ARCHITECTURE	
CURRICULUM/CONTENT AREA	**COURSE LENGTH**
Applied & Technical Education (ATE)	*9 weeks*
GRADE LEVEL	**DATE LAST REVIEWED**
9 - 12	*2022*
PREREQUISITE(s) ***if applicable***	**BOARD APPROVAL DATE**
None	*11/15/2022*
PRIMARY RESOURCE ***if applicable***	

DESIRED RESULTS

COURSE DESCRIPTION AND PURPOSE

This architecture course is a comprehensive look at the field of architecture. Students will study topics including sketching and drawing, computer 3D modeling, residential architectural styles, architectural history, building and zoning codes and architectural design principles. This class is for anyone interested in residential building and construction, espically those interested in pursuing a career in architecture, landscape architecture, architectural engineering, civil engineering, interior design, surveying and more.

ENDURING UNDERSTANDINGS *Students will understand that...*	**ESSENTIAL QUESTIONS** *Students will keep considering...*
Creativity, innovation, and critical thinking are essential for success in a technologically advanced world.	Why is creativity and innovation important? How is creativity and innovation used in [name of career pathway?
	How do teams efficiently and effectively solve problems in an increasingly complex world?
	What strategies and processes can I use to become a more effective creator, thinker and problem solver?
The ability to communicate and collaborate with people with diverse backgrounds and perspectives is key to participation in a global economic society.	Why is communication and collaboration important? How do positive work behaviors and personal qualities impact communication and collaboration?
	What is effective teamwork? What strategies can I use/teams use to work better together? How can perspectives and experiences of a diverse group develop innovative solutions to a given problem?
Career and technical education provides pathways to high-demand, high-wage career opportunities, and personal fulfillment.	Why is career and life readiness important? What jobs and careers are available to meet individual and societal needs locally, regionally, and nationally?
	How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?
	What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now?

PRIORITY CAREER & TECHNICAL STANDARDS

Students will be skilled at...

Creativity, Critical Thinking, Communication and Collaboration
4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.
a: I develop effective resolutions for a given problem, decision or opportunity using available information.
b: I develop and implement a resolution for a new situation using personal knowledge and experience.

Career Development
CD4: Students will identify and apply employability skills.
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.
b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.
c: I identify and exhibit traits for retaining employment.
d: I develop positive relationships with others.

Information, Media, Technology

IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.

a: I choose appropriate sources of data and information for a given purpose.
b: I determine the relevance, validity and timeliness of data and information.
c: I select relevant information necessary for making decisions and solving problems
d: I apply data and information to communicate ideas and create new opportunities.

PRIORITY CONTENT STANDARDS

Students will know...

Standard: BB1: Students will analyze the core concepts of technology.

Standard: ENG1: Students will analyze and demonstrate the attributes of design.

Standard: ENG3: Students will demonstrate and analyze the role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.

Standard: ICT1: Students will analyze, select and use information and communication technologies.

Standard: MNF1: Students will be able to select and use manufacturing technologies.

Potential INDUSTRY-RECOGNIZED CREDENTIALS (IRCs) Opportunties associated with the course	Potential WORK BASED LEARNING (WBL) opportunities associated with the course
Potential DUAL CREDIT Opportunties associated with the course	

Unit 1 Sketching and Drawing		
STAGE 1: Desired Unit Results *What will students understand as a result of the unit?*		**STAGE 2: Assessment Evidence** *By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?*
ESSENTIAL QUESTION (s) *What thought-provoking questions will foster inquiry, understanding, and transfer of learning?*		**Success Criteria with Standards** *The criteria for evaluating performance on standards is constant.*
Why is creativity and innovation important? How is creativity and innovation used in the Architecture & Construction and/or STEM Career Pathways? What strategies and processes can I use to become a more effective creator, thinker and problem solver?		CTE standards-based Rubric: Throughout course, students and teachers use rubric for communication of success criteria, reflection, goal setting, and feedback. Students continually reflect on and discuss essential questions in their notebook and orally in class.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Creativity, Critical Thinking, Communication and Collaboration **4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.**		
Career Development **CD4: Students will identify and apply employability skills.**		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.8.h: I can apply communication strategies when adapting to a culturally diverse environment.	*Students will demonstrate employability skills through completing individual and team assignts on time and meeting drawing requirements as measured with a rubric.*
	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	
	CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.	
Information, Media, Technology **IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.**		
PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: ENG1: Students will analyze and demonstrate the attributes of design.	**ENG1.a.9.h:** I can examine how the design needs to continually be evaluated and the ideas of the design must be redefined and improved.	*Students will demonstrate graphic communication skills through completing individual and team assignts on time and meeting drawing requirements as measured with a rubric.*
Standard: ICT1: Students will analyze, select and use information and communication technologies.	**ICT1.c.9.h:** I can generate an authentic graphic Communication example.	
Standard: MNF1: Students will be able to select and use manufacturing technologies.	**MNF1.a.9.h:** I can select and apply the appropriate units and scales for situations involving measurement.	
SUPPORTING STANDARDS AND LEARNING TARGETS		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: AC1: Students will be able to select and use architecture and construction technologies.	**AC1.b.13.h:** I can convert scaled blueprint drawing measurements to full dimensions for a given construction project.	*Student will demonstrate various drawng and sketching skills through a varity of architectural drawings as measured by a course drawing and sketching rubric*
	AC1.b.14.h: I can apply conventional construction measurement processes accurately (i.e., geometric and trigonometric functions).	*Students will demonstrate their learning of measurment and scale by completing a varity of architectureal drawings. success is measured by a drawing rubric.*
	AC1.b.15.h: I can use conventional construction formulas to determine production requirements.	
	AC1.e.12.h: I can interpret and use residential construction blueprints and specifications.	*Student will demonstrate various drawng and sketching skills through a varity of architectural drawings as measured by a course drawing and sketching rubric*
	AC1.g.9.h: I can develop building plans and schedules by using processes common to residential and commercial construction.	
	AC1.g.11.h: I can prepare the site layout utilizing common surveying equipment and/or create a site plan.	

Stage 3: Learning Activities *A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?*		
GUIDING UNIT QUESTIONS *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning*	**STRATEGIES/ACTIVITIES** *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.*	**RESOURCES/MATERIALS** *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.*
		Sketchbooks
		pens
		pencils
		paper
		Revit or 3D drawing program

Unit 2 Architectural History and styles		
STAGE 1: Desired Unit Results *What will students understand as a result of the unit?*		**STAGE 2: Assessment Evidence** *By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?*
ESSENTIAL QUESTION (s) *What thought-provoking questions will foster inquiry, understanding, and transfer of learning?*		**Success Criteria with Standards** *The criteria for evaluating performance on standards is constant.*
Why is creativity and innovation important? How is creativity and innovation used in the Architecture & Construction and/or STEM Career Pathways?		"CTE standards-based Rubric: Throughout course, students and teachers use rubric for communication of success criteria, reflection, goal setting, and feedback. Students continually reflect on and discuss essential questions in their notebook and orally in class.
What strategies and processes can I use to become a more effective creator, thinker and problem solver?		
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Creativity, Critical Thinking, Communication and Collaboration **4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.**		
b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.5.h: I can apply past experience to develop a course of action for a new situation.	*Students will demonstrate their communication and critical thinking skills learned in class through a series of drawings and presentations to be evaluated by a rubric*
	4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.	
Career Development **CD4: Students will identify and apply employability skills.**		
Information, Media, Technology **IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.**		
a: I choose appropriate sources of data and information for a given purpose.	IMT1.a.6.h: I can justify the selection of various information sources for a given purpose.	*Students will use a varity of media and information technologies to research several architectural historical styles and famous architects and buildings*
d: I apply data and information to communicate ideas and create new opportunities.	IMT1.d.8.h: I can manage and share stored data and information for a specific purpose.	
PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: BB1: Students will analyze the core concepts of technology.	**BB1.f.3.m:** I can identify and describe basic types of structures (i.e., mass, bearing wall, framed) as they relate to their function.	*Students will use a varity of media and information technologies to research several architectural historical styles and famous architects and buildings*
Standard: ICT1: Students will analyze, select and use information and communication technologies.	**ICT1.j.5.h:** I can create a presentation which uses at least three types of media.	
	ICT1.j.6.h: I can combine different media types to create a final product which can be presented on different devices.	
SUPPORTING STANDARDS AND LEARNING TARGETS		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: AC1: Students will be able to select and use architecture and construction technologies.	**AC1.a.10.h:** I can analyze how structures are constructed using a variety of processes and procedures.	*Students will demonstrate their learning from class by creating several architecture designs focusing on the construction of the building detailing how buildings are made.*
	AC1.a.11.h: The design of structures includes a number of requirements.	

Stage 3: Learning Activities

A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?

GUIDING UNIT QUESTIONS *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning*	**STRATEGIES/ACTIVITIES** *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.*	**RESOURCES/MATERIALS** *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.*

Unit 3 Architectural Design and Principles		
STAGE 1: Desired Unit Results *What will students understand as a result of the unit?*		**STAGE 2: Assessment Evidence** *By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?*
ESSENTIAL QUESTION (s) *What thought-provoking questions will foster inquiry, understanding, and transfer of learning?*		**Success Criteria with Standards** *The criteria for evaluating performance on standards is constant.*
What is effective teamwork? What strategies can I use/teams use to work better together? How can perspectives and experiences of a diverse group develop innovative solutions to a given problem?		CTE standards-based Rubric: Throughout course, students and teachers use rubric for communication of success criteria, reflection, goal setting, and feedback. Students continually reflect on and discuss essential questions in their notebook and orally in class.
Why is creativity and innovation important? How is creativity and innovation used in architecture?		
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Creativity, Critical Thinking, Communication and Collaboration **4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.**		
a: I develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.11.h: I can determine the information needed to address an identified problem.	*Students will demonstrate these targets through self evaluation of group work and group projects. Self evaluation rubrics will be created and used*
	4C2.a.14.h: I can analyze the impact of a decision using a systems thinking model.	
	4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria.	
b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.5.h: I can apply past experience to develop a course of action for a new situation.	
	4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.	
Career Development **CD4: Students will identify and apply employability skills.**		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	*Students will self reflect through quik writes and in their portfolio*
	CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.	
c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	
PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: ENG1: Students will analyze and demonstrate the attributes of design.	**ENG1.a.12.h:** Requirements of a design, such as criteria, constraints and efficiency, sometimes compete with each other.	*Students will demonstrate their learing through the creation of architecture projects designed to practice the design process. Rubrics will be used to assess their progress*
SUPPORTING STANDARDS AND LEARNING TARGETS		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: AC1: Students will be able to select and use architecture and construction technologies.	**AC1.a.11.h:** The design of structures includes a number of requirements.	*Students will demonstrate their learning of architctural design principles through the completion of several design projects. Student will create a portfolio of their work. Rubrics will be created to evaluate their learning.*
	AC1.b.11.h: I can identify design solutions for residential construction problems.	
	AC1.b.15.h: I can use conventional construction formulas to determine production requirements.	
	AC1.e.15.h: I can solve common residential construction problems such as framing, plumbing and electrical, by using the official codes adopted by the state and local building standards commission.	
	AC1.g.9.h: I can develop building plans and schedules by using processes common to residential and commercial construction.	*Student will demonstrate various drawng and sketching skills through a varity of architectural drawings as measured by a course drawing and sketching rubric*
	AC1.g.11.h: I can prepare the site layout utilizing common surveying equipment and/or create a site plan.	
Standard: ENG2: Students will analyze and demonstrate engineering design.	**ENG2.a.7.h:** I can recognize that engineering design is influenced by personal characteristics, such as creativity, resourcefulness and the ability to visualize and think abstractly.	
	ENG2.b.4.h: A prototype is a working model used to test a design concept by making actual observations and necessary adjustments.	*Students will demonstrate their learning of architctural design principles through the completion of several design projects. Student will create a portfolio of their work. Rubrics will be created to evaluate their learning.*
Stage 3: Learning Activities *A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?*		
GUIDING UNIT QUESTIONS *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning*	**STRATEGIES/ACTIVITIES** *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.*	**RESOURCES/MATERIALS** *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.*
How can the application of the design process be used in architecture		cardboard
		foam core
		madel making supplies

		Architectural scales