

The State Board of Education (SBOE) adopts amendments to §74.12 and §74.13, concerning graduation requirements. The amendments are adopted with changes to the proposed text as published in the February 22, 2019 issue of the *Texas Register* (44 TexReg 772). The adopted amendments align with recent changes to the Texas Essential Knowledge and Skills (TEKS) for fine arts and establish courses to be included in a cybersecurity pathway for the science, technology, engineering, and mathematics (STEM) endorsement.

REASONED JUSTIFICATION. The 83rd Texas Legislature, Regular Session, 2013, passed House Bill (HB) 5, amending Texas Education Code (TEC), §28.025, to transition from three high school graduation programs to one foundation high school program with endorsement options to increase flexibility for students. HB 5 gave the SBOE the authority to identify advanced courses related to the new graduation program, identify the curriculum requirements for the endorsements, and determine the requirements for performance acknowledgments related to the new graduation program.

The 85th Texas Legislature, Regular Session, 2017, passed HB 3593, amending TEC, §28.025(c-1)(1), to add cybersecurity and computer coding to the courses to be included in a STEM endorsement. HB 3593 also added TEC, §28.025(c-10), to require the SBOE to adopt or select five technology applications courses to be included in a cybersecurity pathway for the STEM endorsement. In August 2018, a committee of secondary and postsecondary educators and business and industry representatives was selected to develop recommendations for TEKS for new cybersecurity courses and for the cybersecurity pathway. The committee met again in October 2018 and January 2019 to finalize their recommendations.

For students to earn state credit toward specific graduation requirements, a course must be approved by the SBOE and included in SBOE rule. At the September 2017 meeting, the SBOE discussed International Baccalaureate (IB) courses that are not currently included in SBOE rule and considerations regarding the appropriate amount of state credit that should be awarded for IB courses. At that time, the SBOE requested that Texas Education Agency (TEA) staff prepare rule text to address these issues. Throughout 2018, the SBOE adopted rules to align the TEKS with current course offerings by the International Baccalaureate Organization. In September 2018, the SBOE discussed the addition of two currently approved innovative courses, IB Film Standard Level and IB Film Higher Level, to the TEKS for fine arts, and in November 2018, the SBOE approved for first reading and filing authorization the proposal to add the two new courses. At the January-February 2019 meeting, the SBOE approved for second reading and final adoption the TEKS for IB Film Standard Level and IB Film Higher Level.

The proposed amendments to 19 TAC §74.12 and §74.13 were approved for first reading and filing authorization at the January-February 2019 SBOE meeting.

The proposed amendment to §74.12, Foundation High School Program, added IB Film Standard or Higher Level to the list of courses that would satisfy a fine arts credit. Language was also added to clarify that the third and fourth English credits may consist of a comparable IB course that meets the TEKS for English III or IV, respectively. In addition, a technical correction was made in subsection (b)(5)(F) to update a cross reference.

The proposed amendment to §74.13, Endorsements, established course options for a cybersecurity pathway for the STEM endorsement.

At the April 2019 meeting, the SBOE postponed approving §74.12 and §74.13 for second reading and final adoption until the June 2019 meeting and requested that TEA staff provide proposed language to allow two-credit IB courses in mathematics or science to satisfy more than one graduation requirement.

The following changes were made to §74.12 and §74.13 since published as proposed.

#### *§74.12, Foundation High School Program*

Subsection (b)(2)(B)(viii) was amended to remove IB courses from the requirement that only "a comparable AP or IB mathematics course that does not count toward another credit required for graduation" may satisfy the third credit for mathematics required under (b)(2)(B).

Subsection (b)(2)(C) was deleted and replaced with new subsection (b)(2)(C) to read, "One credit of a two-credit IB mathematics course selected from Chapter 111 of this title (relating to Texas Essential Knowledge and Skills for Mathematics) may satisfy the additional mathematics credit."

Subsection (b)(3)(B)(vii) was amended to remove IB courses from the requirement that only "a comparable AP or IB science course that does not count toward another credit required for graduation" may satisfy the science requirement outlined under Subsection (b)(2)(B).

New subsection (b)(3)(B)(xxiii) was added to read, "one credit of a two-credit IB science course selected from Chapter 112 of this title (relating to Texas Essential Knowledge and Skills for Science)."

Subsection (b)(3)(D) was deleted.

#### *§74.13, Endorsements*

Subsection (e)(2)(H) was amended to remove IB courses from the requirement that only "a comparable AP or IB mathematics course that does not count toward another credit required for graduation" may satisfy the fourth credit for mathematics required under (e)(2).

Subsection (e)(5) was deleted and replaced with new subsection (e)(5) to read, "The fourth mathematics credit may be satisfied with one credit of a two-credit IB mathematics course selected from Chapter 111 of this title (relating to Texas Essential Knowledge and Skills for Mathematics) that does not count toward another credit required for graduation."

Subsection (e)(6)(G) was amended to remove IB courses from the requirement that only "a comparable AP or IB science course that does not count toward another credit required for graduation" may satisfy the fourth credit for science required under (e)(6).

Subsection (e)(6)(Y) was deleted and replaced with new subsection (e)(6)(Y) to read, "The fourth science credit may be satisfied with one credit of a two-credit IB science course selected from Chapter 112 of this title (relating to Texas Essential Knowledge and Skills for Science) that does not count toward another credit required for graduation."

References to 19 TAC Chapter 118, Texas Essential Knowledge and Skills for Economics with Emphasis on the Free Enterprise System and Its Benefits, were removed since the chapter is being repealed effective August 1, 2019.

The SBOE approved the amendments for second reading and final adoption at its June 14, 2019 meeting.

In accordance with TEC, §7.102(f), the SBOE approved the amendments for adoption by a vote of two-thirds of its members to specify an effective date earlier than the beginning of the 2020-2021 school year. The earlier effective date will allow districts of innovation that begin school prior to the statutorily required start date to implement these amendments when they begin their school year. The effective date is August 1, 2019.

**SUMMARY OF COMMENTS AND RESPONSES.** The public comment period on the proposal began February 22, 2019, and ended March 29, 2019. The SBOE also provided an opportunity for registered oral and written comments at its April 2019 meeting in accordance with the SBOE board operating policies and procedures. Following is a summary of the public comments received and the corresponding responses.

**Comment.** One administrator expressed support for the proposed new cybersecurity courses and added that the inclusion of cybersecurity courses for the STEM endorsement is long overdue.

**Response.** The SBOE agrees that the inclusion of a new cybersecurity pathway in §74.13(f)(1)(E) for the STEM endorsement is appropriate.

Comment. One administrator asked whether new §126.51, Foundations of Cybersecurity, and §126.52, Cybersecurity Capstone, which were included in the proposed new cybersecurity pathway for the STEM endorsement, would be eligible for career and technical education (CTE) weighted funding.

Response. The SBOE provides the following clarification. Technology applications courses included in the new cybersecurity pathway on the STEM endorsement in §74.13(f)(1)(E) will qualify for CTE weighted funding. The SBOE determined that the Foundations of Cybersecurity and Cybersecurity Capstone were appropriately included in the cybersecurity pathway; therefore, the courses are expected to qualify for CTE weighted funding.

Comment. Four administrators stated that the proposed new Foundations of Cybersecurity and Cybersecurity Capstone courses should receive CTE weighted funding.

Response. The SBOE agrees and determined that the Foundations of Cybersecurity and Cybersecurity Capstone courses are appropriately included in the cybersecurity pathway for the STEM endorsement. Courses included in the cybersecurity pathway are expected to qualify for CTE weighted funding.

Comment. One administrator recommended moving §126.32, Fundamentals of Computer Science; §126.33, Computer Science I; and §126.65, Advanced Placement (AP) Computer Science Principles, from 19 TAC Chapter 126 to Chapter 130. The commenter stated that school districts are now able to fund these computer science courses because they receive CTE weighted funding; therefore, even if the courses remain in 19 TAC Chapter 126, they should continue to receive the funding.

Response. The SBOE determined that Computer Science I and AP Computer Science Principles were appropriately included in §74.13(f)(E); therefore, the courses are expected to qualify for CTE weighted funding. However, the SBOE disagrees that Fundamentals of Computer Science should be included in §74.13(f)(1)(E).

Comment. One administrator stated that districts were notified that Fundamentals of Computer Science, Computer Science I, and AP Computer Science Principles qualify for weighted funding for the 2018-2019 school year. The commenter asked whether the additional computer science courses proposed for the cybersecurity pathway in new §74.13(f)(1)(E) would also receive CTE weighted funding even though the courses are technology applications courses.

Response. The SBOE provides the following clarification. Technology applications courses approved for the cybersecurity pathway on the STEM endorsement in §74.13(f)(1)(E) are expected to qualify for CTE weighted funding beginning with the 2019-2020 school year. The SBOE determined that the following technology applications courses should be included in the cybersecurity STEM pathway: Foundations of Cybersecurity, Cybersecurity Capstone, Computer Science I, AP Computer Science Principles, AP Computer Science A, and Digital Forensics. However, the SBOE determined that it was not appropriate to include Fundamentals of Computer Science in §74.13(f)(1)(E).

Comment. One administrator stated that allowing the five additional technology applications courses in cybersecurity to generate CTE weighted funding is a good idea.

Response. The SBOE agrees that the technology applications courses included in §74.13(f)(1)(E) were appropriate as proposed.

Comment. One administrator stated that all technology applications courses should be approved for CTE weighted funding.

Response. The SBOE disagrees and has determined that, in accordance with statute, TEC, §28.025(c-10), the SBOE was limited to adopt or select only five technology applications courses on cybersecurity to be included in a cybersecurity STEM pathway. The SBOE determined that the following technology applications courses were appropriately included in the required pathway: Foundations of Cybersecurity, Cybersecurity Capstone, Computer Science I, AP Computer Science Principles, AP Computer Science A, and Digital Forensics.

Comment. One administrator stated that all computer science courses should be approved for CTE weighted funding.

Response. The SBOE disagrees and has determined that, in accordance with statute, TEC, §28.025(c-10), the SBOE was limited to adopt or select only five technology applications courses on cybersecurity to be included in a cybersecurity STEM pathway. The SBOE determined that the following technology applications courses were appropriately included in the required pathway: Foundations of Cybersecurity, Cybersecurity Capstone, Computer Science I, AP Computer Science Principles, AP Computer Science A, and Digital Forensics.

Comment. One representative from higher education stated that physics should be mandatory, not optional, if the SBOE wants to prepare students for cybersecurity and technology. The commenter stated that quantum technology is based on physics. The commenter added that while the physics curriculum should be adjusted to be more inclusive, all the basic concepts of light/lasers, wave properties, and laws of conservation are based on physics.

Response. The SBOE agrees that physics is important for certain courses of study and has determined that no changes to the requirement for students to complete physics or Principles of Technology to earn a STEM endorsement are necessary.

Comment. One teacher stated that to teach cybersecurity it is necessary to have a basic understanding of physics, which includes quantum mechanics; fundamental particles; wave particle duality; gravitational waves; and particle production processes during accelerator collisions. The commenter recommended adding physics as a required course for high school students instead of adding cybersecurity courses.

Response. This comment is outside the scope of the proposed rulemaking.

Comment. One administrator asked why technology applications courses in the proposed cybersecurity pathway remain in 19 TAC Chapter 126 when §74.13(f)(1)(A) clearly states that courses that count toward the CTE option on the STEM endorsement must come from 19 TAC Chapters 127 or 130. The commenter asked whether the SBOE intends to amend §74.13(f)(1)(A) to include 19 TAC Chapter 126.

Response. The SBOE offers the following clarification. There are multiple pathway options for students to follow to fulfill the requirements for a STEM endorsement. Section 74.13(f)(1)(A) is only one such option for students taking CTE courses. In accordance with statute, TEC, §28.025(c-10), the SBOE is required to adopt or select five technology applications courses on cybersecurity to be included in a cybersecurity STEM pathway. The SBOE determined that the following technology applications courses were appropriately included in the required pathway: Foundations of Cybersecurity, Cybersecurity Capstone, Computer Science I, AP Computer Science Principles, AP Computer Science A, and Digital Forensics. The SBOE also determined that changes to §74.13(f)(1)(A) were not necessary.

Comment. One administrator asked whether the cybersecurity technology applications course, 19 TAC §126.52, Cybersecurity Capstone, included in the proposed new cybersecurity pathway in §74.13(f)(1)(E), would also count as a final or an advanced course under the CTE option for the STEM endorsement in §74.13(f)(1)(A).

Response. The SBOE offers the following clarification. CTE courses from 19 TAC Chapters 127 and 130 are required for the CTE option for a STEM endorsement under §74.13(f)(1)(A). Cybersecurity Capstone is a technology applications course from 19 TAC Chapter 126 and, therefore, would not count toward requirements for CTE courses selected from 19 TAC Chapters 127 or 130 in §74.13(f)(1)(A).

Comment. One administrator asked whether the technology applications courses listed in §74.13(f)(1)(B) would count as advanced courses for the CTE option in §74.13(f)(1)(A).

Response. The SBOE offers the following clarification. CTE courses from 19 TAC Chapters 127 and 130 are required for the CTE option for a STEM endorsement under §74.13(f)(1)(A). The technology applications courses from 19 TAC Chapter 126 listed in §74.13(f)(1)(B), therefore, do not count toward the requirement for an advanced CTE course from 19 TAC Chapter 127 or 130 in §74.13(f)(1)(A).

Comment. One administrator stated that the Principles of Cybersecurity innovative course should be included in the endorsement for cybersecurity because the innovative course does not expire until the 2021-2022 school year.

Response. The SBOE agrees that elements of the Principles of Cybersecurity innovative course merits inclusion in the cybersecurity pathway for the STEM endorsement and provides the following clarification. The Principles of Cybersecurity course will be deleted from the list of approved innovative courses and replaced with the new TEKS-based course, Foundations of Cybersecurity, beginning with the 2019-2020 school year.

Comment. Three representatives from Texas International Baccalaureate Schools expressed concern that students enrolled in International Baccalaureate (IB) courses cannot earn some endorsements because of the wording in §74.13(e)(2)(H) and §74.13(e)(6)(G).

Response. The SBOE agrees and took action to strike the reference to IB from §74.13(e)(2)(H) and §74.13(e)(6)(G).

STATUTORY AUTHORITY. The amendments are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; TEC, §28.002(c), which requires the SBOE to by rule identify the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments; TEC, §28.002(f)(2), which requires the SBOE to approve courses in cybersecurity for credit for high school graduation; TEC, §28.025(a), which requires the SBOE to by rule determine the curriculum requirements for the foundation high school program that are consistent with the required curriculum under TEC, §28.002, and to designate the specific courses in the foundation curriculum that are required under the foundation high school program; TEC, §28.025(b-1), which requires the SBOE to by rule require that the curriculum requirements for the foundation high school program include a requirement that students successfully complete four credits in English language arts, including one credit in English I, one credit in English II, one credit in English III, and one credit in an advanced English course; three credits in mathematics, including one credit in Algebra I, one credit in geometry, and one credit in any advanced mathematics course; three credits in science, including one credit in biology, one credit in any advanced science course, and one credit in integrated physics and chemistry or in an additional advanced science course; three credits in social studies, including one credit in United States history, at least one-half credit in government and at least one-half credit in economics, and one credit in world geography or world history; two credits in the same language in a language other than English; five elective credits; one credit in fine arts; and one credit in physical education; TEC, §28.025(c-1), which requires the SBOE to by rule provide students with multiple options for earning each endorsement, including, to the greatest extent possible, coherent sequences of courses. The SBOE by rule must permit a student to enroll in courses under more than one endorsement curriculum before the student's junior year; TEC, §28.025(c-1)(1), which establishes that an endorsement may be earned in science, technology, engineering, and mathematics (STEM), which includes courses related to science, including environmental science; technology, including computer science, cybersecurity, and computer coding; engineering; and advanced mathematics; TEC, §28.025(c-2), which requires the SBOE, in adopting rules, to require a student in order to earn any endorsement to successfully complete four credits in mathematics, which must include Algebra I, geometry, and two advanced mathematics courses; four credits in science, which must include biology, integrated physics and chemistry or an additional advanced science course, and two advanced science courses or an advanced career and technology course; and two additional elective credits. The SBOE, in adopting rules, is also required to develop additional curriculum requirements for each endorsement with the direct participation of educators and business, labor, and industry representatives and to require each school district to report to the agency the categories of endorsements for which the district offers all courses for curriculum requirements, as determined by board rule; and TEC, §28.025(c-10), which requires the SBOE to adopt or select five technology applications courses on cybersecurity to be included in a cybersecurity pathway for the STEM endorsement.

CROSS REFERENCE TO STATUTE. The amendments implement Texas Education Code, §§7.102(c)(4), 28.002, and 28.025.

<rule>

**§74.12. Foundation High School Program.**

- (a) Credits. A student must earn at least 22 credits to complete the Foundation High School Program.
- (b) Core courses. A student must demonstrate proficiency in the following.
  - (1) English language arts--four credits. Two of the credits must consist of English I and II. (Students with limited English proficiency who are at the beginning or intermediate level of English language proficiency, as defined by §74.4(d) of this title (relating to English Language Proficiency Standards), may satisfy the English I and English II graduation requirements by successfully completing English I for Speakers of Other Languages and English II for Speakers of Other Languages.) A third credit must consist of English III, a comparable Advanced Placement (AP) English language arts course that does not count toward another credit required for graduation, or a comparable International Baccalaureate (IB) English language arts course that meets all the requirements in §110.33 of this title (relating to English Language Arts and Reading, English III (One Credit), Beginning with School Year 2009-2010). A fourth credit may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following courses:
    - (A) English IV;
    - (B) Independent Study in English;
    - (C) Literary Genres;
    - (D) Creative Writing;
    - (E) Research and Technical Writing;
    - (F) Humanities;
    - (G) Public Speaking III;
    - (H) Communication Applications, which must be combined with another half credit from the other courses listed in subparagraphs (A)-(G) and (I)-(S) of this paragraph;
    - (I) Oral Interpretation III;
    - (J) Debate III;
    - (K) Independent Study in Speech;
    - (L) Independent Study in Journalism;
    - (M) Advanced Broadcast Journalism III;
    - (N) Advanced Journalism: Newspaper III;
    - (O) Advanced Journalism: Yearbook III;
    - (P) a comparable Advanced Placement (AP) English language arts course that does not count toward another credit required for graduation;
    - (Q) a comparable International Baccalaureate (IB) English language arts course that meets all the requirements in §110.34 of this title (relating to English Language Arts and Reading, English IV (One Credit), Beginning with School Year 2009-2010);
    - (R) after the successful completion of English I, II, and III, a locally developed English language arts course or other activity, including an apprenticeship or training hours needed to obtain an industry-recognized credential or certificate that is developed pursuant to the Texas Education Code (TEC), §28.002(g-1);
    - (S) Business English; and
    - (T) a college preparatory English language arts course that is developed pursuant to the TEC, §28.014.

- (2) Mathematics--three credits. Two of the credits must consist of Algebra I and Geometry.
- (A) The additional credit may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following courses or a credit selected from the courses listed in subparagraph (B) of this paragraph:
- (i) Mathematical Models with Applications;
  - (ii) Mathematical Applications in Agriculture, Food, and Natural Resources;
  - (iii) Digital Electronics;
  - (iv) Robotics Programming and Design;
  - (v) Financial Mathematics;
  - (vi) Applied Mathematics for Technical Professionals;
  - (vii) Accounting II;
  - (viii) Manufacturing Engineering Technology II; and
  - (ix) Robotics II.
- (B) The additional credit may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following courses:
- (i) Algebra II;
  - (ii) Precalculus;
  - (iii) Advanced Quantitative Reasoning;
  - (iv) Independent Study in Mathematics;
  - (v) Discrete Mathematics for Problem Solving;
  - (vi) Algebraic Reasoning;
  - (vii) Statistics;
  - (viii) a comparable AP mathematics course that does not count toward another credit required for graduation;
  - (ix) AP Computer Science A;
  - (x) IB Computer Science Higher Level;
  - (xi) Engineering Mathematics;
  - (xii) Statistics and Business Decision Making;
  - (xiii) Mathematics for Medical Professionals;
  - (xiv) Discrete Mathematics for Computer Science;
  - (xv) pursuant to the TEC, §28.025(b-5), after the successful completion of Algebra II, a mathematics course endorsed by an institution of higher education as a course for which the institution would award course credit or as a prerequisite for a course for which the institution would award course credit. The Texas Education Agency (TEA) shall maintain a current list of courses offered under this clause; and
  - (xvi) after the successful completion of Algebra I and Geometry, a locally developed mathematics course or other activity, including an apprenticeship or training hours needed to obtain an industry-recognized credential or certificate that is developed pursuant to the TEC, §28.002(g-1).

- (C) One credit of a two-credit IB mathematics course selected from Chapter 111 of this title (relating to Texas Essential Knowledge and Skills for Mathematics) may satisfy the additional mathematics credit.
- (3) Science--three credits. One credit must consist of Biology or a comparable AP or IB biology course.
- (A) One credit must be selected from the following laboratory-based courses:
    - (i) Integrated Physics and Chemistry;
    - (ii) Chemistry;
    - (iii) Physics;
    - (iv) Principles of Technology; and
    - (v) a comparable AP or IB chemistry or physics course that does not count toward another credit required for graduation.
  - (B) The additional credit may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following laboratory-based courses:
    - (i) Chemistry;
    - (ii) Physics;
    - (iii) Aquatic Science;
    - (iv) Astronomy;
    - (v) Earth and Space Science;
    - (vi) Environmental Systems;
    - (vii) a comparable AP science course that does not count toward another credit required for graduation;
    - (viii) Advanced Animal Science;
    - (ix) Advanced Plant and Soil Science;
    - (x) Anatomy and Physiology;
    - (xi) Medical Microbiology;
    - (xii) Pathophysiology;
    - (xiii) Food Science;
    - (xiv) Forensic Science;
    - (xv) Biotechnology I;
    - (xvi) Biotechnology II;
    - (xvii) Principles of Technology;
    - (xviii) Scientific Research and Design;
    - (xix) Engineering Design and Problem Solving;
    - (xx) Engineering Science;
    - (xxi) pursuant to the TEC, §28.025(b-5), after the successful completion of physics, a science course endorsed by an institution of higher education as a course for which the institution would award course credit or as a prerequisite for a course for which the institution would award course credit. The TEA shall maintain a current list of courses offered under this clause;



- (xxii) a locally developed science course or other activity, including an apprenticeship or training hours needed to obtain an industry-recognized credential or certificate that is developed pursuant to the TEC, §28.002(g-1); and
    - (xxiii) one credit of a two-credit IB science course selected from Chapter 112 of this title (relating to Texas Essential Knowledge and Skills for Science).
  - (C) Credit may not be earned for both physics and Principles of Technology to satisfy science credit requirements.
- (4) Social studies--three credits. Two of the credits must consist of United States History Studies Since 1877 (one credit), United States Government (one-half credit), and Economics with Emphasis on the Free Enterprise System and Its Benefits (one-half credit). The additional credit may be selected from the following courses:
- (A) World History Studies; or
  - (B) World Geography Studies; or
  - (C) a comparable AP or IB world history or world geography course that does not count toward another credit required for graduation.
- (5) Languages other than English (LOTE)--two credits.
- (A) The credits may be selected from the following:
    - (i) any two levels in the same language, including comparable AP or IB language courses that do not count toward another credit required for graduation; or
    - (ii) two credits in computer programming languages, including computer coding, to be selected from Computer Science I, II, and III, AP Computer Science Principles, AP Computer Science A, IB Computer Science Standard Level, and IB Computer Science Higher Level.
  - (B) A single two-credit IB LOTE course may only satisfy one LOTE requirement.
  - (C) If a student, in completing the first credit of LOTE, demonstrates that the student is unlikely to be able to complete the second credit, the student may substitute another appropriate course as follows:
    - (i) Special Topics in Language and Culture;
    - (ii) World History Studies or World Geography Studies for a student who is not required to complete both by the local district;
    - (iii) another credit selected from Chapter 114 of this title (relating to Texas Essential Knowledge and Skills for Languages Other Than English); or
    - (iv) computer programming languages, including computer coding.
  - (D) The determination regarding a student's ability to complete the second credit of LOTE must be agreed to by:
    - (i) the teacher of the first LOTE credit course or another LOTE teacher designated by the school district, the principal or designee, and the student's parent or person standing in parental relation;
    - (ii) the student's admission, review, and dismissal (ARD) committee if the student receives special education services under the TEC, Chapter 29, Subchapter A; or
    - (iii) the committee established for the student under Section 504, Rehabilitation Act of 1973 (29 United States Code, Section 794) if the student does not receive special education services under the TEC, Chapter 29, Subchapter A, but is covered by the Rehabilitation Act of 1973.

- (E) A student, who due to a disability, is unable to complete two credits in the same language in a language other than English, may substitute a combination of two credits that are not being used to satisfy another specific graduation requirement selected from English language arts, mathematics, science, or social studies or two credits in career and technical education or technology applications for the LOTE credit requirements. The determination regarding a student's ability to complete the LOTE credit requirements will be made by:
  - (i) the student's ARD committee if the student receives special education services under the TEC, Chapter 29, Subchapter A; or
  - (ii) the committee established for the student under Section 504, Rehabilitation Act of 1973 (29 United States Code, Section 794) if the student does not receive special education services under the TEC, Chapter 29, Subchapter A, but is covered by the Rehabilitation Act of 1973.
- (F) A student who successfully completes a dual language immersion/two-way or dual language immersion/one-way program in accordance with §89.1210(d)(3) and (4) of this title (relating to Program Content and Design), §89.1227 of this title (relating to Minimum Requirements for Dual Language Immersion Program Model), and §89.1228 of this title (relating to Two-Way Dual Language Immersion Program Model Implementation) at an elementary school may satisfy one credit of the two credits required in a language other than English.
  - (i) To successfully complete a dual language immersion program, a student must:
    - (I) have participated in a dual language immersion program for at least five consecutive school years;
    - (II) achieve high levels of academic competence as demonstrated by performance of meets or masters grade level on the State of Texas Assessments of Academic Readiness (STAAR®) in English or Spanish, as applicable; and
    - (III) achieve proficiency in both English and a language other than English as demonstrated by scores of proficient or higher in the reading and speaking domains on language proficiency or achievement tests in both languages.
  - (ii) The second credit of a language other than English must be in the same language as the successfully completed dual language immersion program.
- (6) Physical education--one credit.
  - (A) The required credit may be selected from any combination of the following one-half to one credit courses:
    - (i) Foundations of Personal Fitness;
    - (ii) Adventure/Outdoor Education;
    - (iii) Aerobic Activities; and
    - (iv) Team or Individual Sports.
  - (B) In accordance with local district policy, the required credit may be earned through completion of any Texas essential knowledge and skills-based course that meets the requirement in subparagraph (E) of this paragraph for 100 minutes of moderate to vigorous physical activity per five-day school week and that is not being used to satisfy another specific graduation requirement.
  - (C) In accordance with local district policy, credit for any of the courses listed in subparagraph (A) of this paragraph may be earned through participation in the following activities:

- (i) Athletics;
  - (ii) Junior Reserve Officer Training Corps (JROTC); and
  - (iii) appropriate private or commercially sponsored physical activity programs conducted on or off campus. The district must apply to the commissioner of education for approval of such programs, which may be substituted for state graduation credit in physical education. Such approval may be granted under the following conditions.
    - (I) Olympic-level participation and/or competition includes a minimum of 15 hours per week of highly intensive, professional, supervised training. The training facility, instructors, and the activities involved in the program must be certified by the superintendent to be of exceptional quality. Students qualifying and participating at this level may be dismissed from school one hour per day. Students dismissed may not miss any class other than physical education.
    - (II) Private or commercially sponsored physical activities include those certified by the superintendent to be of high quality and well supervised by appropriately trained instructors. Student participation of at least five hours per week must be required. Students certified to participate at this level may not be dismissed from any part of the regular school day.
- (D) In accordance with local district policy, up to one credit for any one of the courses listed in subparagraph (A) of this paragraph may be earned through participation in any of the following activities:
- (i) Drill Team;
  - (ii) Marching Band; and
  - (iii) Cheerleading.
- (E) All substitution activities allowed in subparagraphs (B)-(D) of this paragraph must include at least 100 minutes per five-day school week of moderate to vigorous physical activity.
- (F) Credit may not be earned more than once for any course identified in subparagraph (A) of this paragraph. No more than four substitution credits may be earned through any combination of substitutions allowed in subparagraphs (B)-(D) of this paragraph.
- (G) A student who is unable to participate in physical activity due to disability or illness may substitute an academic elective credit (English language arts, mathematics, science, or social studies) or a course that is offered for credit as provided by the TEC, §28.002(g-1), for the physical education credit requirement. The determination regarding a student's ability to participate in physical activity will be made by:
- (i) the student's ARD committee if the student receives special education services under the TEC, Chapter 29, Subchapter A;
  - (ii) the committee established for the student under Section 504, Rehabilitation Act of 1973 (29 United States Code, Section 794) if the student does not receive special education services under the TEC, Chapter 29, Subchapter A, but is covered by the Rehabilitation Act of 1973; or
  - (iii) a committee established by the school district of persons with appropriate knowledge regarding the student if each of the committees described by clauses (i) and (ii) of this subparagraph is inapplicable. This committee shall follow the same procedures required of an ARD or a Section 504 committee.
- (7) Fine arts--one credit.

- (A) The credit may be selected from the following courses subject to prerequisite requirements:
  - (i) Art, Level I, II, III, or IV;
  - (ii) Dance, Level I, II, III, or IV;
  - (iii) Music, Level I, II, III, or IV;
  - (iv) Music Studies;
  - (v) Theatre, Level I, II, III, or IV;
  - (vi) Musical Theatre, Level I, II, III, or IV;
  - (vii) Technical Theatre, Level I, II, III, or IV;
  - (viii) IB Film Standard or Higher Level;
  - (ix) Floral Design;
  - (x) Digital Art and Animation; and
  - (xi) 3-D Modeling and Animation.
- (B) In accordance with local district policy, credit may be earned through participation in a community-based fine arts program not provided by the school district in which the student is enrolled. The district must apply to the commissioner of education for approval of such programs, which may be substituted for state graduation credit in fine arts. Approval may be granted if the fine arts program provides instruction in the essential knowledge and skills identified for a fine arts course as defined by Chapter 117, Subchapter C, of this title (relating to High School, Adopted 2013).
- (c) Elective courses--five credits. The credits must be selected from the list of courses specified in §74.11(g) or (h) of this title (relating to High School Graduation Requirements) or from a locally developed course or activity developed pursuant to the TEC, §28.002(g-1), for which a student may receive credit and that does not satisfy a specific course requirement.
- (d) Substitutions. No substitutions are allowed in the Foundation High School Program, except as specified in this chapter.

**§74.13. Endorsements.**

- (a) A student shall specify in writing an endorsement the student intends to earn upon entering Grade 9.
- (b) A district shall permit a student to enroll in courses under more than one endorsement before the student's junior year and to choose, at any time, to earn an endorsement other than the endorsement the student previously indicated. This section does not entitle a student to remain enrolled to earn more than 26 credits.
- (c) A student must earn at least 26 credits to earn an endorsement.
- (d) A school district may define advanced courses and determine a coherent sequence of courses for an endorsement area, provided that prerequisites in Chapters 110- 117, 126, 127, and 130 of this title are followed.
- (e) To earn an endorsement a student must demonstrate proficiency in the following.
  - (1) The curriculum requirements for the Foundation High School Program as defined by §74.12 of this title (relating to Foundation High School Program).
  - (2) A fourth credit in mathematics that may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following courses:
    - (A) Algebra II;
    - (B) Precalculus;

- (C) Advanced Quantitative Reasoning;
  - (D) Independent Study in Mathematics;
  - (E) Discrete Mathematics for Problem Solving;
  - (F) Algebraic Reasoning;
  - (G) Statistics;
  - (H) a comparable Advanced Placement (AP) mathematics course that does not count toward another credit required for graduation;
  - (I) AP Computer Science A;
  - (J) International Baccalaureate (IB) Computer Science Higher Level;
  - (K) Engineering Mathematics;
  - (L) Statistics and Business Decision Making;
  - (M) Mathematics for Medical Professionals;
  - (N) Discrete Mathematics for Computer Science;
  - (O) pursuant to the Texas Education Code (TEC), §28.025(b-5), after the successful completion of Algebra II, a mathematics course endorsed by an institution of higher education as a course for which the institution would award course credit or as a prerequisite for a course for which the institution would award course credit. The Texas Education Agency (TEA) shall maintain a current list of courses offered under this subparagraph; and
  - (P) after the successful completion of Algebra I and Geometry, a locally developed mathematics course or other activity, including an apprenticeship or training hours needed to obtain an industry-recognized credential or certificate that is developed pursuant to the TEC, §28.002(g-1).
- (3) A student may complete a course listed in paragraph (2) of this subsection before or after completing a course listed in §74.12(b)(2)(A) of this title.
  - (4) The fourth mathematics credit may be a college preparatory mathematics course that is developed and offered pursuant to the TEC, §28.014.
  - (5) The fourth mathematics credit may be satisfied with one credit of a two-credit IB mathematics course selected from Chapter 111 of this title (relating to Texas Essential Knowledge and Skills for Mathematics) that does not count toward another credit required for graduation.
  - (6) An additional credit in science that may be selected from one full credit or a combination of two half credits from two different courses, subject to prerequisite requirements, from the following courses:
    - (A) Chemistry;
    - (B) Physics;
    - (C) Aquatic Science;
    - (D) Astronomy;
    - (E) Earth and Space Science;
    - (F) Environmental Systems;
    - (G) a comparable AP science course that does not count toward another credit required for graduation;
    - (H) Advanced Animal Science;

- (I) Advanced Plant and Soil Science;
  - (J) Anatomy and Physiology;
  - (K) Medical Microbiology;
  - (L) Pathophysiology;
  - (M) Food Science;
  - (N) Forensic Science;
  - (O) Biotechnology I;
  - (P) Biotechnology II;
  - (Q) Principles of Technology;
  - (R) Scientific Research and Design;
  - (S) Engineering Design and Problem Solving;
  - (T) Engineering Science;
  - (U) pursuant to the TEC, §28.025(b-5), after the successful completion of physics, a science course endorsed by an institution of higher education as a course for which the institution would award course credit or as a prerequisite for a course for which the institution would award course credit. The TEA shall maintain a current list of courses offered under this subparagraph;
  - (V) a locally developed science course or other activity, including an apprenticeship or training hours needed to obtain an industry-recognized credential or certificate that is developed pursuant to the TEC, §28.002(g-1);
  - (W) pursuant to the TEC, §28.025(c-3), a student pursuing an arts and humanities endorsement who has the written permission of the student's parent or a person standing in parental relation to the student may substitute a course that is not being used to satisfy another specific graduation requirement selected from:
    - (i) Chapter 110 of this title (relating to Texas Essential Knowledge and Skills for English Language Arts and Reading);
    - (ii) Chapter 113 of this title (relating to Texas Essential Knowledge and Skills for Social Studies);
    - (iii) Chapter 114 of this title (relating to Texas Essential Knowledge and Skills for Languages Other Than English); or
    - (iv) Chapter 117 of this title (relating to Texas Essential Knowledge and Skills for Fine Arts); and
  - (X) credit may not be earned for both physics and Principles of Technology to satisfy science credit requirements.
  - (Y) The fourth science credit may be satisfied with one credit of a two-credit IB science course selected from Chapter 112 of this title (relating to Texas Essential Knowledge and Skills for Science) that does not count toward another credit required for graduation.
- (7) Two additional elective credits that may be selected from the list of courses specified in §74.11(g) or (h) of this title (relating to High School Graduation Requirements).
- (f) A student may earn any of the following endorsements.
- (1) Science, technology, engineering, and mathematics (STEM). A student may earn a STEM endorsement by completing the requirements specified in subsection (e) of this section, including Algebra II, chemistry, and physics or Principles of Technology and:

- (A) a coherent sequence of courses for four or more credits in career and technical education (CTE) that consists of at least two courses in the same career cluster and at least one advanced CTE course. The courses may be selected from Chapter 130 of this title (relating to Texas Essential Knowledge and Skills for Career and Technical Education), Chapter 127 of this title (relating to Texas Essential Knowledge and Skills for Career Development), or CTE innovative courses approved by the commissioner of education. The final course in the sequence must be selected from Chapter 130, Subchapter O, of this title (relating to Science, Technology, Engineering, and Mathematics) or Career Preparation I or II and Project-Based Research in Chapter 127, Subchapter B, of this title (relating to High School), if the course addresses a STEM-related field; or
- (B) a coherent sequence of four credits in computer science selected from the following:
- (i) Fundamentals of Computer Science; or
  - (ii) Computer Science I; or
  - (iii) Computer Science II; or
  - (iv) Computer Science III; or
  - (v) Digital Forensics; or
  - (vi) Discrete Mathematics for Computer Science; or
  - (vii) Game Programming and Design; or
  - (viii) Mobile Application Development; or
  - (ix) Robotics Programming and Design; or
  - (x) Independent Studies in Technology Applications; or
  - (xi) AP Computer Science A; or
  - (xii) AP Computer Science Principles; or
  - (xiii) IB Computer Science, Standard Level; or
  - (xiv) IB Computer Science, Higher Level; or
- (C) three credits in mathematics by successfully completing Algebra II and two additional mathematics courses for which Algebra II is a prerequisite by selecting courses from subsection (e)(2) of this section; or
- (D) four credits in science by successfully completing chemistry, physics, and two additional science courses by selecting courses from subsection (e)(6) of this section; or
- (E) a coherent sequence of four courses in cybersecurity to consist of Foundations of Cybersecurity and Cybersecurity Capstone and two additional courses to be selected from the following:
- (i) AP Computer Science A; or
  - (ii) Computer Science I; or
  - (iii) AP Computer Science Principles; or
  - (iv) Digital Forensics; or
  - (v) Computer Maintenance; or
  - (vi) Internetworking Technologies I; or
  - (vii) Internetworking Technologies II; or
  - (viii) Networking; or

- (F) in addition to Algebra II, chemistry, and physics, a coherent sequence of three additional credits from no more than two of the categories or disciplines represented by subparagraphs (A), (B), (C), and (D) of this paragraph.
- (2) Business and industry. A student may earn a business and industry endorsement by completing the requirements specified in subsection (e) of this section and:
- (A) a coherent sequence of courses for four or more credits in CTE that consists of at least two courses in the same career cluster and at least one advanced CTE course. The courses may be selected from Chapter 130 of this title, Chapter 127 of this title, or CTE innovative courses approved by the commissioner. The final course in the sequence must be selected from one of the following:
    - (i) Chapter 130, Subchapter A, of this title (relating to Agriculture, Food, and Natural Resources); or
    - (ii) Chapter 130, Subchapter B, of this title (relating to Architecture and Construction); or
    - (iii) Chapter 130, Subchapter C, of this title (relating to Arts, Audio/Video Technology, and Communications); or
    - (iv) Chapter 130, Subchapter D, of this title (relating to Business Management and Administration); or
    - (v) Chapter 130, Subchapter F, of this title (relating to Finance); or
    - (vi) Chapter 130, Subchapter I, of this title (relating to Hospitality and Tourism); or
    - (vii) Chapter 130, Subchapter K, of this title (relating to Information Technology); or
    - (viii) Chapter 130, Subchapter M, of this title (relating to Manufacturing); or
    - (ix) Chapter 130, Subchapter N, of this title (relating to Marketing); or
    - (x) Chapter 130, Subchapter P, of this title (relating to Transportation, Distribution, and Logistics); or
    - (xi) Career Preparation I or II and Project-Based Research in Chapter 127, Subchapter B, of this title if the course addresses a career from a field listed in clauses (i)-(x) of this subparagraph; or
  - (B) four English credits by selecting courses from Chapter 110 of this title to include three levels in one of the following areas:
    - (i) public speaking; or
    - (ii) debate; or
    - (iii) advanced broadcast journalism; or
    - (iv) advanced journalism: newspaper; or
    - (v) advanced journalism: yearbook; or
    - (vi) advanced journalism: literary magazine; or
  - (C) four technology applications credits by selecting from the following:
    - (i) Digital Design and Media Production; or
    - (ii) Digital Art and Animation; or
    - (iii) 3-D Modeling and Animation; or
    - (iv) Digital Communications in the 21st Century; or
    - (v) Digital Video and Audio Design; or



- (vi) Web Communications; or
  - (vii) Web Design; or
  - (viii) Web Game Development; or
  - (ix) Independent Study in Evolving/Emerging Technologies; or
- (D) a coherent sequence of four credits from subparagraph (A), (B), or (C) of this paragraph.
- (3) Public services. A student may earn a public services endorsement by completing the requirements specified in subsection (e) of this section and:
- (A) a coherent sequence of courses for four or more credits in CTE that consists of at least two courses in the same career cluster and at least one advanced CTE course. The courses may be selected from Chapter 130 of this title, Chapter 127 of this title, or CTE innovative courses approved by the commissioner. The final course in the sequence must be selected from one of the following:
    - (i) Chapter 130, Subchapter E, of this title (relating to Education and Training); or
    - (ii) Chapter 130, Subchapter G, of this title (relating to Government and Public Administration); or
    - (iii) Chapter 130, Subchapter H, of this title (relating to Health Science); or
    - (iv) Chapter 130, Subchapter J, of this title (relating to Human Services); or
    - (v) Chapter 130, Subchapter L, of this title (relating to Law, Public Safety, Corrections, and Security); or
    - (vi) Career Preparation I or II and Project-Based Research in Chapter 127, Subchapter B, of this title if the course addresses a field from a cluster listed in clauses (i)-(v) of this subparagraph; or
  - (B) four courses in Junior Reserve Officer Training Corps (JROTC).
- (4) Arts and humanities. A student may earn an arts and humanities endorsement by completing the requirements specified in subsection (e) of this section and:
- (A) five social studies credits by selecting courses from Chapter 113 of this title; or
  - (B) four levels of the same language in a language other than English by selecting courses in accordance with Chapter 114 of this title, which may include Advanced Language for Career Applications; or
  - (C) two levels of the same language in a language other than English and two levels of a different language in a language other than English by selecting courses in accordance with Chapter 114 of this title; or
  - (D) four levels of American sign language by selecting courses in accordance with Chapter 114 of this title; or
  - (E) a coherent sequence of four credits by selecting courses from one or two categories or disciplines in fine arts from Chapter 117 of this title or innovative courses approved by the commissioner; or
  - (F) four English credits by selecting from the following:
    - (i) English IV; or
    - (ii) Independent Study in English; or
    - (iii) Literary Genres; or
    - (iv) Creative Writing; or
    - (v) Research and Technical Writing; or

- (vi) Humanities; or
- (vii) Communication Applications; or
- (viii) AP English Literature and Composition; or
- (ix) AP English Language and Composition; or
- (x) IB Language Studies A: Language and Literature Standard Level; or
- (xi) IB Language Studies A: Language and Literature Higher Level; or
- (xii) IB Language Studies A: Literature Standard Level; or
- (xiii) IB Language Studies A: Literature Higher Level; or
- (xiv) IB Literature and Performance Standard Level.

(5) Multidisciplinary studies. A student may earn a multidisciplinary studies endorsement by completing the requirements specified in subsection (e) of this section and:

- (A) four advanced courses that prepare a student to enter the workforce successfully or postsecondary education without remediation from within one endorsement area or among endorsement areas that are not in a coherent sequence; or
- (B) four credits in each of the four foundation subject areas to include chemistry and/or physics and English IV or a comparable AP or IB English course; or
- (C) four credits in Advanced Placement, International Baccalaureate, or dual credit selected from English, mathematics, science, social studies, economics, languages other than English, or fine arts.

(g) A course completed as part of the set of four courses needed to satisfy an endorsement requirement may also satisfy a requirement under §74.12(b) and (c) of this title and subsection (e)(2), (4), (5), and (6) of this section, including an elective requirement. The same course may count as part of the set of four courses for more than one endorsement.