

Glendale Unified School District

Middle School

November 15, 2022

Department: Career Technical Education

Course Title: Animatronics I (AniMakerSpace)

Course Code: 9032GV2/9033GV2

Grade Level(s): 7-8

School(s)
Course Offered: Roosevelt Middle School

UC/CSU Approved
(Y/N, Subject): N/A

Course Credits: 10

Recommended
Prerequisite: None

Recommended
Textbook: None

Course Overview: Animatronics I (AniMakerSpace) is a course for students interested in technology, design, and fabrication. Students will leverage the opportunities and capabilities of the AniMakerspace to explore careers across the STEAM and creative industries, including, but not limited: Art, Media & Entertainment; Manufacturing and Product Development; Fashion & Interior Design; and Engineering & Architecture.

Course Content

- A. Students will engage in hands-on, project-based learning that emphasizes the 21st century learning skills of communication, collaboration, creativity, critical thinking, and problem solving. Students will practice and enhance their skills. Possible assessments to include, but not limited to: Direct observation, Reflection prompts, Student digital portfolio, Design Challenges, Iterative process involving a cycle of feedback from teachers and/or peers, Animatronic Project.

- B. Projects will include opportunities for students to practice and enhance the skills and understandings developed in other Common Core content areas, as well as utilize student choice to allow for personal interests, talents, and passions to be discovered and pursued.

First Semester

Unit 1: Introduction to 2D Graphic Design

(3 weeks)

STANDARDS

Engineering Design CTE Pathway 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0

- A. Students will demonstrate basic proficiency with graphic design software. Students will know which colors/line thickness for all types of use. Students will know how to export and print to digital printers.
 - a. Introduction to 2D design via graphic design software.
 - b. Introduction to digital printers.
- B. Students will design 2D art projects, which will then lead to a 3D project. Design instructions and grading considerations will be given to the students ahead of time. Students learn about the role of 2D printing in additive manufacturing industries.

Unit 2: Introduction to 3D Design & 3D Printing

(7 weeks)

STANDARDS

Engineering Design CTE Pathway 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0

- A. Students will be able to design basic objects using an introductory 3D program. Students will be able to export and print basic 3D objects using 3D print software.
 - a. Introduction to 3D printing. Create new objects by grouping both solid and hole shapes.
 - b. Dimension, scale and orient objects for efficient printing.
 - c. Export files and using 3D print Software
 - d. What file to export
 - e. Build plate management
 - f. Custom settings
 - g. Cleaning and calibration of printer
- B. Students will design a 3D bookmark that can be sliced in-between the pages of a book, or be used to hold several pages together like a paperclip via given criteria and constraints. Design instructions and grading considerations will be given to the students ahead of time. Students learn about the role of 3D printing in additive manufacturing industries.

Unit 3: Introduction to Figure Finishing

(7 weeks)

STANDARDS

CTE Fashion Design and Merchandising Pathway 4.0, 5.0, 6.0, 7.0, 8.0

- A. Students will become familiar with the concept of patterning, fashion design and demonstrate basic proficiency in hand sewing.
 - a. Pattern creation
 - b. Manual Patterning: Trace and hand cut
 - c. Digital Patterning: Trace using graphic design software and laser cut

- B. Students move from learning about patterning and sewing techniques to applying patterning and sewing skills to complex projects. Hand-sewn artifacts and costumes, assessed via rubric.

Second Semester

Unit 4: Introduction to Animatronics & Show Programming

(19 weeks)

STANDARDS

CTE Performing Arts Pathway 3.0, 5.0, 6.0, 7.0, 8.0

Engineering Design CTE Pathway 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0

CTE Fashion Design and Merchandising Pathway 4.0, 5.0, 6.0, 7.0, 8.0

- A. Students will develop a character and theme that tells an entertaining and informative story. Students will demonstrate basic proficiency in show programming software and technologies. Students will demonstrate basic proficiency in artistic design and costuming by designing and creating a character. Students will demonstrate basic proficiency in set design by designing and creating a set and props. The course will allow students to work in the following areas: Concept Design, Script writing, Storyboarding, Show Programming, Audio recording and editing, Motion programming, Lighting, Figure Finishing, Costuming, Hair and Makeup, Vacuum Forming, Set Design, Background, Props

- B. Students create complex characters to tell an informative and entertaining story via an animatronic figure. Student showcase of animatronic shows, assessed via rubric.