

TENNESSEE CAREER AND TECHNICAL EDUCATION TEXTBOOK SCREENING INSTRUMENT
Sections I & III Reviews

Book:	Engineering Fundamentals	Publisher:	Goodheart-Willcox
ISBN:	978-1-63126-285-2	Year:	2018
Levels/Course:	Basal	Category:	5924

BEFORE YOU BEGIN

ALIGNMENT TO THE TENNESSEE CAREER AND TECHNICAL EDUCATION STANDARDS:

Tennessee's Career and Technical Education Standards (hereafter, "the standards") represent a significant shift in the definition of student proficiency within career and technical education environments. Evaluators of materials should understand that the standards replace the proficiency frameworks of years past in three major respects:

- 1) A shift to clear, specific, and measurable expectations for student learning. The standards articulate deep knowledge and skill attainment, departing from the competency-based structure of years past.
- 2) Increased focus on rigor in literacy and mathematics within technical contexts. The new standards align to all Tennessee State Standards for English Language Arts and Literacy in Technical Subjects and, where appropriate, select Tennessee State Standards in Mathematics.
- 3) Sequential progression of knowledge and skills within and across courses. The new standards build on each other both within course content and across course levels, arranged within programs of study that culminate in capstone and/or work-based learning experiences for students.

Evaluators of materials must be well versed in the standards for the course(s) aligned to the materials in question, how the content fits into the progressions in the content standards, and the expectations of the standards with respect to conceptual understanding, fluency, and technical application. Aligned courses in the Architecture & Construction Career Cluster:

ORGANIZATION OF THIS DOCUMENT

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY

Section II includes additional criteria for alignment to the standards as well as indicators of quality.

SECTION III: FOCUS AREA (optional)

Section III allows reviewers to capture qualitative observations on an additional area of focus, if presented in the materials.

*For the purposes of this document, Tennessee CTE students are considered to be enrolled in course "levels" (i.e., Level 1, Level 2, Level 3, and Level 4) due to variation in the *grade* level at which students may take a course. For example, a tenth-grade student may be enrolled in a Level 1 course. For this reason, reviewers are asked to evaluate materials on the basis of their alignment to particular *course levels*, not *grade levels* or *grade bands*.

**This percentage is a guide. Reviewers should not attempt to compute percentages based on counting pages or counting lessons. Reviewers will use their professional judgment to determine how students are meant to spend their time to determine focus and provide evidence for their decision.

Section II(1). ADDITIONAL ALIGNMENT CRITERIA	SCORE	JUSTIFICATION/NOTES
<p>A. Materials are aligned to relevant national and/or industry standards where appropriate. For example, <i>Mechatronics I</i> materials routinely make reference to and reinforce connections with national industry certification standards from companies like Siemens.</p>	2	<p>The materials are aligned with national and/or industry standards by detailing those items through specific engineering careers in individual chapters, as well as outlining needed certifications for those careers such as a Professional Engineer (P.E) license.</p>
<p>B. Materials are aligned to discipline-specific content or pedagogical frameworks frequently used by professionals in associated industries. For example, <i>Differentiating Instruction</i> materials routinely make reference to and reinforce connections with instructional strategies that meet the educational needs of the student, as specified in the standards.</p>	2	<p>The materials describe important introductory discipline-specific frameworks like the design process, which is fundamental to engineering. The materials also illustrate the need and processes for research, brainstorming, modeling and testing procedures.</p>
<p>C. Connections are made to discipline-specific professional societies and organizations, and their value is clearly communicated in the materials. For example, <i>School Counseling</i> materials routinely make reference to and reinforce connections with the American School Counselor Association (ASCA).</p>	2	<p>The content introduces engineering as a profession in Chapter 2 and details particular accreditation and professional organizations in the overall career field. These are reinforced and referenced throughout the content through online activities and Chapters 8-17,</p>

		which describe more specific engineering career fields.
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Additional Comment Section II(1):

Section II(2). SEQUENCE AND PROGRESSION OF STANDARDS	SCORE	JUSTIFICATION/NOTES
A. Connections are made within a course between knowledge and skills, where these connections are appropriate and natural, as set forth by the standards.	2	The first half of the content details basic engineering knowledge through key terms, activities, etc., while the last half outlines the necessary skills linked to that general knowledge through specific engineering disciplines.
B. Materials are vertically coherent with previous courses and these connections are made clear in the materials. The connections are explicit to the other materials in the course.	2	This content is intended for the first course in the sequence, Principles of Engineering and Technology, so no connection with previous courses are needed or relevant.
C. For materials in a series, content progressions reflect the progressions as seen in the standards. These progression connections are clearly indicated in the materials. Any discrepancies in content progressions enhance the required learning in each course and are clearly aimed at helping students meet the standards as written.	2	This content is intended for the first course in the sequence, Principles of Engineering and Technology, so no connection with

		previous courses are needed or relevant. The content addresses all of the course standards as outlined by the state, and it reinforces these standards multiple times throughout the available printed and online materials.
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Section II(3). TEACHER SUPPORTS	SCORE	JUSTIFICATION/NOTES
A. Materials support teachers in ways such as the following: planning (including ideas for pacing), sample lessons, laboratory applications, projects, vocabulary, and instructional strategies.	0	Teacher support materials were not made available to the reviewer through any hands-on or online content.
B. Materials include teacher-directed materials that explain the role of the practice activities in the classroom and in students' content development. Problems and activities present opportunities for students to make use of and exhibit the skills as they work on mastery of content.	0	Teacher support materials were not made available to the reviewer through any hands-on or online content.
C. Opportunities and resources are provided for teachers to conduct independent study to enhance their own understanding and knowledge of course topics. Materials provide avenues to seek and identify quality professional development in a manner that will support student learning.	0	Teacher support materials were not made available to the reviewer through any hands-on or online content.

Section II(4). USABILITY	SCORE	JUSTIFICATION/NOTES
A. Materials can be accessed in a variety of formats and media, including but not limited to printed textbooks, digital storage devices, online applications, and cloud-based forums.	2	Student materials can be accessed online and include a 'companion' website with additional activities, such as pretests, posttests, career activities, matching activities, and vocabulary games.
B. Materials are clear and easy to read for students, teachers, and parents. The design and graphics do not distract from the course content and are appropriately placed.	2	A wide variety of graphics and illustrations aid the learning process by giving adequate visual representations of specific content. They do not distract from that content at all.
C. Materials include supports for all learners, e.g., ELs, students who are below grade level, advanced students.	0	No materials were provided for review that include specialized support for all learners. Again, teacher support materials were not made available to the reviewer through any hands-on or online content.
D. Materials are culturally and politically sensitive to the full range of potential users, and do not advance unwarranted opinions that are not factually based. All materials strive to present content, not beliefs.	2	

Please note any concerns with sensitivity below:

There is no evidence of cultural or political bias or insensitivity in the printed texts or available online materials.

Section II(5). ASSESSMENTS	SCORE	JUSTIFICATION/NOTES
<p>A. Materials include aligned assessments at regular intervals throughout the text(s), or as supplements to the primary instructional materials. Aligned assessments may include end-of-chapter quizzes, unit test modules, and practice exams.</p>	2	<p>Each chapter ends with a summary, end-of-chapter test, and communicating activity. Students are encouraged to utilize online content, including a posttest, flash cards, and a specific career field investigation activity, among others.</p>
<p>B. Materials offer ideas and guidance on measuring student progress throughout the duration of the aligned course(s). Formative, interim, and summative assessment strategies are all presented to inform instructional strategy and improvement.</p>	1	<p>Ideas are present for teachers through available printed and online content, but no guidance is present. This lack of teacher guidance is likely because no teacher support materials, like a teacher's edition, was made available to the reviewer.</p>
<p>C. Materials include assessment accommodations for diverse learners, including sample items that capture multiple measures of student proficiency.</p>	0	<p>No accommodations are present in the available materials. Again, no teacher support materials were made available to the reviewer through hands-on printed texts or online content.</p>

Please use the space below to leave any additional notes about Section II not previously captured:

SECTION III (optional): FOCUS AREA

Use this section to capture qualitative observations on an additional area of focus, if presented in the materials. A sample focus area for the Health Informatics program of study is provided in the following. If applicable, fill in the blank table with observations and notes.

III. EXAMPLE: FOCUS IN Health Information Systems	NOTES
A. Materials include coverage of major parameters most frequently reported in health databases.	<i>[Insert reviewer evaluation here.]</i>
B. Materials draw clear connections between policy and procedures and the legal ramifications of health informatics.	<i>[Insert reviewer evaluation here.]</i>
III. FOCUS AREA:	NOTES