south dakota
DEPARTMENT OF EDUCATION
Learning. Leadership. Service.

CTE Standards Unpacking
Production Technology

Course: Production Technology
Course Description: Production Technology introduces the student to the fundamental elements and principles of technical productions through applied learning that makes use of production facilities, operations, methods, and technologies used in professional, amateur, and educational theaters and production studios. The course includes a brief history of technical theatre and broadcast media. Students will learn the functions of the creative team, production staff, technicians and stage crew. Basic elements of scenic construction, design concepts, theatrical lighting, sound technologies, and production management will be introduced and assessed through practical application.
Career Cluster: Arts, A/V Technology, Communications
Prerequisites: Recommended prerequisite courses: Intro to Arts, AV Tech & Communication
Program of Study Application: Production Technology is a level II course in the Arts, A/V Technology & Communications career cluster. Production Technology pertains to all four career pathways: Printing Technology/Journalism and Broadcasting; Telecommunications/A-V Technology and Film; Visual Arts; and Performance Arts.

INDICATOR #PT 1: **Identify the components of the performance space and potential safety hazards**

SUB-INDICATOR 1.1 (Webb Level: 1 Recall): Explore, label, and define usage of all areas adjacent to the stage and within the performance space.

SUB-INDICATOR 1.2 (Webb Level: 1 Recall): Identify all areas and equipment in a performance area that have potential to cause harm.

Knowledge (Factual):	Understand (Conceptual):	Do (Application):
-Stage and performance space -Potential dangers in a performance space	-Stage spatial awareness relationship to safe and efficient use of space. -How common identification impacts ease of use.	-Recognize and explain terminology to define the space. -Demonstrate how to properly secure lighting fixtures. -Demonstrate proper coiling and storage of cables.

Benchmarks:
Students will be assessed on their ability to:
- Create a scale model of the space and label it.
- Identify and explain safety precautions present in the theatre.
- Compare and contrast a famous theatre fire with present day fire codes.

Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**

INDICATOR #PT 2: **Examine applications of past and present forms of technology in performing arts**		
SUB-INDICATOR 2.1 (Webb Level: 3 Strategic Thinking): Compare and contrast historical and contemporary performance spaces		
SUB-INDICATOR 2.2 (Webb Level: 2 Skill/Concept): Identify and define the properties of different performance spaces		
Knowledge (Factual): -Technological changes over the history of stage production. -Performance areas	**Understand (Conceptual):** -Stage design modelling principles. -How stage and set design influence performance and audience experience. -Evolution of performance spaces. -How performance areas impact suitability for different presentations.	**Do (Application):** -Survey local performance venues and explain design function. -Create a chart of performance spaces. -Evaluate the impact of historical cultural and societal trends on performance venues of different time periods.

Benchmarks:
Students will be assessed on their ability to:
- Create a PowerPoint or other visual presentation comparing performance spaces.
- Explain the desired intent of Amphitheatre, thrust stage, arena stage and black box spaces.
- Analyze YouTube or other online videos, which show technical performance spaces.

Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**

INDICATOR #PT 3: Describe career possibilities in technical production

SUB-INDICATOR 3.1 (Webb Level: 2 Skill/Concept): Research job titles and duties for technical personnel.

SUB-INDICATOR 3.2 (Webb Level: 2 Skill/Concept): Demonstrate and practice basic crew functions

Knowledge (Factual):	Understand (Conceptual):	Do (Application):
-Requirements for careers. -Production technology various avenues for employment.	-How crew members function as a unit. -Areas of responsibility and job skills of technical positions.	-Shadow a working production technical crew. -Categorize various duties of broadcast studio technical crews.

Benchmarks:
Students will be assessed on their ability to:
- Explain protocols for responding to other leaders on the technical team.
- Demonstrate proper handling of stage lighting and electrical cables.
- Create hypothetical performance conditions and how to respond properly.
- Role play all technical positions for peer critique.

Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	Sample Performance Task Aligned to the Academic Standard(s):

INDICATOR #PT 4: Analyze scripts collaboratively with production crew for understanding of performance design and technical needs
SUB-INDICATOR 4.1 (Webb Level: 2 Skill/Concept): Identify specific cues for sound, lighting, and set derived from action or dialogue in the text
SUB-INDICATOR 4.2 (Webb Level: 3 Strategic Thinking): Determine choices of production color and style which reflect intended mood, environment, and era

Knowledge (Factual):	Understand (Conceptual):	Do (Application):
-Construction styles. -Lighting fundamentals -Scripts	-Importance of looking at historical images to determine accurate era representation. -Purpose of standardized cues for transition effects in shows. -How scripts impact	-Analyze writing for perceived changes in mood. -Research suggested era for correct color and construction design.

technical need outcomes.

-Lighting gels affect mood.

Benchmarks:
Students will be assessed on their ability to:
- Highlight and demonstrate existing cues within stage directions.
- Identify and explain symbolism of color and the impact it has on mood and tone.

Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**

INDICATOR #PT 5: **Plan scenic elements and set construction**

SUB-INDICATOR 5.1 (Webb Level: 1 Recall): Identify industry terminology for scene design and construction

SUB-INDICATOR 5.2 (Webb Level: 3 Strategic Thinking): Design and create a floor plan for a specific production

SUB-INDICATOR 5.3 (Webb Level: 2 Skill/Concept): Demonstrate safety procedures for operation, maintenance, and storage of set construction items and tools

Knowledge (Factual):	Understand (Conceptual):	Do (Application):
-Floor plan design. -Safety procedures.	-How production needs influence floor plans. -How to design and create a production plan. -Importance of safety procedures.	-Classify basic terminology (e.g. unit set, box set, flat, platform, props). -Justify reasoning behind safety procedures. -Safely operate power tools. -Design a production floor plan.

Benchmarks:

Students will be assessed on their ability to:
- Analyze and interpret floor plans, elevations and renderings of sample set designs
- Create an original floor plan and translate it to the stage/studio floor (spike the plan).
- Prepare a sketch of a floor plan to meet expectations.

Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**

INDICATOR #CE 6: **Construct various elements of set according to industry standards**
SUB-INDICATOR 6.1 (Webb Level: 3 Strategic Thinking): Evaluate the function and application of framed scenery and build suitable set pieces
SUB-INDICATOR 6.2 (Webb Level: 3 Strategic Thinking): Design and construct weight-bearing scenic units
SUB-INDICATOR 6.3 (Webb Level: 2 Skill/Concept): Apply knowledge of installation and rigging techniques to securely join set pieces
SUB-INDICATOR 6.4 (Webb Level: 2 Skill/Concept): Demonstrate various elements of scenic art

Knowledge (Factual):	**Understand (Conceptual):**	**Do (Application):**
-Materials used in set design. -Set design building techniques. -Scenic art elements.	-Space allotment for set design. -Set performance needs. -Installation and rigging techniques. -Safety of proper building techniques. -How scenic art elements influence outcomes. -Mathematical concepts used in design.	-Build a scale model muslin flat. -Design platform suitable for elevated stage. -Demonstrate joining techniques for traditional flats (e.g. stiffening, bracing, rope rigging). -Demonstrate scene shifting techniques (e.g. shifting on the deck and rigging to fly). -Research and exhibit period-specific set

	dressing methods.

Benchmarks:

Students will be assessed on their ability to:

- Present scene-painting techniques (e.g. dry-brushing, splattering, distressing, sponge).
- Create 3-dimensional pieces and props (e.g. doors, windows, rocks, columns, trees) for evaluation.
- Design and construct studio flats, door and window flats, hard-covered flats.

Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**
G-MG3.Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).	-Compute the rise and run for stair stringers to be used onstage.

INDICATOR #PT 7: **Design practical applications for lighting and sound**
SUB-INDICATOR 7.1 (Webb Level: 1 Recall): Identify and recall names of common lighting instruments
SUB-INDICATOR 7.2 (Webb Level: 3 Strategic Thinking): Design lighting plot for screenplay or script
SUB-INDICATOR 7.3 (Webb Level: 2 Skill/Concept): Demonstrate proper procedure for hanging and focusing lighting instruments
SUB-INDICATOR 7.4 (Webb Level: 3 Strategic Thinking): Develop sound design for production
SUB-INDICATOR 7.5 (Webb Level: 2 Skill/Concept): Observe and apply knowledge of sound and light board operation

Knowledge (Factual):	**Understand (Conceptual):**	**Do (Application):**

-Technical theatre light and sound components. -Lighting plot and sound designs. -Hardware and software involved in lighting and sound operations.	-How lighting affects mood and overall appearance. -Proper and safe installation of lighting components. -Interactions between stage and technical crews.	Recognize types and functions of lights used in school performance areas -Observe and discuss recorded interview with professional lighting designer. -Using proper safety techniques, hang lights according to plot. -Experiment with lighting gels to create intended mood for scene. -Observe and discuss recorded interview with professional sound designer.

Benchmarks:
Students will be assessed on their ability to:
- Program multi-scene light plot to meet guidelines.
- Create a narrative using music excerpts and sound effects for a presentation.
- Create and execute original lighting look based on previously analyzed script.
- Plot for production needs and demonstrate sound board on/off, channel, sub and component functions.
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Academic Connections	
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	**Sample Performance Task Aligned to the Academic Standard(s):**

Additional Resources
http://www.onstagelighting.co.uk/stage-lighting-guides-help/
http://www.vls.com/lighting-101

https://www.aact.org/set-designer
http://www.newscaststudio.com/setstudio/
http://www.jeadigitalmedia.org/2012/08/15/starting-a-broadcast-journalism-program-from-scratch-where-to-begin/
http://www.jeadigitalmedia.org/guide-to-broadcast-video/
http://www.svnfilm.com/resources/general-content/101-set-construction.html
The Stagecraft Handbook, by Daniel A. Ionazzi