Architecture & Design Technology Overview

Content Area: **Engineering**
Course(s): **ARCHITECTURAL DESIGN TECHNOLOGY I**
Time Period:
Length: **90 Days**
Status: **Published**

Cover

EAST BRUNSWICK PUBLIC SCHOOLS

East Brunswick New Jersey

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Course Adoption: 1/7/1988

Curriculum Adoption: 1/7/1988

Date of Last Revision Adoption: 9/1/2017

Course Overview

COURSE DESCRIPTION

This course is designed for students who want the experience of designing their own homes from the inside out. Students research numerous rooms, styles of architecture and various structures utilized around the world. Emphasis is on building construction, room design, cost analysis, planned unit development, small home design, and solar energy. A set of plans consisting of plot plan, floor plan, elevations, and a perspective drawing of a vacation home is developed by each student.

COURSE SCOPE AND SEQUENCE

Sequential Unit Description	Other Pacing Guide References	Proficiency (Summative) Assessments
UNIT 1 MEASUREMENT • Rulers • Scales • Engineering • Architecture	3 days	• Practical test • Individual projects
UNIT 2 – Site Planning • Bearing • Azimuth • Contour • Grade	2 days	• Practical test • Individual projects
UNIT 3 – Footings and Foundations • Footings • Foundations • Crawl Space • Slab • Basement • Reinforcement • Protection	3 days	• Individual Projects • Practical Tests
UNIT 4 – Floor Construction • Layout	7 days	• Individual projects • Develop a

• Construction • Terminology • Materials • Lab Safety		structure
Unit 5-A Wall Construction • Layout • Construction • Terminology • Materials • Lab Safety	10 days	• Individual projects • Develop a structure
5-B Door and Window Construction • Layout • Construction • Terminology • Materials • Lab Safety	5 Days	• Individual projects • Develop a structure
Unit 6- Roof Construction • Layout • Construction • Terminology • Materials • Lab Safety	5 Days	• Individual projects • Develop a structure
Unit 7- CAD Part 1- Text and 3-D Shapes Vector Works • Setting up File	5 Days	• Individual Projects

        - Scale
        - Layers
        - Classes
    - Elevations
    - Rendering
        - Palettes
        - Toolsets
        - Basic Tools
        - Object Information
        - Attributes
- 2-D Drawing
    - Text
    - Basic Shapes

Unit 8- Drawing a Floor Plan

Vector Works

- X & Y coordinates
- 3-D Symbols
    - Walls
        - Interior
        - Exterior
        - Materials
        - Wall Join
    - Windows
    - Doors
    - Fixtures
    - Roof
    - Floor

4 Weeks

- Individual Projects

- 2-D Drawing
    - Furniture
    - Appliances
    - Deck
    - Dimensions

Unit 9- Part 3 Developing an Original Floor Plan

- Planning
    - Site Planning
    - Foundation Plan
    - Types of houses
        - Building Codes
        - Spatial Planning
- Floor Plans
    - Walls
    - Windows
    - Doors
    - Layers
    - Stairs
    - Kitchens
    - Floors
    - Roof
    - Dimensions
- Windows and Door Schedules
- Elevation Views and Benchmarks
- Model of Houses

6 Weeks

- Individual Projects

CONTENT FOCUS AREA AND COURSE NAME

Course Name: Architectural and Design Technology 1, #1314

Course Number	School Numbers	Course Level	Grads(s)	Credits	Min. Per Week	Elective/Required	Initial Course Adopted
1314	050	S	10-12	2.50	210	E	1/7/88

Textbooks and Other Resources

Textbooks: (Reference only)

ARCHITECTURAL DRAFTING & DESIGN, Jefferis, Madsen, Delmar

BASIC TECHNICAL DRAWING, SPENCER, DYGDON., et.al., Glencoe Publishing, 1995

BASIC ARCHITECTURAL DRAFTING, Wallach, Paul I., South Western Publishing

GENERAL ARCHITECTURAL DRAFTING, Wyatt, William E., Charles A. Bennet Co., Inc.

Supplemental Materials: Videos, Teacher prepared handouts/worksheets, appropriate websites

Online website resources

Standards

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.5	Describe the roles, responsibilities, and relationships found in the architecture and construction trades and professions, including labor/management relationships.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC.7	Describe career opportunities and means to achieve those opportunities in each of the Architecture & Construction Career Pathways.
9.3.12.AC-DES.1	Justify design solutions through the use of research documentation and analysis of data.
9.3.12.AC-DES.2	Use effective communication skills and strategies (listening, speaking, reading, writing and

	graphic communications) to work with clients and colleagues.
9.3.12.AC-DES.3	Describe the requirements of the integral systems that impact the design of buildings.
9.3.12.AC-DES.4	Apply building codes, laws and rules in the project design.
9.3.12.AC-DES.5	Identify the diversity of needs, values and social patterns in project design, including accessibility standards.
9.3.12.AC-DES.6	Apply the techniques and skills of modern drafting, design, engineering and construction to projects.
9.3.12.AC-DES.7	Employ appropriate representational media to communicate concepts and project design.
9.3.12.AC-DES.8	Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.

Grading and Evaluation Guidelines

GRADING PROCEDURES

In terms of proficiency level the East Brunswick grades equate to:

A Excellent - Advanced Proficient

B Good Above Average - Proficient

C Fair - Proficient

D Poor - Minimally proficient

F Failing - Partially Proficient

COURSE EVALUATION

Each quarter students will be evaluated with tests and programming assignments using a total point basis to determine the quarter average. The semester/course average will be a weighted average of the 2 quarter averages (40% each) and a final exam (20%)

Course achievement will be evaluated based on the percent of all pupils who achieve the minimum level of proficiency (final average grade) in the course. Student achievement levels above minimum proficiency will also be reported. Final grades, and where relevant mid-term and final exams, will be analyzed by staff for the total cohort and for sub-groups of students to determine course areas requiring greater support or modification.)

Other Details

21003 Engineering Technology

Engineering Technology courses provide students with the opportunity to focus on one or more areas of

industrial technology. Students apply technological processes to solve real engineering problems; develop the knowledge and skills to design, modify, use, and apply technology; and may also design and build prototypes and working models. Topics covered in the course include the nature of technology, use of technology, and design processes.