, and assess instructional practices and interventions within and across classrooms.
  2. Candidates learn how to develop, refine, and demonstrate leadership skills through effective interpersonal and written communication about literacy instruction, curricula, and assessment with colleagues, administrators, and families.

### **Speech, Language, and Hearing Disorders, All**

No license-specific Subject Matter Knowledge (SMK) Requirements. See Regulations for Educator Licensure and Program Approval, section [603 CMR 7.07 \(3\)](#).

*Administrator Licenses and Levels, 603 CMR 7.09:*

**Superintendent/Assistant Superintendent, All**

No license-specific Subject Matter Knowledge (SMK) Requirements.

**School Principal/Assistant School Principal, Pre-K—8; 5-12**

No license-specific Subject Matter Knowledge (SMK) Requirements.

**Supervisor/Director**, Dependent on Prerequisite License

No license-specific Subject Matter Knowledge (SMK) Requirements.

**Special Education Administrator, All**

No license-specific Subject Matter Knowledge (SMK) Requirements.

**School Business Administrator, All**

- a. Financial planning and management methods.
- b. Accounting systems.
- c. Management of federal and state appropriations for special services (e.g., special education, food, and transportation).
- d. Municipal and school finance laws and regulations.
- e. Personnel matters including contract negotiations.
- f. Purchasing and district level facilities management.
- g. Insurance.
- h. Payroll.
- i. Scheduling.

*Professional Support Personnel Licenses and Levels, 603 CMR 7.11*

**School Counselor, Pre-K—8; 5-12**

- a. Familiarity with the *Massachusetts Curriculum Frameworks* and their use in the advising responsibilities of the guidance counselor.
- b. Understanding and interpretation of the Massachusetts Comprehensive Assessment System (MCAS) and other academic test results to students, teachers, and parents.
- c. Psychology of learning.
- d. Understanding of the diagnosis and treatment of learning and behavior disorders.
- e. Theories of normal and abnormal intellectual, social, and emotional development.
- f. Knowledge of strategies used for the prevention and treatment of substance abuse, physical and sexual abuse, the spectrum of mental illnesses, and violence in Pre-K—12 students.
- g. Philosophy, principles and practices in school guidance counseling.
- h. Federal, state, municipal, and school laws and regulations.
- i. Career counseling.
- j. Resources within the school system or the community for referral.
- k. Knowledge of statistics, research design, and research in guidance counseling.
- l. Group counseling and group leadership.
- m. Development of skills for consultation with parents, teachers, and administrators.
- n. College counseling and use of college and other post-secondary resource materials (grades 5-12).

**School Nurse, All**

No license-specific Subject Matter Knowledge (SMK) Requirements. See Regulations for Educator Licensure and Program Approval, section [603 CMR 7.11 \(2\)](#).

**School Psychologist, All**

No license-specific Subject Matter Knowledge Requirements (SMK). See Regulations for Educator Licensure and Program Approval, section [603 CMR 7.11 \(3\)](#).

**School Social Worker/School Adjustment Counselor, All**

- a. Principles of therapeutic relationships.
- b. Theories of normal and abnormal intellectual, social, and emotional development.
- c. Learning disorders, including emotional issues affecting student achievement, and their treatment.
- d. Prevention and treatment of substance abuse, physical and sexual abuse, and violence in Pre-K—12 students.
- e. Knowledge of state-of-the-art diagnostic instruments; procedures for testing and interpreting results.
- f. Techniques for communicating and working with families, school personnel, and community members.
- g. Knowledge of the criminal justice system with particular reference to the juvenile justice system and organizations.
- h. Knowledge of medical conditions and medication related to physical disabilities and learning disorders.
- i. Federal and state laws and regulations addressing the legal rights of students and families.

## **Appendix 1: Massachusetts Test for Educator Licensure (MTEL)**

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A complete list of required MTEL's for each license area is available on the [ESE website](#).