Germantown High School
Career & Technical Education
Course Syllabus

COURSE: **Structural Systems I**
INSTRUCTOR: Ms. Argodale
CLASS PERIODS: 2nd-3rd, Classroom S-101, Shop S-100, and/or Virtually

COURSE DESCRIPTION: *Structural Systems I* prepares students for careers in residential and commercial carpentry. Upon completion of this course, proficient students will be able to demonstrate knowledge and skill in framing buildings. Students will be able to frame floors, walls, ceilings, roofs, and stairs while safely employing tools and interpreting construction drawings to complete projects. Emphasis is placed on demonstrating proper measurement and application of mathematical concepts. Standards in this course also include principles of the construction industry and business and project management. Students will continue compiling artifacts for inclusion in their portfolios, which they will carry with them throughout the full sequence of courses in this program of study. Standards in this course are aligned with Tennessee State Standards for English Language Arts & Literacy in Technical Subjects, Tennessee State Standards in Mathematics, Tennessee Physical Science Standards, Tennessee Physics Standards, and the National Center for Construction Education and Research (NCCER) Curriculum.

Program of Study Application

This is the second course in the in the *Structural Systems* program of study. For more information on the benefits and requirements of implementing these programs in full, please visit the Architecture & Construction website at https://www.tn.gov/education/career-and-technical-education/career-clusters/cte-cluster-architecture-construction.html.

Industry Certifications

Students in this course will test to earn industry certification from three different sources:
1. Occupational Safety and Health Administration (OSHA) 10-Hour Safety Certification (OSHA-10).
2. NCCER Industry Certification in the fields of Architecture and Construction.
3. Home Builders Institute (HBI) Pre-Apprenticeship Certificate Training (PACT).

Completion of these certifications can give students advanced standing in an apprenticeship program or possible advanced standing in entry-level construction related employment.

Course Standards

Safety

1) Identify safety hazards on a jobsite and demonstrate practices for safe working. Accurately read, interpret, and demonstrate adherence to safety rules, including but not limited to rules pertaining to electrical safety, occupational Safety and Health Administration (OSHA) guidelines, and state and national code requirements. Be able to distinguish between the rules and explain why certain rules apply. Perform a hazard assessment for a given task such as working on a ladder to install roof framing components. Explain the steps necessary to safely perform the task, outlining steps to take in case of an emergency.
(TN Reading 3, 4, 6; TN Writing 2; NCCER 27101-13)

2) Maintain safety records and demonstrate adherence to industry-standard practices regarding general machine safety, tool safety, equipment safety, electrical safety, and fire safety to protect all personnel and equipment. For example, when operating tools and equipment, regularly inspect and carefully employ the appropriate personal protective equipment (PPE), as recommended by Occupational, Safety & Health Administration (OSHA) regulations. Incorporate safety procedures when operating tools and equipment, such as hand and power tools, ladders, scaffolding, and lifting equipment. Complete safety test with 100 percent accuracy.
(TN Reading 3, 4; NCCER 27101-13)

3) Follow procedures to work safely around materials. Adhere to responsibilities for employees in material safety as outlined by the Hazard Communication Standard (HazCom), such as locating and interpreting material safety data sheets (MSDS). Demonstrate safe procedures to move materials by planning the movement, properly lifting, stacking, and storing materials, and selecting proper materials-handling equipment.
(TN Reading 3, 4; NCCER 27101-13; 27102-13)

Career Exploration

4) Referencing data from U.S. Department of Labor and other sources, explain an apprenticeship. Write persuasively to describe the benefits of the apprenticeship approach of on -the-job training paired with related training for individuals seeking construction careers. Use a variety of sources to gather data, cite each source, and briefly describe why the chosen source is reliable.
(TN Reading 1, 7, 8; TN Writing 1, 8; NCCER 27101-13)

5) Research apprenticeships and postsecondary institutions (colleges of applied technology, community colleges, and four -year universities) in Tennessee and other states that offer construction -related programs. Write an informative paper or develop an infographic identifying entry requirements for a specific apprenticeship or postsecondary program of study, and the secondary courses that will prepare students to be successful in the program.
(TN Reading 1; TN Writing 4, 7; NCCER 27101-13)

Construction Industry Principles

6) Investigate and report on the process for determining the zoning regulations of a building site. Describe how zone designation and regulations such as setbacks, ground coverage, and maximum height impact the design, placement, and use of a building on a given site, citing findings from the investigation. Read and interpret zoning ordinances and other regulations impacting a given site (city, county, historic district, subdivision regulations, etc.).
(TN Reading 2, 3, 4; TN Writing 2)

7) Explain inspection procedures used to enforce building codes during the construction of a residential or commercial building, outlining the roles and responsibilities of the building inspector and the contractor and the intervals at which inspections are performed.
(TN Reading 2, 3, 4)

Types of Structural Systems

8) Compare and contrast types of structural framing systems, including wood light-frame, structural steel, and reinforced concrete, analyzing the factors influencing the selection of a structural system for given building functions. Using textbooks, online resources, or examples in the community, select three buildings with different framing types and explain why each type was used for the building's function.
(TN Reading 1, 2, 4, 5; TN Writing 2, 9; NCCER 27102-13)

Materials and Methods of Light-Frame Wood Construction

9) Distinguish among the basic types of wood framing systems, such as platform frames, balloon frames, and post-and-beam frames. Create a chart to define and compare the pros and cons of each type, citing examples of when each is used.
(TN Reading 1, 2, 4, 5, 7; TN Writing 2, 9; NCCER 27105-13)

10) Analyze the characteristics and uses of various types of wood products used in light frame construction.

a. Categorize types of wood as hardwood or softwood.
b. Identify differences in woods used in interior and exterior applications.
c. Identify grades of lumber, common lumber defects, and differences in treated and untreated lumber.
d. Explain the difference between actual and nominal lumber sizes.
e. Distinguish among the properties and uses of engineered wood products such as plywood, hardboard, particleboard, oriented strand board, mineral fiberboard, glulam lumber, and wood I-beams. Drawing on resources such as textbooks and wood product retailers' catalogs, examine actual wood product samples and create a written description of each, identifying the type and grade of the product, noticing and naming any defects, and explaining common uses of the product.
(TN Reading 1, 2, 4, 5, 7; TN Writing 2, 9; NCCER 27102-13)

Tools & Equipment

11) Accurately identify hand and power tools used in carpentry, describing the safe use and maintenance of each. Hand tools include levels, squares, planes, clamps, and hand saws. Power tools include power saws, drill presses, routers, laminate trimmers, portable power planes, power metal shears, and pneumatic and cordless nailers and staplers. For each of the systems covered in this course, identify and select the proper tools and accessories, critique the readiness of the tools, use the tools to accomplish the desired tasks, and then return the tools and accessories to their proper storage.
(TN Reading 2, 3, 4; NCCER 27103-13)

Construction Drawings & Specifications

12) Inspect and interpret a full set of construction drawings and specifications for a construction project including civil, architectural, structural, mechanical, plumbing, electrical, and fire protection drawings and specifications. Read and interpret different drawing types including plan view drawings, elevation view drawings, section drawings, detail drawings, and schedules. Explain the relationship between different types of drawing and the importance of cross-referencing different types of drawings with one another and cross-referencing drawings with specifications.
(TN Reading 1, 2, 4, 5, 6, 7, 9; NCCER 27104-13)

Floor Framing Systems

13) Implement geometric principles to square a building layout. For example, in the process of staking the corners of a building, check the layout for squareness by using the 3-4-5 rule based on right triangles and the Pythagorean Theorem.
(TN Reading 3; TN Math N-Q, G-SRT; NCCER 27104-13)

14) Identify the components that make up a floor frame, analyzing the purpose of and interrelationships among each component and explaining the sequence in which each is constructed.
(TN Reading 2, 3, 4, 5; NCCER 27105-13)

15) Read and interpret construction drawings to determine floor system requirements, such as the proper girder and joist size for a given span and floor load, and estimate the amount of material needed to frame a floor assembly.
(TN Reading 1, 4, 7;TN Math N-Q; NCCER 27105-13)

16) Describe the procedures necessary to fasten sills to the foundation and construct a floor assembly. Apply the appropriate tools, equipment, and procedures to build a floor assembly. Work in teams to install girders, lay out and install floor joists, install bridging and blocking, and apply subflooring.
(TN Reading 3; NCCER 27105-13)

Wall and Ceiling Framing Systems

17) Explain the procedure to lay out a wood frame wall, defining and describing the components such as plates, studs, partitions, door and window openings, bracing, and other components.
(TN Reading 3, 4; NCCER 27111-13)

18) Read and interpret drawings to determine wall and ceiling frame requirements for a given residential or commercial structure. For example, calculate the length of a stud and estimate the amount of material needed to frame a wall and ceiling assembly.
(TN Reading 4; TN Math N-Q; NCCER 27111-13)

19) Work in teams to construct a wall frame and ceiling assembly by implementing required safety techniques, tools, and equipment. Accurately measure and lay out the frame; accurately level and plumb the walls.
(TN Reading 3; TN Math N-Q; NCCER 27111-13)

Roof Framing Systems

20) Define and describe the framing components of gable and hip roofs such as the ridge board, plates, and types of rafters. Create a graphic illustration showing the roles of each component and how they work together in a roof framing system.
(TN Reading 3, 4, 7; NCCER 27112-13)

21) Read and interpret drawings to determine roof framing requirements, such as calculating the length of a rafter based on the desired pitch and estimating the materials needed to frame and sheath a roof. For example, use a speed square to lay out a common rafter on a piece of lumber.
(TN Reading 2, 3, 4; TN Math N-Q, G-SRT; NCCER 27112-13)

22) Work in teams to construct a roof frame assembly by implementing required safety techniques, tools, and equipment to accurately measure, lay out, construct, and sheath a roof frame. For example, frame a gable roof with an opening. (TN Reading 3; TN Math N-Q; NCCER 27112-13)

23) Compare and contrast different procedures to frame a roof. For example, describe the benefits of using prefabricated trusses in place of framing with rafters on site. Outline the major similarities and differences in each and write persuasively to describe why using either prefabricated trusses or framing with rafters is more beneficial for a specific project.
(TN Reading 2, 3, 4; TN Writing 1, 4, 7, 9; NCCER 27112-13)

Introduction to Building Envelope Systems

24) Analyze the components of a building envelope system, including building wrap, insulation, and various types of windows and exterior doors. Describe how the selection and installation of various components affect the energy efficiency of the building, such as the impact of air sealing on energy efficiency. Identify materials and installation strategies used to minimize or prevent air infiltration.
(TN Reading 2, 4, 5; TN Physical Science 2; TN Physics 2; NCCER 27109-13)

25) Describe the procedures necessary to prepare a rough opening and install windows and doors.
Apply the appropriate tools, equipment, and procedures to prepare rough openings for proper window and door installation. Properly install a lockset in an exterior door.
(TN Reading 3; TN Math N-Q; NCCER 27109-13)

Basic Stair Framing Systems

26) Analyze the components of a stair system. Read and interpret construction drawings to determine stair system requirements such as the total rise, number and size of risers, and number and size of treads. Based on stated requirements, estimate the amount of material needed to frame a stair assembly.
(TN Reading 2, 3, 4, 5, 7; TN Math N-Q; NCCER 27110-13)

27) Apply the appropriate tools, equipment, and procedures to safely build a small stair unit, demonstrating proper procedures for laying out and cutting stringers, risers, and treads.
(TN Reading 3; TN Math N-Q; NCCER 27110-13)

Business and Project Management

28) Describe strategies used to promote collaboration, trust, and clear communication among internal and external parties on a job site. Practice effective verbal, nonverbal, written, and electronic communication skills for working with colleagues, employers, clients, and other personnel while demonstrating the ability to: listen attentively, speak courteously and respectfully, resolve obstacles in construction, and respond to criticism.
(TN Reading 2, 3; TN Writing 2, 4)

29) Describe the components and purpose of a basic contract document for a residential project. Recognize the relationship and responsibilities of various parties to a contract. Write a basic contract for a construction job, such as a carpenter's contract to complete a deck addition for a residential client.
(TN Reading 2, 3, 4, 5; NCCER 44105-08)

30) Interpret construction drawings to determine the correct materials, tools, and equipment needed to complete a construction project. Plan and implement the steps needed to complete the project, adhering to inspection procedures and employing safe practices throughout. Draw from print and electronic examples to create a materials list, cost estimation, construction schedule, and inspection checklist for a project, applying the components of the documents to the given project.
(TN Reading 2, 3; TN Writing 4)

31) Log daily activities completed during a construction project over an extended period of time. Document important facts concisely in a daily report as would a project manager on a jobsite, including daily progress, equipment and materials used, personnel involved, and other work-related activities.
(TN Reading 3; TN Writing 2, 5, 10)

Portfolio

32) Update materials from coursework to add to the portfolio started in Fundamentals of Construction. Continually reflect on coursework experiences and revise and refine the career plan generated in the prior course, using technology where appropriate. Include photographs or illustrations and written descriptions of sequential progress in construction projects.
(TN Writing 2, 4, 5, 6)

GRADING POLICY

1. Grades are based on the following:

a. Classwork. Classwork grades are 35% of the overall grade each 9-week grading period. 4 – 6 classwork assignments will be given each quarter and will be in review of material that has been recently covered in class. Classwork Grades are based on the following:

Completeness. Assignments must be *complete* as directed. Be sure to read all directions. Ask questions if you are unsure. Points will be deducted based on the percentage of incomplete work.

Correctness. Assignments must be *correct* as directed. Be sure to read all directions. Ask questions if you are unsure. Points will be deducted based on the percentage of incorrect work.

Timeliness. Assignments must be submitted *on time* as directed. Be sure to read all directions. Ask questions if you are unsure. Ten percent (10%) will be deducted for each day an assignment is late, up to fifty percent (50%). There is no penalty for lateness due to an *excused* absence.

b. Participation. Participation grades are 5% of the overall grade each 9-week grading period. Participation grades are based on the following:

Participation. Students must *participate fully* in class discussions and activities as assigned. Be sure to follow all directions. When given the opportunity, ask questions if you are unsure. Points will be deducted based on the percentage of idleness.

Preparedness. Students are required to come to class *with all of the required materials for that class* and are required to come to class having completed all of the homework exactly as assigned. Failure to be prepared will result in a zero for the day.

Wednesday Working Uniforms. Students are required to wear the assigned working uniform shirt on Wednesdays. Failure to wear the working uniform shirt on Wednesdays will result in a zero for the day.

c. Projects. Project Grades are 10% of the overall grade each 9-week grading period. Students will be assigned a project to be completed either alone, with a partner, or as part of a team. Project Grades are based on the following:

Completeness. Projects must be *complete* as directed. Be sure to read all directions. Ask questions if you are unsure. Points will be deducted based on the percentage of incomplete work.

Correctness. Projects must be *correct* as directed. Be sure to read all directions. Ask questions if you are unsure. Points will be deducted based on the percentage of incorrect work.

Timeliness. Projects must be submitted *on time* as directed. Be sure to read all directions. Ask questions if you are unsure. Ten percent (10%) will be deducted for each day an assignment is late, up to fifty percent (50%). There is no penalty for lateness due to an *excused* absence.

Project-Specific Rubric. In addition to the rubric below, a specific rubric may be distributed for each project.

d. Notebook Portfolios. Notebook grades count as one project grade each 9-week grading period. Students are required to maintain a notebook that is to include all written work. Notebooks will be kept in the classroom in containers provided by instructor, however keeping track of the notebook is the *student's* responsibility. *Notebooks are intended to be a student's study guide for all exam*s and will be graded for *content* only. Notebook Grades are based on the following:

Completeness. Notebooks must be *complete* as directed. Ask questions if you are unsure. Points will be deducted based on the percentage of missing work.

Correct Order. Notebooks must be organized in the *correct order* as directed. Ask questions if you are unsure. Ten percent (10%) will be deducted if a notebook has not been organized in the correct order.

Timeliness. Notebooks must be submitted *on time* as directed. Ask questions if you are unsure. Ten percent (10%) will be deducted for each day an assignment is late, up to fifty percent (50%). There is no penalty for lateness due to an *excused* absence.

e. Tests and Exams. Test and Exam grades are 40% of the overall grade each 9-week grading period. Tests will be given periodically, and a comprehensive exam will be given at the end of each semester. At least one day's notice will be given for each test/exam so that students may be prepared. Test and Exam Grades are based on the following:

Completeness. Tests and Exams must be *complete* as directed. Be sure to read all directions. Ask questions if you are unsure. Points will be deducted based on the percentage of incomplete work.

Correctness. Tests and Exams must be *correct* as directed. Be sure to read all directions. Ask questions if you are unsure. Points will be deducted based on the percentage of incorrect work.

Timeliness. Tests and Exams must be taken *on time* as directed. Be sure to read all directions. Ask questions if you are unsure. Ten percent (10%) will be deducted for each day an assignment is late, up to fifty percent (50%). There is no penalty for lateness due to an *excused* absence.

2. Grading Scale. The grading scale will be in accordance with Shelby County Schools policy.

Germantown High School
Career & Technical Education
RULES AND POLICIES

COURSE: **Structural Systems I**
INSTRUCTOR: Ms. Argodale
CLASS PERIODS: 2nd-3rd, Classroom S-101, Shop S-100, and/or Virtually

ATTENDANCE POLICY

Attendance.

Present / On Time. Students must be signed in (or in the classroom), ready to begin working when the bell rings.

Present / Tardy. Any student who is tardy to class must report to the instructor. ALL unexcused tardies will be reported to the appropriate administrator. As a result, Saturday school or another disciplinary penalty may be assigned. An *excused* tardy requires a written note (or an *immediate* email) from a teacher or administrator. It is *not* the instructor's job to ask other adults for a note excusing your tardiness!

Absent / Unexcused. Unexcused absences will result in a ten percent (10%) deduction for each day an assignment is late, up to fifty percent (50%).

Absent / Excused. There is no penalty for *documented* excused absences, and work may be made up in accordance with school policy.

CONDUCT POLICY

Conduct. Students are expected to *fully* participate in all class discussions and activities. Additionally, all students are required to come to class with all of the required materials for that class and are required to come to class having completed all of the homework exactly as assigned. Students are expected to *fully* comply with all Virtual, Classroom, Safety, Laboratory, School, and Shelby County Schools Rules. Failure to do so will result in a disciplinary penalty. Inappropriate conduct in the laboratory may result in a temporary loss of privileges, which may directly affect a student's grade!

SAFETY

Safety is of the *utmost* importance. Any infraction of the safety rules may result in a temporary loss of privileges, which may directly affect a student's grade! Safety rules are posted in the laboratory

CLASSROOM RULES

In addition to Shelby County Schools and Germantown High School Rules, every day, every student will...

1. Be Responsible For Yourself!

A. Be on time to class. You must be in your seat, ready to work when the bell rings, in order to be considered on time.

B. Come to class prepared every day. Every day each student must bring:

1. One 1" 3-ring binder with clear "view" cover.
2. One set of notebook dividers.
3. Loose leaf paper. Paper from a spiral notebook will **not** be accepted. There will be **no exceptions**!
4. At least two #2 sharpened pencils, every day.
5. At least two medium-point ball-point pens, blue or black, every day.
6. Architect's Scale (*not* an Engineer's Scale)

The instructor does not have supplies for students!

C. Complete your Classwork/Homework. Bring your classwork/homework to class and turn it in WHEN IT IS DUE. Place homework in the basket on the table in the front of the room.
Submit virtual assignments according to directions WHEN THEY ARE DUE.

2. Practice Good Conduct - Classroom

A. Restroom.
Students must have the permission of the instructor in order to use the restroom. Only one student at a time may leave the room to use the restroom when necessary. Students ***must not*** interrupt the instructor to ask; rather, wait until presentations and instruction is finished.

B. Respect.
Treat all others with the same dignity and respect that you expect from them.

C. Personal Behavior.
Keep yourself to yourself. Horse play is not permitted and will not be tolerated.

D. Seats.
Remain in your seats at all times unless instructed to do otherwise.
Do not move the furniture unless you have the *expressed permission* of the instructor.

E. Talking.
Students must get immediately quite when the instructor stands in front of the room or addresses the students.
Talking in the classroom is only permitted when specified by the instructor.
Do not interrupt the instructor.
You will be given ample opportunity to ask questions.
Ask only questions that are *in context* and relate *directly* to the lesson.

F. Food.
Food OF ANY KIND is *not permitted* in the classroom.
You may bring *clear*, bottled water to class.

G. Electronics.
Electronic devices may only be used by the student when SPECIFICALLY authorized by the teacher. Unauthorized phones or other electronic devices will be confiscated by the instructor and submitted to an administrator.

3. Go Only Where Authorized!

A. Instructor's desk. Students must have the *expressed permission* of the instructor to approach the instructor's desk. Only one student is allowed near the instructor's desk at a time, unless otherwise specified by the instructor. This applies to any items that belong to the instructor.

B. Attached Hallway/Classroom. Students must have the *expressed permission* of the instructor to enter the attached hallway/classroom.

2. Practice Good Conduct - Virtual

While learning virtually, students must comply with the following guidelines in order to achieve success in class. Failure to follow the guidelines will result in a deduction in your participation grade and will negatively affect other grades, depending on the level of infraction. Failure to do so will result in a discipline referral and parents will be contacted. This contract is created to ensure your ability to maintain focus during virtual learning and the teacher's ability to check for understanding.

Digital Citizenship

Digital Citizenship refers to the responsible use of technology by anyone who uses computers, the Internet, and digital devices to engage with society on any level. At GHS that means students will be required to maintain the same level of respect for their teacher and their peers online as they would in person.

A. It's PERMANENT! It is important to consider that what you post online is often permanent.

1. Students must remain engaged with their virtual classroom and limit outside distractions.
2. Students must not post harmful or disruptive comments in the class chat.

3. All classes will be recorded! This is for future student use, but the recordings will be available to the GHS Administration and/or parents if there is a student infraction.

4. Class chat comments cannot be deleted.

Participation

Students will be required to participate visually (on camera) with the teacher throughout class which means they must keep their cameras turned on. The camera is the best way for the teacher to keep track of student participation and engagement. Microphones must be muted at all times unless you have the *expressed permission* of the instructor.

A. Camera. The camera will be the main way that students will communicate virtually with the teacher. This will be done through gestures.

1. Thumbs up 👍 = yes / student understands / is ready to move on.

2. Thumbs down 👎 = no / student does not understand.

3. Pointer finger raised ☝ = slow down / I need more time

B. Microphone. Microphones must remain muted unless the student has permission to ask a question. When given the opportunity, students must first select the "Raise Hand" feature and wait to be called on before turning on their microphone.

A. Limit distractions

1. Students may not use their phones during class time.

2. Students should choose a location in which to learn that allows them to focus and work.

- Ideally at a table or desk away from other family members

C. Class Notebook. Every student will have a personal Class Notebook assigned to them. The Class Notebook has both a shared folder and a private/personal folder; however, your personal folder is shared with the teacher.

1. The Class Notebook is where students will keep all of their classwork. This includes:

- Handouts, notes, completed assignments, homework, and quizzes.

2. Students should not delete any assignments from the Class Notebook to ensure that the student will receive credit for their work.

D. Other Virtual Rules may be added as the need arises.

ACT LIKE THE SUCCESSFUL ADULT YOU PLAN TO BE

The rules may be modified by the instructor as needed.

Germantown High School
Career & Technical Education
FEES AND REQUIRED MATERIALS

COURSE: Structural Systems I
INSTRUCTOR: Ms. Argodale
CLASS PERIODS: 2nd-3rd, Classroom S-101, Shop S-100, and/or Virtually

COSTS

All fees are payable to Germantown High School, and will be due to Ms. Argodale by a later date, yet to be determined. Only cash or cashier's checks will be accepted. An official school receipt will be issued upon payment. Personal checks *are not* accepted by Germantown High School.

SkillsUSA

All students are required (by State Law) to join and pay annual dues to **SkillsUSA** (for more information about SkillsUSA, see **http://www.skillsusa.org/**). Students must be a member of this Career and Technical Student Organization (CTSO) in order to go on field trips or compete in any skills competition. The dues are $20.

WEDNESDAY WORKING UNIFORMS

All students are required to wear the specified Wednesday Working Uniform, which the instructor has made. Wearing the uniform is a professional requirement and earns a participation grade.

REQUIRED MATERIALS

1. One 1" 3-ring binder with clear "view" cover.
2. One set of notebook dividers.
3. Loose leaf paper. Paper from a spiral notebook will **not** be accepted. There will be **no exceptions**!
4. At least two #2 sharpened pencils, every day.
5. At least two medium-point ball-point pens, blue or black, every day.
6. Architect's Scale (*not* an Engineer's Scale)
7. Safety equipment (*if you choose to purchase your own, subtract $30 from class fee*).

a. Safety glasses. Clear lens; Must meet ANSI Z87.1 requirements.
Students who wear glasses must wear safety glasses that are designed to fit over their glasses.
b. Ear plugs. Disposable foam type, package of several.
d. Dust mask. N95 disposable molded style, package of several.
- OR - Disposable face-mask with elastic ear loops (medical style), package of several.
d. Gloves. Well-fitting (not baggy or loose) durable work gloves, leather or leather palmed. Rubber, vinyl, or fabric gloves are not allowed.
e. Bag. A bag or backpack in which to keep these items.
Additionally, since carpentry can be a very dusty activity, students may choose to bring a dust apron or a change of work clothes.

The instructor *does not* have extra materials to lend to students.

Ann E. Argodale
Structural Systems Teacher
College, Career, & Technical Education
Germantown High School

COURSE: **Structural Systems I**
INSTRUCTOR: Ms. Argodale
CLASS PERIODS: 2nd-3rd, Classroom S-101, Shop S-100, and/or Virtually

Dear Parent/Guardian:

As you know, your child is enrolled in Structural Systems I, a vocational education course, which can prepare your child for a career in the construction industry. This is a hands-on course in which your child will learn how to use hand tools, compressed-air-powered tools, electrically powered tools, and electrically powered machines. Additionally, your child will be handling actual building materials used in the construction industry. Because safety is of the utmost importance in using these tools and machines, your child must pass a number of safety tests:

1. OSHA-10 General Industry 10-hour course that was offered in Fundamentals of Construction. The student will *not be permitted* to participate in any hands-on activities until this course is complete! This is SCS Board Policy!
2. Operating and safety examinations for each tool/machine with 100% accuracy before he/she will be permitted to use each item. A 100% score is required in order to achieve 100% safety. Failure to score 100% in a timely manner may adversely affect your child's grade. Additionally, your child must follow all laboratory safety rules *exactly* in order to insure his/her safety. Failure to do so may result in serious injury or even death. Therefore, it is important that you stress to your child the great importance of learning all of the operating and safety rules and following them *to the letter*. Any failure on your child's part to do so which results in his/her injury *or the injury of others* will therefore be the *sole fault of your child*.

Your child must provide his/her own safety equipment including a hard hat, safety glasses, hearing protection, and gloves, which will be his/her responsibility to maintain. If any of these items are lost or damaged, your child will not be permitted to participate in laboratory activities until the items are replaced at your child's expense. Failure to do so promptly may adversely affect your child's grade.

Because building materials are often rough or have splinters, sometimes very minor, superficial scratches and scrapes may occur. This is to be expected. These will be treated in the laboratory with soap and water and band-aids, as required.

A signed copy of the signature page (below) must be on file with the school before your student may participate in the hands-on portion of the training process.

Sincerely,

Ann E. Argodale
Carpentry Teacher
College, Career, & Technical Education
Germantown High School
Shelby County Schools

2nd/3rd	4th	5th	6th/7th	
Class Period (circle one)				**Print/Type** Student Name (last, first)

Germantown High School
Career & Technical Education
STUDENT CONTRACT

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COURSE DESCRIPTION: *Structural Systems I* prepares students for careers in residential and commercial carpentry. Upon completion of this course, proficient students will be able to demonstrate knowledge and skill in framing buildings. Students will be able to frame floors, walls, ceilings, roofs, and stairs while safely employing tools and interpreting construction drawings to complete projects. Emphasis is placed on demonstrating proper measurement and application of mathematical concepts. Standards in this course also include principles of the construction industry and business and project management. Students will continue compiling artifacts for inclusion in their portfolios, which they will carry with them throughout the full sequence of courses in this program of study. Standards in this course are aligned with Tennessee State Standards for English Language Arts & Literacy in Technical Subjects, Tennessee State Standards in Mathematics, Tennessee Physical Science Standards, Tennessee Physics Standards, and the National Center for Construction Education and Research (NCCER) Curriculum.

Program of Study Application

This is the second course in the *Structural Systems* program of study. For more information on the benefits and requirements of implementing these programs in full, please visit the Architecture & Construction website at https://www.tn.gov/education/career-and-technical-education/career-clusters/cte-cluster-architecture-construction.html.

Industry Certification

Students in this course will test to earn industry certification from three different sources:
1. Occupational Safety and Health Administration (OSHA) 10-Hour Safety Certification (OSHA-10).
2. NCCER Industry Certification in the fields of Architecture and Construction.
3. Home Builders Institute (HBI) Pre-Apprenticeship Certificate Training (PACT).

Completion of these certifications can give students advanced standing in an apprenticeship program or possible advanced standing in entry-level construction related employment.

By *initialing* next to each item, below, I acknowledge that I have read the document listed, I fully understand it, and I will comply.

_____	Course Syllabus	_____	Required Supplies
_____	Rules and Policies	_____	Course Fees
_____	Behavior Contract	_____	Virtual Contract

I have read each document listed above. I agree to comply with all classroom rules, policies, and conduct rules. I am aware of the required supplies and fees for the course, and understand that I must have these items no later than Friday, September 3, 2021. I understand that failure to do so will affect my ability to fully participate in the class and earn a grade.

Print Student Name	Student Signature	Date
Print Parent Name	Parent Signature	Date