

**Williamsburg High School for
ARCHITECTURE AND DESIGN (14K558)
CTE PROGRAM COURSE DESCRIPTIONS**

YEAR 1, Grade 9

The Foundations of Architecture and Design

Instructors: Ms. Cumberbatch & Mr. Geringer

Room 231

The Foundations of Architecture and Design introduces students to basic elements and design principles, and allows them to begin developing their skills in both mechanical drafting and computer-aided drafting and design (CADD). Students will be able to:

- Demonstrate their understanding of the elements and principles of design and architecture
- Analyze and/or create: Floor Plans, Elevations, Sections, Isometric & Linear Perspective, by measurement using a T-square, Triangle, & Architect's Scale
- Know basic computer skills, including but not limited to: presentation design with Microsoft PowerPoint, email etiquette, and attaching files
- Know and apply the basic commands in AutoCAD to generate drawings on the computer

YEAR 2, Grade 10

Architectural Computer Aided Drafting and Design (CADD)

Instructor: Mr. Abraham Rodriguez

Room 322

Architectural Computer Aided Drafting and Design (CADD) further develops students' computer aided drafting and design (CADD) skills and begins to examine the more technical features of architectural structures and of simple structural elements such as beams, columns, trusses and frames.

Students will be able to know and understand the following skills/ concepts:

- Floor Plans: Basic Symbols, Residential Doors, Windows, and Roofs
- Create Elevations in AutoCAD Architecture
- Create an Elevation derived from a floor plan, through the use of projection lines
- Construction Drawings: footings and foundations, box and solid sill construction, brick veneer and solid brick construction, wall framing
- Students will also complete a unit on Basic Model Building, which will include garage and roof framing
- Introduction to REVIT

YEAR 3

Grade 11

Architectural Building and Design

Instructors: Ms. Moos and Mr. Geringer

Room 326

Architectural Building and Design focuses on the application of the design skills and the building knowledge introduced in the previous years. This course focuses on developing skills in 2D and 3D transformations, translations between scales, and fabrication skills at full scale.

Topics covered include:

- Basic wood-working skills
- Model making
- Orthographic and isometric drawing
- Basic electrical wiring
- Shop safety
- Hand tool usage
- 3D Design: plaster, clay, metal, and wood
- Basic Design Concept development

YEAR 4

Grade 12

Advanced Computer Aided Drafting and Design (CADD) & the Business of Architecture

Instructor: Mr. Codio

Room 206

Advanced Computer Aided Drafting and Design (CADD) and the Business of Architecture is the capstone course of the four-year sequence. Working primarily with AutoCAD, students will continue to develop their computer-aided design skills, culminating in a final project presentation in the Spring.

Topics covered include:

- Advanced 3D modeling and design concept development
- 3D visualization of interior and exterior space
- Design presentation (PowerPoint) of work
- Company Organization
- Business/Marketing Skills
- Professional Portfolio Design and Development
- Understanding zoning laws, site plans, and building infrastructure