The Institute of Architecture, Engineer, and Construction is for students with interests in the engineering and design industry. Students will develop collaboration, problem-solving, and professional skills through the exploration and completion of real-world design projects. Students will work alongside industry partners and develop a proficiency in the creation of design projects to include drawing, rendering, modeling, and building in combination with verbal and written communication. Upon completion of this institute, students will be able to pursue industry certifications including OSHA 10, AutoCAD user, and NCCER Carpentry Level One. Students who dedicate four years to this institute will be prepared for apprenticeships such as The Chattanooga Area Carpentry Apprenticeship Training program and post-secondary training leading to professions in architectural, civil, and mechanical design.

“Chattanooga, TN is growing and there is a need for more homes and buildings. Our institute prepares us to be the future designers for our city!” -Angel; Class of ’22

“Choose our institute because we participate in enjoyable, meaningful projects often.” -Kenny; Class of ’22
**Career Technical Education Pathways:**

**Architectural & Engineering Design** - The Architectural and Engineering Design pathway at Howard prepares students for careers in the professions of engineering and design. Students, who successfully complete four years of coursework, will develop specialized critical thinking and problem-solving skills at it relates to identifying relations between resources and project expectations. Students will also learn how to create design solutions for using real-world problems and become proficient in the presentation of information using verbal and written communication. The students culminating experience will include an engineering practicum that places students with industry partners where they will produce a comprehensive design project before an audience.

**Structural Systems** - The construction pathway at Howard prepares students for careers in residential and commercial carpentry. Students, who successfully complete four years of structural systems coursework will develop various skills and knowledge around framing buildings, installation of interior and exterior finishing, the physics of structural loads and coverings, interpretation of construction drawings, and safe working practices. Standards throughout this pathway provide students with a comprehensive understanding of principles in the construction and business industry, setting the foundation for careers in project management.

Student schedules will consist of both Future Ready Institute classes as well as the opportunity to take a variety of classes offered by the particular high school in order to fulfill all graduation requirements. This is the 4 year plan for the student’s institute classes only. *DE= Dual Enrollment *IC= Industry Certification

<table>
<thead>
<tr>
<th>FRI Pathway(s)</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>IC: NCCER Core Curriculum -and/or- OSHA 10</td>
<td>Structural Systems</td>
<td>IC: Certified Solidworks Associate -and/or- AutoCAD User</td>
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<tr>
<td>Core Classes</td>
<td>English 9</td>
<td>English 10</td>
<td>English 11</td>
<td>English 12</td>
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<td></td>
<td>Algebra 1</td>
<td>Geometry</td>
<td>Algebra 2</td>
<td>Bridge Math</td>
</tr>
</tbody>
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**The Howard High School**
2500 Market Street
Chattanooga, TN 37408
(423) 498-6850

Principal: Dr. Leandrea Ware
Institute Lead Administrator: Dr. Charles Mitchell
FRI Coordinator: Zena Buckley
buckley_z@hcde.org

**FRI Opportunities:**
- Access to VW eLab
- Participation in ACE Mentorship Program
- Ability to Create 3D Designs
- Design Plan for Real-World Clients
- Opportunities to Build Robots
- Tours to Area Construction Sites

**Institute of Architecture and Construction**
Howard Partners

**Partners**

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Howard Partners