** Content Expert Report**

**Technology and Engineering Education**

**(05-24)**

Education Standards and Practices Board

**Program report status** (check one)**:**

**Initial review  Continuing Review  Focus Visit**

|  |  |
| --- | --- |
| **Name of Content Expert:** |  |
| **Content Expert Telephone:** |  |
| **Content Expert Email:** |  |
| **Date Submitted:** |  |
| **Institution Being Evaluated:** |  |
| **Program Being Evaluated:** |  |
| **Degree:** |  |
| **Grade Level(s):** |  |

**Is this program offered at more than one site?**  **Yes**  **No**

If yes, list sites where the program is offered:

**Summary of Recommendations**

After completing your review, for each sub-standard listed below, place a check under the column that matches your decision.

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** | **Met** | **Met With Weakness** | **Not Met** |
| **10007.1** |  |  |  |
| **10007.2** |  |  |  |
| **10007.3** |  |  |  |
| **10007.4** |  |  |  |
| **10007.5** |  |  |  |
| **10007.6** |  |  |  |
| **10007.7** |  |  |  |
| **10007.8** |  |  |  |
| **10007.9** |  |  |  |
| **10007.10** |  |  |  |

**Technology and Engineering Education**

**Directions:** Please read the Content Area Report (CAR) supplied by the institution.

1. Review program’s response to Section II.1 Areas of Weakness from Prior Review. For each standard in which there was a weakness from the prior review, make a recommendation as to whether that weakness should be removed or retained. If it is to be retained provide a rationale for retaining it in Part I.B. If it has been partially but not fully addressed restate the weakness in Part I. C and provide a rationale.
2. Make a recommendation for each program standard as to whether it has been met, met with weakness, or not met based on the evidence provided. For any standard “met with weakness” or “not met” identify the weakness(es) and provide a rationale.

**Part I: Areas of Weakness from Prior Review \*\*\***

**XXXXX.X** *Write the standard and the original weakness here.*

A. **Content Expert Decision**: Should the weakness be removed, retained, or restated and retained? Check one only.

     Weakness Should Be Removed      Weakness Should Be Retained

     Restated Weakness

B. **For Decisions of “Weakness Should Be Retained”:** Provide a rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Rationale:**

C. **For Decisions of “Restated Weakness”:** Write the new language for the weakness. Provide a rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

1. **Restated Weakness:**

ii. **Rationale:**

***\*\*\*Note: This template can be copied and pasted into the document multiple times when more than one area of weakness was cited in a prior review.***

**Part II Program Standard Recommendations**

**10007.1** **Nature and Characteristics of Technology and Engineering**

Key Ideas

* Knowledge of Nature World and Human-Made World
* Interdisciplinary Study of STEM
* Technological Literacy – Understand, Use, Assess, and Create

A. **Content Expert Decision**: Is the program standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**10007.2** **Core Concepts of Technology and Engineering**

Key Ideas

* Systems Thinking – Parts and components working together to complete task (function)
* Sequential – Systematic sequence of parts working together to produce an output
* Universal Systems Model – Input, Process, Output, Feedback
* Resources – Tools/Machines, Materials, Capital, Money, Expertise, Energy, Time, People
* Controls for the System to act a certain way

A. **Content Expert Decision**: Is the sub-standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**10007.3 Design Integration of Knowledge, Technologies, and Practices**

Key Ideas

* Technology and Engineering are related
* Technology and Engineering impact other fields of study and advance them
* Technology and Engineering are impacted by other fields of study & advanced by them

A. **Content Expert Decision**: Is the sub-standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**10007.4 Impacts of Technology**

Key Ideas

* Technology and Engineering have positive and negative impacts on society/environment
* Decisions must consider costs, benefits, and tradeoffs
* Sustainability – Sustainable use of renewable and non-renewable resources
* Requires appropriate handling of waste
* Aware that technology can fundamentally change individuals, cultures, & environment

A. **Content Expert Decision**: Is the sub-standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**10007.5** **Influence of Society on Technological Development**

Key Ideas

* Societal needs and wants shape technology more than individuals
* Values and beliefs of society shape attitudes toward technology
* Societies vary in technological needs – advances versus developing

A. **Content Expert Decision**: Is the sub-standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**10007.6 History of Technology**

Key Ideas

* Technological knowledge accelerated during Renaissance and Industrial Revolution
* History eras are defined by technological advancements
* Studying technological history chronicles how humans have steered the world today

A. **Content Expert Decision**: Is the sub-standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**10007.7** **Design in Technology and Engineering Education**

Key Ideas

* Design is a distinctly human process, and it is purposeful and open ended and has many approaches
* Design is a creative process with no single correct solution – iterate and improve
* Design requires 21st century skills i.e. comm, creativity, collaboration etc.
* Design has universal principles and elements i.e. shape, form, reliability, durability etc.
* Design requires making skills i.e. hand and power tools, measuring, drawing etc.
* Design optimization is governed by criteria and constraints and results in tradeoffs

A. **Content Expert Decision**: Is the sub-standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**10007.8** **Applying, Maintaining, and Assessing Technological Products and Systems**

Key Ideas

* Technologically literate people are better equipped to learn and use technology
* Maintenance of Tech System keeps product in proper working order
* Maintenance of Tech Systems reduces malfunctions
* Repairs on Technology products and systems is necessary at times (replacement as well)
* Assessing a Technology product requires troubleshooting and learning new abilities

A. **Content Expert Decision**: Is the sub-standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**10007.9 Instructional Strategies The program requires using a variety of effective teaching practices that enhance and extend learning of technology.**

A. **Content Expert Decision**: Is the sub-standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**10007.10 Learning Environments The program requires designing, creating, and managing learning environments that promote technological literacy.**

A. **Content Expert Decision**: Is the sub-standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**10007.11 Students The program requires understanding students as learners, and how commonality and diversity affect learning..**

A. **Content Expert Decision**: Is the sub-standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**10007.12 Professional Growth The program requires understanding and valuing the importance of engaging in comprehensive and sustained professional growth to improve the teaching of technology.**

A. **Content Expert Decision**: Is the sub-standard met, met with weakness, or not met?

     Met       Met with Weakness      Not Met

B. **For Decisions of “Met with Weakness” or “Not Met”:** Describe the specific weakness identified and the rationale for the decision. This information will guide the institution to provide additional information in their rejoinder, or be used to determine stipulations for the institution to address by the time the next visit occurs.

i. **Weaknesses:**

ii. **Rationale:**

**Curriculum Exhibit Form SFN 14381 (or status sheet):** This form or status sheet provides the opportunity for institutions to document the entire program including general studies, teaching specialty, and professional education. This form is used to document each student transcript that applies for teacher licensure. Please review this form to make sure all of the courses listed above for each sub-standard are listed as a “**Requirement”. If a course is missing or is not a required course, please list below:**

**Content Expert Review of Standard and recommendation to State Board of Examiner (BOE) Team for the Site Visit:** The content expert provides an initial review of the program standard and provides a recommendation to the CAEP/State Board of Examiners for the onsite review. **What additional information should the CAEP/ESPB Team research on-site during the visit?**

This report will be electronically forwarded to the CAEP/State Board of Examiners nine months prior to the scheduled program review visit. If you have any questions or concerns, please contact the Education Standards and Practices Board Executive Director at (701) 328-9646.

**Thank you for taking the time from your busy schedule to help document that our North Dakota institutions of higher education have prepared our teachers for the best possible education for all North Dakota students.**