**Transcript Review Worksheet**

5440 - 10 – Design and Technology Education

The holder is authorized to teach design and technology education in grades 5-12.

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Educator ID#: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

[ ]  **Add Endorsement** [ ]  **Course Audit**

Please note that the transcript review worksheets indicate only the endorsement competencies that must be met. There may be additional jurisdictional requirements.

For a full list of requirements, please consult the [Rules Governing the Licensing of Educators](https://education.vermont.gov/documents/educator-quality-licensing-rules)

| Content Topic | College/University | **Course****Number** | **# of Credits** | **Course** **Title** |
| --- | --- | --- | --- | --- |
| **Knowledge:** The educator will develop students’ technological thinking and problem solving and promote critical thinking and analysis through innovation, creation, collaboration, sustainability, and emerging technologies. The educator will work to develop students’ focus on precision, technology, design, and application through selection and use of the proper tools. |  |  |  |  |
| * 1. The educator demonstrates knowledge of the following spheres of design and technology education:
 |  |  |  |  |
|  1.1.1. The Nature of Technology  |  |  |  |  |
|  1.1.2. Technology and Society  |  |  |  |  |
|  1.1.3. Design  |  |  |  |  |
|  1.1.4. Abilities for a Technological World  |  |  |  |  |
|  1.1.5. The Designed World  |  |  |  |  |
| 1.2. The educator will focus on applications and habits of mind in design thinking, engineering processes, developing solutions to problems, the evolution of technology, integration and collaboration of STEAM (science, technology, engineering, arts, and mathematics).  |  |  |  |  |
| 1.3. The educator will demonstrate ethical use and application of various technologies through social, economic, cultural, and political roles.  |  |  |  |  |
| 1.4. In addition to meeting proficiency in the core areas of Engineering Design and Application and STEAM Applications, the candidate will demonstrate competency in a minimum of 3 other areas of focus:  |  |  |  |  |
| 1.4.1. Energy, Power and Transportation  |  |  |  |  |
| 1.4.2. Communication  |  |  |  |  |
| 1.4.3. Invention & Innovation in Manufacturing  |  |  |  |  |
| 1.4.4. Architecture and Construction  |  |  |  |  |
| 1.4.5. Biotechnologies  |  |  |  |  |
| 1.4.6. New & Emerging Technologies  |  |  |  |  |
| 1.4.7. Universal engineering principles and design  |  |  |  |  |
| 1.5. The educator will promote the effective and safe use of tools and machines, proper uses and purposeful applications of a variety of natural and synthetic materials and their appropriate application in the above areas to support students in the design and fabrication of artifacts to demonstrate knowledge and learning in identified areas.  |  |  |  |  |
| **Performance:** The educator implements an inquiry-based technology education curriculum that integrates technology and STEAM concepts, problem solving skills, and content. Furthermore, the educator facilitates development of the habits of mind that support technological inquiry. The educator: |  |  |  |  |
| 2.1. Designs and implements investigations and assessments that engage students in problem solving activities exploring the core concepts of technology in which they design and construct models, test through simulations and perform analyses that demonstrates solutions to particular problems. (Corresponds to ITEEA Content Standards for Technological Literacy (STL) 2, 8, 9. 10) |  |  |  |  |
| 2.2. Models the skills and attitudes of technological problem solving by formulating meaningful questions. (STL 10)  |  |  |  |  |
| 2.3. Teaches students how to be responsible consumers of technology, including understanding the positive and negative consequences of individual and societal choices. (STL 5, 13)  |  |  |  |  |
| 2.4. Creates opportunities for students to develop and demonstrate leadership, communication, and teamwork skills by working collaboratively to design solutions and to present and discuss them with a variety of audiences. (STL 6, 11)  |  |  |  |  |
| 2.5. Integrates physical, mathematical, scientific, and technological tools inventions and innovations (e.g. laser engravers, CNC, rapid prototyping technologies, and design software) appropriate to students’ ages and abilities and facilitate technological inquiry and problem solving concepts. (STL 12, 13)  |  |  |  |  |
| 2.6. Conveys to students how the development of technology and technological theory and understanding is a historical process with continuous creation of new knowledge and refinement or rejection of “old” knowledge through project-based learning. (STL 7, 10)  |  |  |  |  |
| 2.7. Designs and implements investigations and assessments that engage students in experimental design, data collection, data analysis, and problem solving, and that provide them with frequent interactions with the natural world as a regular part of the Design and Technology program. (STL 1, 3, 10, 13)  |  |  |  |  |
| 2.8. Conveys to students the application of STEAM, incorporating the roles and responsibilities of scientists, engineers, and mathematicians with respect to social, economic, cultural and political systems. Provides students with opportunities to actively explore the full scope of career choices available to people in the field of technology. (STL 3, 4, 5, 6, 7) |  |  |  |  |
| 2.9. Demonstrates sensitivity to inequities in design technology education teaching and careers by incorporating specific instructional strategies that promote equity and responsibility across all technological areas. (STL 3, 4, 5, 6, 7)  |  |  |  |  |
| 2.10. Assists student in identifying complex real world problems and evaluating solutions based on prioritized criteria and trade-offs that include cost, safety, reliability, and aesthetics and model social, cultural, and environmental impacts of solutions. (STL 4, 5, 6, 7, 11)  |  |  |  |  |
| 2.11. Organizes equipment, work, and learning spaces so that project-based learning is carried out safely and in accordance with state and national safety guidelines.  |  |  |  |  |
| **Additional Requirements:** |  |  |  |  |
| A practicum in a school, community, or work-based setting that applies the design and engineering processes to solve a problem, including the manipulation of materials to make and test a prototype. |  |  |  |  |
| A minimum of a bachelor’s degree in an area related to Design and Technology Education |  |  |  |  |