

TENNESSEE CAREER AND TECHNICAL EDUCATION TEXTBOOK SCREENING INSTRUMENT
Section II & III Review

Book:	<i>Engineering Design, An Introduction</i>	Publisher:	Cengage
ISBN:	9781111645823	Year:	2013
Levels/Course:	5885 & 5921	Category:	Basal

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY

Materials must meet all non-negotiable criteria in Section I to be aligned to the course standards and receive state approval.

Section II includes additional criteria for alignment to the course standards as well as indicators of quality. Instructional materials evaluated against the criteria in Section II will be rated on the following scale:

- 2** – (meets criteria): A score of 2 means that the materials meet the full intention of the criterion in all grades.
- 1** – (partially meets criteria): A score of 1 means that the materials meet the full intention of the criterion for some grades or meets the criterion in many aspects but not the full intent of the criterion.
- 0** – (does not meet criteria): A score of 0 means that the materials do not meet many aspects of the criterion.

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>Material is aligned with national and/or industry standards. For instance, the section that details technical drawing is relevant to all engineering career fields because these standards are used to communicate design criteria in the engineering industry.</p>

<p>B. Materials are aligned to discipline-specific content or pedagogical frameworks frequently used by professionals in associated industries. For example, Differentiating Instruction 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>	<p>2</p>	<p>Material describes the engineering design process in detail, which is the essential framework from which all other TEE classes are built.</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>	<p>2</p>	<p>The text displays engineering disciplines as they relate to each chapter. This is important information for aspiring engineers to be able to identify potential future career fields.</p>

<p>Section II (2). SEQUENCE AND PROGRESSION OF STANDARDS</p>	<p>SCORE</p>	<p>JUSTIFICATION/NOTES</p>
<p>A. Connections are made within a course between knowledge and skills, where these connections are appropriate and natural, as set forth by the standards.</p>	<p>2</p>	<p>The first half of the book details the engineering design process, which is crucial for the first two years of the program. The second half of the book digs a lot deeper into individual engineering disciplines.</p>
<p>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.</p>	<p>2</p>	<p>The text extends material taught in middle school technology class and builds a deeper understanding of engineering principles.</p>

<p>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.</p>	<p>2</p>	<p>The content addresses all of the course standards as outlined by the state and reinforces these standards multiple times throughout the book.</p>
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<p>Section II (3). TEACHER SUPPORTS</p>	<p>SCORE</p>	<p>JUSTIFICATION/NOTES</p>
<p>A. Materials support teachers in ways such as the following: planning (including ideas for pacing), sample lessons, laboratory applications, projects, vocabulary, and instructional strategies.</p>	<p>2</p>	<p>The material does a great job with vocabulary, practical applications, and potential design activities. Each chapter has a “teachable moments” section that outlines instructional strategies and lesson planning.</p>
<p>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.</p>	<p>2</p>	<p>There are lots of teacher-directed materials that explain activities. There are several problems and activities in every chapter that have solutions worked out for the instructor.</p>
<p>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.</p>	<p>1</p>	<p>The material walks the instructor through detailed topics to be sure the instructor is knowledgeable on the topics. It does not offer avenues for teachers to pursue professional development.</p>

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.	1	The material can be accessed via written text. There are lots of teacher resources presented on digital media.
B. Materials are clear and easy to read for students, teachers, parents. The design and graphics do not distract from the course content and are appropriately placed.	2	There is a plethora of visuals that help describe the content to teachers and students alike.
C. Materials include supports for all learners, e.g., ELs, students who are below grade level, advanced students.	0	No materials were included that offered supports for ESL students or students who are below, or above grade levels. These materials will have to be teacher-developed.
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	Materials appear to be unbiased.

Please note any concerns with sensitivity below: N/A

Section II (5). ASSESSMENTS	SCORE	JUSTIFICATION/NOTES
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.	2	There are several assessments throughout the text to serve as a formative assessment of student learning. There are question banks that help instructor create summative assessments as well.

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.	2	There are rubrics throughout to help assess student learning.
C. Materials include assessment accommodations for diverse learners, including sample items that capture multiple measures of student proficiency.	0	No materials were provided that supplied extra supports or accommodations for diverse learners. These materials will have to be teacher-developed.

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 Agricultural Engineering program of study is provided in the following. If applicable, fill in the blank table with observations and notes.

III. EXAMPLE: FOCUS IN AGRICULTURAL ENGINEERING AND APPLIED TECHNOLOGIES	NOTES
A. Materials include coverage of project planning and management.	[Insert reviewer evaluation here.]
B. Materials draw clear connection between personal and occupational safety.	[Insert reviewer evaluation here.]
C. Materials include coverage of irrigation and drainage and use of geographic information systems (GIS) and global positioning systems (GPS).	[Insert reviewer evaluation here.]
III. FOCUS AREA:	NOTES

Appendix A, Career and Technical Education: Programs of Study by Course