School District of Marshfield Course Syllabus

Course Name: Home Maintenance
Length of Course: 1 Semester
Credit: .5

Program Goal(s):

Empower learners to be college and career ready through standards-based experiences in the classroom and career-based learning experiences with business and industry partners. Learners will engage through technology in design, building, problem-solving, repair or service, in a collaborative environment through theory and hands-on experiences.

Course Description:

This course will provide students the opportunity to learn about the fundamentals of maintaining residential buildings. Students will learn about structures, from their foundation to the roof system, in order to better understand homes. Scaled projects and hands on activities will be used to explore all facets of the residence. Construction, plumbing, and electrical safety will be taught throughout each unit, while working on communication and teamwork skills. It will also help students understand how to do simple around-the-house tasks, fixes, or improvements. These skills will improve the look of the residence and save the home owner money by doing the work themselves.

Standards:

Wisconsin Technology & Engineering Broad Based (BB)

Standard	Learning Priority	Performance Indicators
BB1: Students will analyze the core concepts of technology	BB1.a Analyze and use technological systems	BB1.a.4.m: Explain how common energy, power and transportation systems have provisions that detect, bypass or compensate for failures within a system. BB1.a.5.h: Describe how systems can fail because of design flaws, defect parts, poorly matched parts or they were used beyond their design capabilities.
	BB1.b: Analyze and use tools and materials.	BB1.b.3.m: Students will describe how resources are the things needed to complete a task (e.g., tools, machines, materials, information, energy, people, capital and time). BB1.b.4.m: Use appropriate tools to measure and layout a piece of material (e.g., length, width, thickness, angles, circles, arcs and volume) within tolerances.
	BB1.d: Analyze and use electricity and electronic systems.	BB1.d.2.m: Define basic electrical concepts (i.e., voltage, direct and alternating current, resistance, power, polarity, conductor, insulator, series circuit, parallel circuit, series-parallel circuit, inductance, capacitance, continuity, digital, analog). BB1.d.7.h: Inspect and test components such as switches, connectors, relays, solid state devices and conductors and take appropriate action.
	BB1.e: Analyze, explain and use control systems.	BB1.e.4.m: Explain how quality control is a planned process to ensure that a product, service or system meets established criteria.
	BB1.f: Identify and analyze structures.	BB1.f.3.m: Identify and describe basic types of structures (i.e., mass, bearing wall, framed) as they relate to their function. BB1.f.6.h: Justify the application of structural materials and their trade-offs in the design of structures based on design requirements through optimization (i.e., engineering design process).

Wisconsin Technology & Engineering Architecture and Construction (AC)		
Standard	**Learning Priority**	**Performance Indicators**
Standard: AC1: Students will be able to select and use architecture and construction technologies.	AC1.a: Analyze construction requirements, materials, structures, techniques and maintenance.	AC1.a.5.m: Select designs for structures based on factors such as building codes and requirements, style, convenience, cost, climate, culture and function. AC1.a.6.m: Explain the function of foundations and why structures rest on a foundation. AC1.a.8.m: Identify a variety of materials and subsystems that buildings generally contain. AC1.a.13.h: Explain how structures can include prefabricated materials.
	AC1.b: Apply measurement systems in the planning and layout process used in the residential construction industry.	AC1.b.9.m: Demonstrate use of the Standard Measuring System to the 1/16" and the Metric Measuring System to millimeters. AC1.b.10.m: Add, subtract, multiply and divide in the Standard Measuring System to the 1/16" and the Metric Measuring System to millimeters.
	AC1.c: Demonstrate the safe and appropriate use of hand tools common to the residential and commercial construction industry.	AC1.c.3.m: Demonstrate proficiency in the use of simple hand tools such as hammers, screwdrivers, handsaws, planes, sandpaper, nail sets, tin shears, framing squares, utility knives, chalk lines, etc. AC1.c.4.m: Demonstrate proficiency in obtaining and storing simple hand tools. AC1.c.5.h: Demonstrate and use the common hand tools of the trade safely and properly. AC1.c.6.h: Maintain and care for hand tools used in residential and commercial construction.
	AC1.d: Demonstrate the safe and appropriate use of portable power tools that are common to the residential construction industry and are appropriate to the individual student's level.	AC1.d.2.m: Demonstrate the safe and proper use of power tools. AC1.d.3.m: Demonstrate the safe and proper use of pneumatic tools. AC1.d.4.m: Demonstrate proficiency in the proper care of all tools used in a class or lab. AC1.d.5.h: Demonstrate the use of portable power tools, such as circular saws, table saws, saber saws, drills, planers and sanders, safely and properly. AC1.d.6.h: Demonstrate the use of portable pneumatic tools, such as rough framing nail guns, interior finishing and brad nail guns,

		hammers, impact wrenches, drills and compressors, safely and appropriately. AC1.d.7.h: Maintain and care for portable power tools and portable pneumatic tools.
	AC1.e: Demonstrate project management procedures and processes as they occur in a construction project.	AC1.e.9.m: Explain how building codes vary based on geological, environmental and political influences. AC1.e.11.m: Explain the importance of positive and constructive communication skills.
	AC1.f: Demonstrate the value and necessity of practicing occupational safety in the construction industry facility and job site.	AC1.f.3.m: Explain electrical safety standards and proper wiring methods. AC1.f.4.m: Recognize the potential accidents and injuries that may occur in a given work environment. AC1.f.5.h: Demonstrate the safe use of electrical connection methods and electrical wiring procedures. AC1.f.6.h: Demonstrate the safety procedures and practices in various work environment settings pertaining to residential and commercial construction.
	AC1.g: Demonstrate the variety of building phases, systems and techniques used in architecture and construction.	. AC1.g.8.m: Recognize that many phases are required to complete a construction project. AC1.g.12.h: Analyze the phases of residential and commercial construction.
	AC1.h: Demonstrate the impact of financial, technical, environmental, political, societal and labor trends on the past and future of the construction industry.	AC1.h.4.e: Discuss the importance of energy efficiency. AC1.h.5.m: Describe historically that construction began to meet the basic need of shelter. AC1.h.6.m: Identify that structures are planned and constructed based on financial constraints. AC1.h.7.m: Distinguish how construction can impact the environment both positively and negatively. AC1.h.8.m: Identify the importance of energy efficient, safe, comfortable and healthy structures. AC1.h.11.h: Explain the environmental regulations that influence residential and commercial design.

		AC1.h.12.h: Identify the skills and building techniques that are utilized to construct energy efficient, safe, healthy and comfortable structures.
Wisconsin Common Career Technical Standards (WCCTS)-Creativity, Critical Thinking, Communication and Collaboration (C)		
Standard	**Learning Priority**	**Performance Indicators**
Standard: 4C1: Students will think and work creatively to develop innovative solutions to problems and opportunities.	4C1.a: Develop original solutions, products and services to meet a given need.	4C1.a.4.m: Analyze elements of a problem to develop creative solutions. 4C1.a.6.m: Describe how past experiences can inform current problem solving. 4C1.a.7.h: Develop original ways to solve a given problem. 4C1.a.8.h: Design a product or service that could fulfill a human need or desire. 4C1.a.9.h: Apply past experiences to current problems in developing innovative solutions.
	4C1.b: Work creatively with others to develop solutions, products and services.	4C1.b.4.m: Explain how multiple people can develop better solutions than an individual. 4C1.b.5.m: Explain how multiple people and perspectives can develop better ideas than an individual. 4C1.b.6.m: Explain how multiple people and perspectives can improve an existing product or process better than an individual. 4C1.b.7.h: Incorporate the skills and experiences of others to develop a new solution to a problem. 4C1.b.8.h: Work as part of a team to design a product or service that could fulfill a human need or desire. 4C1.b.9.h: Work as part of a team to improve an existing product or process.
Standard: 4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.	4C2.a: Develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.5.m: Analyze symptoms to identify the root cause of a problem. 4C2.a.6.m: Develop multiple resolutions for a given problem, decision or opportunity. 4C2.a.7.m: Identify problems that became worse due to poorly thought out or poorly informed solutions. 4C2.a.8.m: Explain how implementation of a solution or action may affect one or more corresponding systems. 4C2.a.9.m: Explain how different resolutions may be appropriate under different circumstances.

		4C2.a.10.m: Explain the process for choosing an action or making a decision. 4C2.a.11.h: Determine the information needed to address an identified problem. 4C2.a.12.h: Contrast the benefits and drawbacks of various proposed resolutions to a given situation. 4C2.a.13.h: Predict how an action could result in unintended consequences, both positive and negative. 4C2.a.14.h: Analyze the impact of a decision using a systems thinking model. 4C2.a.15.h: Determine the best resolution for a problem, decision or opportunity based on given criteria. 4C2.a.16.h: Defend an action taken or a decision implemented.
	4C2.b: Develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.3.m: Analyze problems to determine what past experiences might be related and relevant. 4C2.b.4.m: Analyze a problem to determine how it relates to existing knowledge. 4C2.b.5.h: Apply past experience to develop a course of action for a new situation. 4C2.b.6.h: Use existing knowledge to develop a resolution for a new situation, problem or opportunity.
Standard: 4C3: Students will communicate and collaborate with others to accomplish tasks and develop solutions to problems and opportunities.	4C3.a: Communicate thoughts and feelings with others using verbal and non-verbal language.	4C3.a.8.m: Implement effective listening skills in resolving a situation. 4C3.a.9.h: Develop a mutually acceptable response to a question or problem. 4C3.a.11.h: Communicate effectively in the presence of a language barrier. 4C3.a.12.h: Utilize effective listening skills in creating consensus in a group.
	4C3.b: Work collaboratively with others.	4C3.b.4.m: Use idea generating practices as part of a group. 4C3.b.5.m: Describe ways to facilitate group collaboration. 4C3.b.6.m: Demonstrate the use of various tools to communicate effectively with an individual or a group. 4C3.b.7.h: Participate in group processes to generate consensus.

		4C3.b.8.h: Lead group processes to generate consensus.
	4C3.c: Use interpersonal skills to resolve conflicts with others in an ethical manner.	4C3.c.5.m: Contribute to resolving conflicts that occur within a team or group. 4C3.c.6.m: Explore the ethical considerations of a current or historical action or decision. 4C3.c.7.h: Resolve conflicts productively with individuals as they arise. 4C3.c.8.h: Lead a team or group through a conflict resolution process to reach a productive outcome.

Wisconsin Common Career Technical Standards (WCCTS)-Career Development (CD)

Standard	Learning Priority	Performance Indicators
Standard: CD1: Students will consider, analyze and apply an awareness of self, identity and culture to identify skills and talents.	CD1.a: Identify person strengths, aptitudes and passions.	CD1.a.2.m: Assess personal strengths, aptitudes and passions related to potential future careers CD1.a.3.h: Evaluate various occupations and career pathways to identify personal, academic and career goals based on personal strengths, aptitudes and passions.
	CD1.b: Demonstrate effective decision-making, problem solving and goal setting.	CD1.b.4.m: Identify long and short-term goals. CD1.b.5.h: Use a decision-making and problem-solving model.
	CD1.c: Interact effectively with others in similar and diverse teams.	CD1.c.7.m: Display cooperative behavior and identify personal strengths and assets in groups. CD1.c.11.h: Evaluate how the personal strengths and assets of others contribute to a cooperative group atmosphere. CD1.c.12.h: Assess how respect and appreciation for individual and cultural differences impacts group processes.
	CD1.d: Apply a range of relevant decision-making strategies.	CD1.d.4.m: Apply decision-making strategies to personal and team interactions. CD1.d.5.h: Predict the outcome of various decisions on personal, social and career success. CD1.d.6.h: Evaluate the impact of personal decision-making strategies on specific outcomes.
Standard: CD2: Students will identify the connection between educational achievement and work opportunities in order to reach personal and career goals.	CD2.a: Apply academic experiences to the world of work, inter-relationships and the community.	CD2.a.2.m: Describe a diverse range of opportunities available beyond high school. CD2.a.3.h: Evaluate how performance and connections within the learning community enhance future opportunities.

		CD2.a.4.h: Determine those opportunities that best support attainment of a specific career goal.
	CD2.b: Assess attitudes and skills that contribute to successful learning in school and across the life span.	CD2.b.5.m: Apply academic information from a variety of sources to enhance career preparedness and lifelong learning. CD2.b.6.m: Research local and regional labor market and job growth information to analyze career opportunities. CD2.b.7.h: Interpret and analyze the impact of current education, training and work trends on life, learning and career plans. CD2.b.8.h: Assess education and training opportunities to acquire new skills necessary for career advancement. CD2.b.9.h: Analyze local and regional labor market and job growth information to select a career pathway for potential advancement.
Standard: CD3: Students will create and manage a flexible and responsive individualized learning plan to meet their career goals.	CD3.a: Investigate the world of work in order to gain knowledge of self in order to make informed career decisions.	CD3.a.5.m: Demonstrate the ability to use technology to retrieve and manage career information that inspires educational achievement. CD3.a.6.m: Build an ongoing awareness of personal abilities, skills, interests and motivation and determine how these fit with chosen career pathway. CD3.a.7.m: Develop an individual learning plan to enhance educational achievement and attain career goals based on a career pathway. CD3.a.9.m: Use assessment results in educational planning including career awareness. CD3.a.10.h: Analyze how career plans may be affected by personal growth, external events and changes in motivations and aspirations. CD3.a.11.h: Apply academic and employment readiness skills in work-based learning situations such as internships, shadowing and/or mentoring experiences. CD3.a.12.h: Evaluate changes in local, national and global employment trends, societal needs and economic conditions related to career planning. CD3.a.14.h: Implement an individual learning plan to maximize academic ability and achievement.

	CD3.b: Examine and evaluate opportunities that could enhance life and career plans and articulate plan to guide decisions and actions.	CD3.b.2.m: Describe educational levels (e.g., work-based learning, certificate, two-year, four-year and professional degrees) and performance skills needed to attain personal and career goals. CD3.b.3.m: Demonstrate openness to exploring a wide range of occupations and career pathways. CD3.b.4.h: Implement strategies for responding to transition and change with flexibility and adaptability. CD3.b.5.h: Evaluate the relationship between educational achievement and career development.
	CD3.c: Employ career management strategies to achieve future career success and satisfaction.	CD3.c.3.m: Identify work values and needs. CD3.c.4.m: Define adaptability and flexibility in the world of work. CD3.c.5.h: Determine how principles of equal opportunity, equity, respect, inclusiveness and fairness, affect career planning and management. CD3.c.6.h: Discuss how adaptability and flexibility, especially when initiating or responding to change, contributes to career success.
Standard: CD4: Students will identify and apply employability skills.	CD4.a: Identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.4.m: Demonstrate flexibility and willingness to learn new knowledge and skills. CD4.a.5.m: Identify positive work-qualities typically desired in each of the career cluster's pathways. CD4.a.6.h: Evaluate how self-discipline, self-worth, positive attitude and integrity displayed in a work situation affect employment status. CD4.a.7.h: Assess how flexibility and willingness to learn new knowledge and skills affect employment status. CD4.a.8.h: Apply communication strategies when adapting to a culturally diverse environment. CD4.a.9.h: Use positive work-qualities typically desired in each of the career cluster's pathways. CD4.a.10.h: Manage work roles and responsibilities to balance them with other life roles and responsibilities.
	CD4.b: Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.	CD4.b.3.m: Use technology to assist in career exploration and job-seeking activities.

		CD4.b.4.m: Compare and contrast personal attributes with employment needs and trends. CD4.b.5.h: Use multiple resources to locate job opportunities. CD4.b.6.h: Prepare a resume, cover letter, employment application. CD4.b.7.h: Employ critical thinking and decision-making skills to exhibit qualifications to a potential employer in an interview.
	CD4.c: Identify and exhibit traits for retaining employment.	CD4.c.3.m: Distinguish between appropriate behaviors in a social vs. professional setting. CD4.c.4.h: Model behaviors that demonstrate reliability and dependability. CD4.c.5.h: Maintain appropriate dress and behavior for the job to contribute to a safe and effective workplace/jobsite. CD4.c.6.h: Complete required employment forms and documentation. CD4.c.7.h: Summarize key activities necessary to retain a job in an industry.
	CD4.d: Develop positive relationships with others.	CD4.d.4.m: Use cooperative behavior in helping peers accomplish goals and tasks. CD4.d.5.h: Participate in co-curricular and community activities to enhance the school experience. CD4.d.6.h: Evaluate the best method to assist co-workers in accomplishing goals and tasks. CD4.d.7.h: Examine the skills required to enable students to successfully transition to post-secondary opportunities. CD4.d.8.h: Use a systematic approach to academic and career planning for students to achieve their learning, socio-cultural and work goals.

Wisconsin Common Career Technical Standards (WCCTS)-Environmental Health and Safety (EHS)

Standard	Learning Priority	Performance Indicators
Standard: EHS1: Students will identify the importance and interrelationships of health, safety and environmental systems and evaluate the impacts of these systems on organizational	EHS1.d: Implement personal and jobsite safety rules and regulations to maintain and improve safe and healthful working conditions and environments.	EHS1.d.5.m: Recognize and use systems in school and in the community that protect and enhance personal, environmental health and safety.

performance for continuous improvement.		EHS1.d.6.m: Discuss employee rights and responsibilities and how to apply them in a workplace setting. EHS1.d.7.h: Assess workplace conditions with regard to personal and environmental health and safety. EHS1.d.8.h: Identify different workplace systems that protect and enhance personal and environmental health and safety. EHS1.d.9.h: Describe employee rights and responsibil-ities to maintain workplace health and safety, including compliance with rules and laws.

Key Vocabulary:

Table saw	Jointer	Planer	Bandsaw
Drill press	Router	Miter saw	Jig saw
Hand tools	Stud	Flooring system	Concrete
Cement	Header	Top plate	Double top plate
Roof system	Wires	AC	DC
Circuits	Boxes	Outlet	Switches
3 way	4 way	Backing	Drywall
Drywall mud	Tape	Checking	Mortgage
Living within means	Finances	Pex	Copper
Fittings	Solder	Torch	Flint
Tile	Subfloor	Carpet	Laminate
Wood	Tree	Shrub	Annual
Perennial	Spring	Sommer	Fall
Winter			

Topics/Content Outline- Units and Themes:

Quarter 1:
- Tools and Safety
- Framing
- Electrical
- Interior Walls
- Home Finance
- Plumbing

Quarter 2:
- Heating, Ventilation, and Air Conditioning
- Tile/carpet/laminate/wood
- Landscaping
- Seasonal maintenance

- Ladder Safety
- Chainsaw safety

Primary Resource(s):	
• **Modern Carpentry, 12th Edition** Goodheart Wilcox ISBN: 978-1-63126-083-4 © 2015	• **House Wiring Simplified, 14th Edition** Goodheart Wilcox ISBN: 978-1-63126-920-2 © 2017