

Reviewer Name: \_\_\_\_\_

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Material Name & NSF #: \_\_\_\_\_

## **Rubrics for Assessing the Quality of ATE Developed Materials**

### **OVERVIEW:**

These rubrics are for the evaluation of materials developed by Advanced Technological Education (ATE) projects and centers. Elements of quality were identified in a literature review and an analysis of the ATE program evaluation issue papers. These quality indicators were summarized and mapped to the rubric categories. There are three types of ratings: specific, holistic and overall.

### **The SPECIFIC RATINGS should be done first.**

- Reviewers are to answer only the set of items related to their expertise, either “industry or content specialist” or “curriculum, instruction, & assessment specialist”.
- Reviewers are asked to answer some yes or no questions, provide a rating of quality and give evidence to support the ratings.

### ***The second set of items is HOLISTIC RATINGS.***

- These are broad and are meant to capture the general quality of the materials.
- These questions are to be answered by all the reviewers.

### ***The third item is an OVERALL RATING.***

- This is a summary assessment of the effectiveness of the materials in helping students learn the knowledge and skills and/or practices needed to be successful in the technical workplace.
- Reviewers are asked to provide both a rating and the evidence to support the rating.
- This question is to be answered by all reviewers.

### ***Rating Scale***

- All items are rated on a five-point scale from 0 to 4.
- Zero means none of the characteristics described in the question are reflected in the materials.
- Four indicates that all of the characteristics described in the question are reflected in the material.
- The NA means “Not Applicable” and DK means “Don’t Know”. These should only be used in rare circumstances.

**THANK YOU FOR YOUR HELP!**

## SPECIFIC RATINGS

INDUSTRY AND CONTENT SECTION (\*\**only* answered by industry or content specialists\*\*)

*Under each Roman numeral, please answer the Yes or No questions first by circling yes or no for each item. They are intended to help you reflect on specific elements of the materials and to help you understand the intent of the rubric question. They are meant to be representative of some important elements but not inclusive of all.*

### I. Alignment of Materials with Workplace

Do the materials reflect accurate industry and professional practices? Yes or No

Do the materials reflect current industry and professional practices? Yes or No

Do the materials reflect anticipated industry and professional practices? Yes or No

Do the materials reflect concepts which are essential to the industry? Yes or No

1. To what extent do the learning objectives align with appropriate industry standards and practices?

NA/DK	0	1	2	3	4
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- 0: Materials *do not* align learning objectives with appropriate industry standards and practices.  
 1: Materials are *weak* at aligning learning objectives with appropriate industry standards/practices.  
 2: Materials are *adequate* at aligning learning objectives with appropriate industry standards/practices.  
 3: Materials are *good* at aligning learning objectives with appropriate industry standards/practices.  
 4: Materials are *excellent* at aligning learning objectives with appropriate industry standards/practices.

**Describe the evidence that supports your rating:**

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### II. Application of Knowledge

Do the materials require students to apply knowledge? Yes or No

Do the materials require students to perform a task? Yes or No

2. To what extent do the materials make students demonstrate the knowledge and skills associated with industry standards and practices?

NA/DK	0	1	2	3	4
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- 0: Materials *do not* demonstrate knowledge and skills associated with industry standards.  
 1: Materials are *weak* at demonstrating knowledge and skills associated with industry standards.  
 2: Materials are *adequate* at demonstrating knowledge and skills associated with industry standards.  
 3: Materials are *good* at demonstrating knowledge and skills associated with industry standards.  
 4: Materials are *excellent* at demonstrating knowledge and skills associated with industry standards.

**Describe the evidence that supports your rating:**

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### III. Realistic Use of Technology

- Do the materials require students to use technology (e.g., tools, equipment, software)? Yes or No
- Do the materials explain why technology or certain equipment is used? Yes or No
- Do the materials require students to fix or troubleshoot equipment? Yes or No
- Do the materials require students to use safety procedures? Yes or No

3. To what extent do the materials use technology? That is, do the materials use technology (e.g., tools, instruments, machines, hardware, software) in the same way as it is actually used in industry practices?

NA/DK	0	1	2	3	4
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- 0: Materials *do not* use technology in a realistic way.
- 1: Materials are *weak* at using technology in a realistic way.
- 2: Materials are *adequate* at using technology in a realistic way.
- 3: Materials are *good* at using technology in a realistic way.
- 4: Materials are *excellent* at using technology in a realistic way.

**Describe the evidence that supports your rating:**

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### IV. Rigorous Content

- Are students required to apply rigorous mathematical concepts in new ways? Yes or No
- Do the materials require the students to solve problems that require understanding of science content? Yes or No
- Do the materials require the students to think critically? Yes or No
- Are students asked to apply technological concepts to their work, e.g., What impact will my work have on individuals, society and the environment? Is there a better way to do this? Yes or No

4. To what extent do the materials require students to learn rigorous content such as higher order thinking skills and in-depth understanding of the science, mathematics, engineering and technological concepts?

NA/DK	0	1	2	3	4
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- 0: Materials *do not* require students to learn rigorous content.
- 1: Materials are *weak* at requiring students to learn rigorous content.
- 2: Materials are *adequate* at requiring students to learn rigorous content.
- 3: Materials are *good* at requiring students to learn rigorous content.
- 4: Materials are *excellent* at requiring students to learn rigorous content.

**Describe the evidence that supports your rating:**

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## V. Quality Performance

Do the materials provide a variety of examples of professional work?

Yes or No

Do the materials contrast high and low quality work?

Yes or No

Do the materials discuss specific quality standards or guidelines?

Yes or No

5. To what extent do the materials help the learner to distinguish the difference between high quality and poor quality performance?

NA/DK	0	1	2	3	4
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0: Materials *do not* distinguish between low quality and high quality performance.

1: Materials are *weak* at distinguishing between low quality and high quality performance.

2: Materials are *adequate* at distinguishing between low quality and high quality performance.

3: Materials are *good* at distinguishing between low quality and high quality performance.

4: Materials are *excellent* at distinguishing between low quality and high quality performance.

**Describe the evidence that supports your rating:**

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## SPECIFIC RATINGS

### CURRICULUM, INSTRUCTION, & ASSESSMENT SECTION

(\*\**only* answered by the curriculum, instruction and assessment specialists\*\*)

*Please answer the Yes or No questions first by circling yes or no for each item. They are intended to help you reflect on specific elements of the materials and to help you understand the intent of the rubric question. They are meant to be representative of some important elements but not inclusive of all.*

#### I. Instructional Strategies

Do the materials suggest how to teach?	Yes or No
Could the materials be used by someone unfamiliar with them?	Yes or No
Do the materials recommend instructional resources?	Yes or No
Do the materials provide any on-going support (e.g., listserv or website)?	Yes or No
Do the materials offer strategies for adapting them to other situations (e.g., grade, student population or content standard)?	Yes or No
Can activities be used by individuals as well as small groups and large groups of students?	Yes or No
Can information be investigated in alternative ways?	Yes or No
Can information be presented in alternative ways?	Yes or No

1. To what extent do the materials support instructional strategies that actively engage all learners?

NA/DK	0	1	2	3	4
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0: Materials *do not* support effective instructional strategies that actively engage all learners.

1: Materials are *weak* at supporting effective instructional strategies that actively engage all learners.

2: Materials are *adequate* at supporting effective instructional strategies that actively engage all learners.

3: Materials are *good* at supporting effective instructional strategies that actively engage all learners.

4: Materials are *excellent* at supporting effective instructional strategies that actively engage all learners.

**Describe the evidence that supports your rating:**

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#### II. Problem Solving

Are students required to recognize particular types of problems?	Yes or No
Do the materials contain activities that require students to perform multiple steps before arriving at a solution?	Yes or No
Do the materials contain activities that require students to collect information or data before making a decision?	Yes or No
Are there activities that require students to consider constraints, risks, or alternatives before making a decision?	Yes or No

2. To what extent do the materials develop problem solving and critical thinking skills? That is, do the materials encourage students to learn how to approach problems, to think both creatively and analytically, and to make knowledge based decisions?

NA/DK	0	1	2	3	4
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- 0: Materials *do not* develop problem solving and critical thinking skills.  
 1: Materials are *weak* at developing problem solving and critical thinking skills.  
 2: Materials are *adequate* at developing problem solving and critical thinking skills.  
 3: Materials are *good* at developing problem solving and critical thinking skills.  
 4: Materials are *excellent* at developing problem solving and critical thinking skills.

**Describe the evidence that supports your rating:**

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### III. Integration of General Education Content

*Do the materials require students to locate, understand and interpret written information in professional documents, manuals, web sites or books?* Yes or No

*Are students required to communicate technical concepts verbally, in writing or in visual aides such as charts or graphs?* Yes or No

4. To what extent do the materials integrate general education skills such as English, technology, and written and oral communication?

NA/DK	0	1	2	3	4
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- 0: Materials *do not* integrate general education skills.  
 1: Materials are *weak* at integrating general education skills.  
 2: Materials are *adequate* at integrating general education skills.  
 3: Materials are *good* at integrating general education skills.  
 4: Materials are *excellent* at integrating general education skills.

**Describe the evidence that supports your rating:**

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### IV. Assessment

*Are the assessments closely aligned with the learning objectives?* Yes or No

*Do the required activities and assessments have more than one correct answer?* Yes or No

*Do the assessments provide feedback to the student and an opportunity to improve performance?* Yes or No

*Do the assessments integrate specific professional or industry skills?* Yes or No

*Do the assessments allow students to demonstrate their understanding and abilities in different ways?* Yes or No

*Do the assessments have activities that use real world situations?* Yes or No

*Do the assessments provide feedback to the instructor that could be used to improve the materials?* Yes or No

4. To what extent do the assessments or required activities measure the adequacy of the student's knowledge and skills required in the workplace?

NA/DK	0	1	2	3	4
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- 0: The assessments do not measure the knowledge and skills required in the workplace.  
 1: Assessments are *weak* at measuring the knowledge and skills required in the workplace.  
 2: Assessments are *adequate* at measuring the knowledge and skills required in the workplace.  
 3: Assessments are *good* at measuring the knowledge and skills required in the workplace.  
 4: Assessments are *excellent* at measuring the knowledge and skills required in the workplace.

**Describe the evidence that supports your rating:**

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## V. Personal Qualities

- Do the materials require students to coordinate their efforts with others?* Yes or No  
*Are there activities or assessments that require students to meet deadlines?* Yes or No  
*Are there opportunities for students to demonstrate individual responsibility?* Yes or No  
*Do the materials contain activities that require students to manage their own behaviors?* Yes or No  
*Do the materials contain activities that require students to set their own levels of personal performance?* Yes or No

5. How well do the materials develop personal qualities required for professional employment? These might include character traits, behaviors and attitudes that are needed for personal growth and professional development such as responsibility, self-management and integrity.

NA/DK	0	1	2	3	4
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- 0: Materials *do not* develop personal qualities needed for professional employment.  
 1: Materials are *weak* at developing personal qualities needed for professional employment.  
 2: Materials are *adequate* at developing personal qualities needed for professional employment.  
 3: Materials are *good* at developing personal qualities needed for professional employment.  
 4: Materials are *excellent* at developing personal qualities needed for professional employment.

**Describe the evidence that supports your rating:**

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## VI. Diversity

Do the materials include examples from a variety of types of workplaces and settings? *Yes or No*

Do the materials encourage students to understand how to work with people from different backgrounds? *Yes or No*

Do the materials reflect the growing diversity of the workforce? *Yes or No*

Do the materials include references that broaden the students' awareness of different cultural and socioeconomic groups? *Yes or No*

6. To what extent do the materials reflect the experiences and perspectives of different cultural and socioeconomic groups?

NA/DK	0	1	2	3	4
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0: Materials *do not* reflect perspectives of different cultural and socioeconomic groups.

1: Materials are *weak* at reflecting perspectives of different cultural and socioeconomic groups.

2: Materials are *adequate* at reflecting perspectives of different cultural and socioeconomic groups.

3: Materials are *good* at reflecting perspectives of different cultural and socioeconomic groups.

4: Materials are *excellent* at reflecting perspectives of different cultural and socioeconomic groups.

**Describe the evidence that supports your rating:**

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Material Name & NSF#: \_\_\_\_\_

Group Reviewer's Names: \_\_\_\_\_

## HOLISTIC RATINGS (\*\*answered by *all* reviewers\*\*)

- 1. Industry Standards & Practices:** Materials should clearly reflect learning objectives that are based on current business, industry and technology standards and practices.

Linked: Industry & Content rubrics 1, 2, 3, 4 & 5

NA/DK	0	1	2	3	4
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- 0: The materials *do not* reflect any industry standards and practices.  
 1: The materials are *weak* at reflecting industry standards and practices.  
 2: The materials are *adequate* at reflecting industry standards and practices.  
 3: The materials are *good* at reflecting industry standards and practices.  
 4: The materials are *excellent* at reflecting industry standards and practices.

- 2. Real World Curriculum:** Materials should engage learners in ways to help them understand the reality of the profession they seek. Instruction should be related to workplace needs. Materials should use tasks that are real activities that people perform while “on the job”.

Linked: Industry & Content rubrics 1, 2, 3 & 5  
 Curriculum, Instruction, & Assessment rubrics 1 & 4

NA/DK	0	1	2	3	4
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- 0: The materials *do not* engage the learner in real world tasks.  
 1: The materials are *weak* at engaging the learner in real world tasks.  
 2: The materials are *adequate* at engaging the learner in real world tasks.  
 3: The materials are *good* at engaging the learner in real world tasks.  
 4: The materials are *excellent* at engaging the learner in real world tasks.

- 3. Workplace Competencies:** How well do the materials enable students to develop the high performance skills needed to succeed in a high performance workplace? The Secretary's Commission on Achieving Necessary Skills (SCANS) was appointed by the Secretary of Labor to determine the skills people need to succeed in the world of work. According to the SCANS Report high performance workers need a solid foundation in basic literacy (reading, writing, listening and speaking), computational skills, applying technology, and understanding social organizational and technological systems. They also need thinking skills to put knowledge and resources to work and the personal qualities that make them dedicated, reliable and able to work with others.

Linked: Industry & Content rubrics 3, 4 & 5  
Curriculum, Instruction, & Assessment rubrics 2, 3, 4, & 5

NA/DK	0	1	2	3	4
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- 0: The materials *do not* develop workplace skills.  
 1: The materials are *weak* at developing workplace skills.  
 2: The materials are *adequate* at developing workplace skills.  
 3: The materials are *good* at developing workplace skills.  
 4: The materials are *excellent* at developing workplace skills.

- 4. Access to In Depth Understanding:** How well do the materials allow all learners to acquire in depth understanding? Such practices include instructional strategies that actively engage students and allow them to learn in ways consistent with their preferences. The materials also require students to synthesize, generalize and evaluate information and to develop complex understandings of the content by exploring connections and relationships. In addition, materials that allow access to in-depth understanding are also well organized, easy to follow and contain assessments and activities that are aligned with the content.

Linked: Curriculum, Instruction, & Assessment rubrics 1, 2, 3, 4, 5 & 6

NA/DK	0	1	2	3	4
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- 0: The materials *do not* support in depth understanding.  
 1: The materials are *weak* at supporting in depth understanding.  
 2: The materials are *adequate* at supporting in depth understanding.  
 3: The materials are *good* at supporting in depth understanding.  
 4: The materials are *excellent* at supporting in depth understanding.

**OVERALL RATINGS** (\*\*answered by all reviewers\*\*)

Please rate the effectiveness of the materials in having students learn the knowledge and skills or practices needed to be successful in the technical workplace. Select the description that best characterizes your overall assessment. *This rating is not intended to be an average of all the previous ratings, but your overall judgment of quality and likely impact of the materials. Please describe the evidence that supports your rating in the space provided.*

To what extent will the materials help students learn the knowledge and skills or practices needed to be successful in the technical workplace?

NA/DK	0	1	2	3	4
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- 0: The materials *will not* help students learn knowledge and skills or practices needed to be successful in the technical workplace.
- 1: The materials *will be weak* at helping students learn knowledge and skills or practices needed to be successful in the technical workplace.
- 2: The materials *will be adequate* at helping students learn knowledge and skills or practices needed to be successful in the technical workplace.
- 3: The materials *will be good* at helping students learn knowledge and skills or practices needed to be successful in the technical workplace.
- 4: The materials *will be excellent* at helping students learn knowledge and skills or practices needed to be successful in the technical workplace.

**Describe the evidence that supports your rating:**

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