

EASEA Vocational Education Standards

The E. A. Sutherland Education Association (EASEA) is an accrediting agency for the supporting ministries of the Seventh-day Adventist Church. It provides a variety of services as follows:

- 1) Provides association membership to educational institutions, individuals and organizations.
- 2) Provides accreditation to schools in the State of Tennessee.
- 3) Provides accreditation to schools outside the State of Tennessee but currently unrecognized by their state.
- 4) Provides support services for the school's improvement
- 5) Facilitates teacher training for continuing education, certification and endorsements.
- 6) Plans and coordinates conferences, conventions, seminars, workshops, Bible Conferences, and training for educators.
- 7) Identifies and seeks out financial and human resources that might be beneficial to the enhancement of the membership.

HISTORICAL BACKGROUND

The development of the E.A. Sutherland Educational Association (EASEA) was sponsored by the The Layman Foundation (TLF) which was established in 1924. The purpose of TLF was to encourage the development of and provide financial assistance to self-supporting ministries in the Southern United States. The Educational design demonstrated at Madison College, located near Nashville, TN, served as a model for these emerging self-supporting ministries.

This model promoted the idea that missionary minded families should be trained in basic agriculture, construction, evangelism, school administration, healthy lifestyles and other self-sustaining skills that would enable them to launch out and support themselves and start other self-supporting ministries in new communities all over the South.

Over the years, several self-supporting ministries began and became successful in many communities throughout the South. A few examples of current ministries that grew out of this effort include: Harbert Hills Academy, Laurelbrook Academy, Heritage Academy, Advent Home Youth Services, Miracle Meadows School, Fletcher Academy and many others.

This model has worked successfully for over 80 years by integrating a holistic approach to the development of the individual's physical, mental, and spiritual faculties. The Layman Foundation has provided administrative and leadership support for this effort.

In 1991, TLF began to explore ways to develop an educational association and out of this effort, EASEA was development. In 2003, EASEA received its 501(c)(3) non-profit status and by working closely with educational officials from the State of Tennessee, in 2004, it received approval to function as a private school accreditation agency.

Since then, EASEA has been recognized as an accrediting agency for the supporting schools of the Seventh-day Adventist Church.

PHILOSOPHY

In the beginning mankind was created to experience harmonious growth in the physical, mental and spiritual faculties, and even in his perfect state, man was given the blessing of work to occupy his mind, to strengthen his body, and to develop his faculties. After sin, work became a safeguard against temptation and a means of furthering man's character development and restoring him into the image of Christ. (Education, p. 214). We believe that concurrent with our academic and religious training the youth should be trained in manual and vocational education. (Education, p. 218).

EASEA believes that useful work teaches application and industry; idleness deprives the mind. Meaningful labor engages the mind and body to develop the whole person, strengthening the character, and leaving little time to heed the temptations surrounding the youth. Students are thereby provided with a systematic approach to problem solving and develop skills in observation and paying attention to details. (Education, p. 215). The strong work ethic and vocational skills thus developed enable the student to be a valuable asset in furthering the mission emphasis of the Seventh-day Adventist Church. ((Education, p. 221).

EASEA believes that as teachers and students work side by side a mentoring relationship can be established. This relationship provides opportunities to instill in the student the value and dignity of useful labor and teach the skills that will prepare them to be responsible citizens in this world and the world to come. "A youth so trained, whatever his calling in life, so long as it is honest, will make his position one of usefulness and honor." (Education, p. 222).

PURPOSE

The purpose of this document is to provide a vocational educational curriculum that defines how member schools and institutions can incorporate work programs in their general education and spiritual curriculum. Further, this document is in compliance with government standards and regulations of safety, remuneration and other legal standards. More specifically the purpose is for students to:

- Inculcate the value and dignity of useful work.
- Develop and practice habits of success for daily life and eternal life.
- Understand the principles of Christian moral and ethical behavior in the work place.
- Recognize that whatever their vocation, their calling to share the gospel.
- Develop and practice skills in clear, effective communication.
- Inculcate the value of unity in diversity.

GOALS

A holistic approach to education will not only train in the classics but also in practical skills, such as gardening, healthcare, home making, building, etc. It is believed that this will better prepare every student for any line of work and responsibility. As Seventh-day Adventist Christians we believe we are commissioned to prepare students to live successfully in this world and the world to come. Based on this belief, by the time students graduate, they will:

- Experience a variety of occupational fields from which to choose a life work.
- Develop habits that will lead to success in any situation.
- Learn to work effectively and cooperatively with others.
- Learn principles of servant-leadership & Christian ethics.
- Obtain skills that will be a blessing not only to themselves, but to God and their fellow man.
- Learn communication skills that will enhance interpersonal and group relationships.
- Learn to assume responsibility for the safety of themselves and others.

INSTRUCTIONAL METHODOLOGY

EASEA believes that every student can be successful if they are provided learning experiences that helps them achieve their optimum potential. It is further believed that students perceive and process information in different ways. Because of this belief a variety of instructional strategies will be used in the Vocational Education Program. These strategies will included, but not be limited to, lecture, discussion, problem-solving, cooperative learning, research, demonstration, analysis/synthesis, and decision making. Application of content will be facilitated through authentic experience-based and project-based learning environments.

INSTRUCTIONAL SETTING

The standards set forth in this document may be fulfilled in a combination of educational settings, to include classroom courses, labs, and authentic experience. EASEA schools will implement these standards in a combination appropriate to their educational program.

DEFINITION

For EASEA schools vocational education primarily prepares the student to act intelligibly, responsibly, cooperatively, ethically, and morally in a work setting and give the student skills that will increase his/her usefulness in service to others. Some training areas may result in job entry skills.

RECORD KEEPING

Each school will be responsible for the documentation and record keeping of student vocational records to include: attendance record; performance record; and progress reports. Vocational records become part of the student's permanent file.

COURSE/LAB/AUTHENTIC EXPERIENCE OUTLINE

Each course/lab/authentic experience is to have a course/lab/authentic experience outline that is filed in the records office and followed in the teaching of the content.

CERTIFICATION

Each school will issue vocational certificates based on completion of standards in this document. Schools may choose to issue transcript credit for vocational lab experience and should do so in a manner that conforms to accepted educational practices.

EASEA

Vocational Education Standards

Grades 9-12

RATIONALE

EASEA Vocational Education Standards for grades 9-12 seeks to help students learn to reflect God's image by developing proficiency in different aspects of Vocational Education – understanding, applying, and experiencing.

Well developed vocational education standards embodying Seventh-day Adventist beliefs as found in the Bible and inspired writings of Ellen White are a practical tool that will help ensure that all students are prepared to engage successfully in exploring a variety of vocational options, develop the hand-mind connection, and receive training to utilize their vocational skills as an “entering wedge” to share the gospel.

An education of this kind imparts more than academic knowledge. It is a studied intentional development of the whole person as a means of preparation for earthly as well as heavenly service.

STANDARDS CODING

The standards and learning expectations have been coded so that educators can more easily refer to them in their curriculum, instruction, assessment, and professional development activities. The coding system begins with the vocational area abbreviation (**AG.4.3**). The first numeral (**AG.4.3**) refers to the standard. The second numeral (**AG.4.3**) refers to the subcategory under the standard. Below are listed the abbreviations for the vocational areas.

Agriculture	AG	Child Growth & Development	CD
Lawn & Landscaping	LL		
Gardening & Production	GP	Environmental Services	ES
Forestry	FO		
		Food Service	FS
Building Arts	BA	Baking	BK
Concrete	CO	Food Preservation	FP
Electrical I	E1	Culinary Arts	CU
Electrical II	E2		
Carpentry I	C1	Mechanical Arts	MA
Carpentry II	C2	Welding	WL
Masonry	MA	Small Engines	SE
Plumbing I	P1	Auto Mechanics	AM
Plumbing II	P2		
Heating & Ventilating	HV		

Nursing Assistant	NA	Plant Services	PS
Administrative Assistant	AA	Water Services	WS

CREDITS

The following documents were referred to for the content coverage in developing the EASEA Vocational Education Standards: State Standards for Louisiana, Montana and Tennessee; McRel Standards; SUCOE Standards.

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Vocational Education Standard – Agriculture – Forestry

Program Focus [Apply the following to each area content standard.]

- FO.1 Identify the principles of SDA Christian Values in correlation with Agriculture – Forestry.
- FO.1.01 Recognize God as creator and sustainer of the universe.
 - FO.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - FO.1.03 Develop accountability as expressed in God's Word and laws.
 - FO.1.04 Employ Christian witnessing principles in the work environment.
 - FO.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - FO.1.06 Make biblically-based choices when dealing with work related information.
 - FO.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- FO.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
- FO.2.01 Conflict resolution.
 - FO.2.02 Manage time effectively.
 - FO.2.03 Recognize relevant, ethical issues in the work environment.
 - FO.2.04 Take responsibility for mistakes and/or good work.
 - FO.2.05 Delegate duties.
 - FO.2.06 Interacts with others respectfully.
 - FO.2.07 Demonstrates character, leadership, & integrity using creative & critical-thinking skills.
- FO.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
- FO.3.01 Accept supervision willingly.
 - FO.3.02 Ask for help when needed.
 - FO.3.03 Follows directions and procedures.
 - FO.3.04 Work effectively with others in a professional setting.
 - FO.3.05 Respect the property & ideals of others.
 - FO.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)
- FO.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
- FO.4.01 Demonstrate proper telephone etiquette.
 - FO.4.02 Listen effectively.
 - FO.4.03 Organize thoughts & clearly express point of view.
 - FO.4.04 Organize thoughts & write clearly.
 - FO.4.05 Demonstrate clear, effective communications verbally & in writing.
 - FO.4.06 Write & organize records clearly.
- FO.5 Understand the principles of habits for success.
- Develop habits of success.
- FO.5.01 Demonstrate punctuality.
 - FO.5.02 Exhibit integrity & pride in workmanship.
 - FO.5.03 Demonstrate personal hygiene and cleanliness.
 - FO.5.04 Utilize time effectively & efficiently.
 - FO.5.05 Prioritize a series of tasks.
 - FO.5.06 Work within guidelines.
 - FO.5.07 Demonstrate adaptability to environment/situation.
 - FO.5.08 Practice frugality in the use material and supplies.

- FO.5.09 Demonstrates diligence & responsibility.
- FO.5.10 Demonstrates industry & perseverance.
- FO.5.11 Demonstrate attitudes conducive to workplace success.
- FO.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

- FO.6 Understand the responsibilities and procedures of safety.
- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
 - FO.6.01 Develop a positive attitude regarding safety practice & issues.
 - FO.6.02 Use and inspect personal protective equipment.
 - FO.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
 - FO.6.04 Demonstrate continuous awareness of potential hazards to self and others.
 - FO.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
 - FO.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
 - FO.6.07 Demonstrate appropriate safety procedures in a given situation.
 - FO.6.08 Pass with 100% accuracy a written examination relating to safety issues.
 - FO.6.09 Pass with 100% accuracy a performance examination relating to safety.
 - FO.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
 - FO.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.
- FO.7 Understand career opportunities and career paths.
- FO.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
 - FO.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
 - FO.7.03 Evaluate personal characteristics required for working in (name the applicable area).
 - FO.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

- FO.8 Understand basic technical skills knowledge and global considerations in the occupational area of forestry Management.
- FO.8.01 Explore careers in the world of forestry.
 - FO.8.02 Analyze methods of tree growth classification and identification of forest trees.
 - FO.8.03 Recommend basic tools and safety practices in the forestry industry.
 - FO.8.04 Employ skills necessary for surveying timber stands.
 - FO.8.05 Describe the different types of damage that occur to a forest.
 - FO.8.06 Examine methods for harvesting and transportation of timber.
 - FO.8.07 Specify various types of forest products and their use.
 - FO.8.08 Integrate academic competencies in the area of study related to forestry.
- FO.9 Utilize Grounds management knowledge and skills to apply in a experience based or school project-based learning experience.
- FO.9.01 Apply principles of grounds management to a experience-based or a school project based learning experience.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Apply personal protective equipment to each task.
- Demonstrate leadership by being on time to assignments.
- Use leadership skills in promoting diligence and responsibility for each task.
- Successfully complete an experience-based or school project-based learning experience.

Vocational Education Standard – Agriculture – Gardening and Production

Program Focus [Apply the following to each content standard.]

- GP.1 Identify the principles of SDA Christian values in correlation with Agriculture – Gardening and Crop Production.
- GP.1.01 Recognize God as creator and sustainer of the universe.
 - GP.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - GP.1.03 Develop accountability as expressed in God's Word and laws.
 - GP.1.04 Employ Christian witnessing principles in the work environment.
 - GP.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - GP.1.06 Make biblically-based choices when dealing with work related information.
 - GP.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- GP.2 Understand servant-leadership and ethical principles.
Apply principles of servant-leadership & ethical behavior to selected situations.
- GP.2.01 Conflict resolution.
 - GP.2.02 Manage time effectively.
 - GP.2.03 Recognize relevant, ethical issues in the work environment.
 - GP.2.04 Take responsibility for mistakes and/or good work.
 - GP.2.05 Delegate duties.
 - GP.2.06 Interact with others respectfully.
 - GP.2.07 Demonstrate character, leadership, & integrity using creative & critical thinking skills.
- GP.3 Understand the concept of cooperation and teamwork.
Demonstrate cooperation and teamwork skills.
- GP.3.01 Accept supervision willingly.
 - GP.3.02 Ask for help when needed.
 - GP.3.03 Follow directions and procedures.
 - GP.3.04 Work effectively with others in a professional setting.
 - GP.3.05 Respect the property & ideals of others.
 - GP.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)
- GP.4 Understand the use of communication skills –interpersonal & group; written & oral.
Use appropriate communication skills in a variety of occupational situations.
- GP.4.01 Demonstrate proper telephone etiquette.
 - GP.4.02 Listen effectively.
 - GP.4.03 Organize thoughts & clearly express point of view.
 - GP.4.04 Organize thoughts & write clearly.
 - GP.4.05 Demonstrate clear, effective communications verbally & in writing.
 - GP.4.06 Write & organize records clearly.
- GP.5 Understand the principles of habits for success.
Develop habits of success.
- GP.5.01 Demonstrate punctuality.
 - GP.5.02 Exhibit integrity & pride in workmanship.
 - GP.5.03 Demonstrate personal hygiene and cleanliness.
 - GP.5.04 Utilize time effectively & efficiently.
 - GP.5.05 Prioritize a series of tasks.
 - GP.5.06 Work within guidelines.
 - GP.5.07 Demonstrate adaptability to environment / situation.

- GP.5.08 Practice frugality in the use of material and supplies.
- GP.5.09 Demonstrate diligence & responsibility.
- GP.5.10 Demonstrate industry & perseverance.
- GP.5.11 Demonstrate attitudes conducive to workplace success.
- GP.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

GP.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- GP.6.01 Develop a positive attitude regarding safety practices & issues.
- GP.6.02 Use and inspect personal protective equipment.
- GP.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- GP.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- GP.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- GP.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- GP.6.07 Demonstrate appropriate safety procedures in a given situation.
- GP.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- GP.6.09 Pass with 100% accuracy a performance examination relating to safety.
- GP.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- GP.6.11 Accurately document inspection, maintenance, & repair of tools & equipment.

GP.7 Understand career opportunities and career paths.

- GP.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- GP.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- GP.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- GP.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

GP.8 The student will be able to understand knowledge and practices involved in gardening and crop production.

- GP.8.01 Plant anatomy and function.
- GP.8.02 Plant propagation and seed selection.
- GP.8.03 Soil analysis techniques and procedures.
- GP.8.04 Soil preparation and management.
- GP.8.05 Pest, disease, and weed identification, control, and management.
- GP.8.06 Plant water requirements and irrigation techniques.
- GP.8.07 Crop harvest and storage methods.
- GP.8.08 Crop production and marketing economic methods and considerations.
- GP.8.09 Technology as related to mechanical, electrical, chemical, and computers.

GP.9 The student will apply their understanding of gardening and crop production to interpret data and solve gardening and crop production problems.

- GP.9.01 Explain the function of plant parts related to plant anatomy.
- GP.9.02 Organize specific plants using stem, leaf, flower, and fruit morphology.

- GP.9.03 Identify weed species.
- GP.9.04 Explain plant propagation techniques and seed selection processes.
- GP.9.05 Create a planting plan and schedule.
- GP.9.06 Conduct a soil test and use the results to recommend ways to improve the soil.
- GP.9.07 Relate the principles of soil preparation as they apply to specific crops.
- GP.9.08 Compare soil drainage needs for specific crops.
- GP.9.09 Compare environmental advantages and disadvantages of tillage systems.
- GP.9.10 Recommend the correct tillage equipment to be used in land preparation for specified crops.
- GP.9.11 Develop a fertilizer plan to include appropriate timing, rate of application and type of fertilizer for maximum crop production.
- GP.9.12 Discover problems associated with fertilizer application to protect the environment.
- GP.9.13 Explain crop rotation and the impact it can have on production, pest management and weed control.
- GP.9.14 Compare the economic advantages and disadvantages of using natural pests instead of pesticides (IPM).
- GP.9.15 Evaluate the techniques used to control diseases, pests, and weeds.
- GP.9.16 Explain the importance of water, temperature, and other climatic factors involved in the production of crops.
- GP.9.17 Evaluate the latest technologies in crop production and management.
- GP.10 Utilize gardening and crop production knowledge and skills to apply in an experience –based or school project-based learning experience.
- GP.10.01 Apply principles of gardening and crop production to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Control pests and weeds.
- Prepare soil for planting various types of crops.
- Start plants for transplanting from seed.
- Apply spray to crops.
- Operate machinery and equipment for gardening activities.
- Plant, manage, and harvest a variety of crops.
- Transplant seedlings to field.

Vocational Education Standard – Agriculture – Lawn and Landscaping

Program Focus [Apply the following to each area content standard.]

- LL.1 Identify the principles of SDA Christian values in correlation with Agriculture – Grounds Management.
- LL.1.01 Recognize God as creator and sustainer of the universe.
 - LL.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - LL.1.03 Develop accountability as expressed in God's Word and laws.
 - LL.1.04 Employ Christian witnessing principles in the work environment.
 - LL.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - LL.1.06 Make biblically-based choices when dealing with work related information.
 - LL.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- LL.2 Understand servant-leadership and ethical principles.
Apply principles of servant-leadership & ethical behavior to selected situations.
- LL.2.01 Conflict resolution.
 - LL.2.02 Manage time effectively.
 - LL.2.03 Recognize relevant, ethical issues in the work environment.
 - LL.2.04 Take responsibility for mistakes and/or good work.
 - LL.2.05 Delegate duties.
 - LL.2.06 Interact with others respectfully.
 - LL.2.07 Demonstrate character, leadership, & integrity using creative & critical-thinking skills.
- LL.3 Understand the concept of cooperation and teamwork.
Demonstrate cooperation and teamwork skills.
- LL.3.01 Accept supervision willingly.
 - LL.3.02 Ask for help when needed.
 - LL.3.03 Follow directions and procedures.
 - LL.3.04 Work effectively with others in a professional setting.
 - LL.3.05 Respect the property & ideals of others.
 - LL.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)
- LL.4 Understand the use of communication skills –interpersonal & group; written & oral.
Use appropriate communication skills in a variety of occupational situations.
- LL.4.01 Demonstrate proper telephone etiquette.
 - LL.4.02 Listen effectively.
 - LL.4.03 Organize thoughts & clearly express point of view.
 - LL.4.04 Organize thoughts & write clearly.
 - LL.4.05 Demonstrate clear, effective communications verbally & in writing.
 - LL.4.06 Write & organize records clearly.
- LL.5 Understand the principles of habits for success.
Develop habits of success.
- LL.5.01 Demonstrate punctuality.
 - LL.5.02 Exhibit integrity & pride in workmanship.
 - LL.5.03 Demonstrate personal hygiene and cleanliness.
 - LL.5.04 Utilize time effectively & efficiently.
 - LL.5.05 Prioritize a series of tasks.
 - LL.5.06 Work within guidelines.

- LL.5.07 Demonstrate adaptability to environment/situation.
- LL.5.08 Practice frugality in the use of material and supplies.
- LL.5.09 Demonstrate diligence & responsibility.
- LL.5.10 Demonstrate industry & perseverance.
- LL.5.11 Demonstrate attitudes conducive to workplace success.
- LL.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

- LL.6 Understand the responsibilities and procedures of safety.
- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
 - LL.6.01 Develop a positive attitude regarding safety practice & issues.
 - LL.6.02 Use and inspect personal protective equipment.
 - LL.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
 - LL.6.04 Demonstrate continuous awareness of potential hazards to self and others.
 - LL.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
 - LL.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
 - LL.6.07 Demonstrate appropriate safety procedures in a given situation.
 - LL.6.08 Pass with 100% accuracy a written examination relating to safety issues.
 - LL.6.09 Pass with 100% accuracy a performance examination relating to safety.
 - LL.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
 - LL.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.
- LL.7 Understand career opportunities and career paths.
- LL.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
 - LL.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
 - LL.7.03 Evaluate personal characteristics required for working in (name the applicable area).
 - LL.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

- LL.8 Understand basic technical skills and knowledge in the occupational area of Grounds Management in landscaping.
- LL.8.01 Demonstrate proper use and care of grounds equipment following the manufacturer's specifications.
 - LL.8.02 Evaluate job opportunities available in landscaping.
 - LL.8.03 Discuss basic principles for the proper care of a landscape after its installation.
 - LL.8.04 Apply the techniques for selecting, planting, pruning and caring for trees and shrubs.
 - LL.8.05 Evaluate the use of various ground covers, and landscape plants; differentiating among annual, perennial, and biennial flowers.
- LL.9 Understand the basic techniques and skills needed for grounds management in lawn care
- LL.9.01 Evaluate grass selection, site selection, planting time, establishment methods, care, and fertilization.

- LL.9.02 Compare different types of grasses and describe methods of lawn installation.
- LL.9.03 Recommend techniques for mowing, trimming, weed control and watering grass for maximum growth and reproduction.
- LL.9.04 Evaluate the advantages and disadvantages of different types of irrigation systems.
- LL.10 Understand the basic design, techniques and skills needed for waste management
- LL.10.01 Describe an efficient waste management route design.
- LL.10.02 Understand and review local landfill requirements.
- LL.10.03 Identify various types of waste and methods of disposal/recycling.
- LL.10.04 Manage the care of waste receptacles.
- LL.11 Utilize Grounds management knowledge and skills to apply in a experience based or school project-based learning experience.
- LL.11.01 Apply principles of grounds management to a experience-based or a school project based learning experience.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Set up a routine maintenance schedule for all grounds equipment.
- Practice techniques of mowing, landscaping, and beautification projects.
- Successfully complete an experience-based or school project-based learning experience.
- Perform soil samples.

Vocational Education Standard – Building Arts – Carpentry I

Program Focus [Apply the following to each content standard.]

- C1.1 Identify the principles of SDA Christian values in correlation with framing and finishing.
- C1.1.01 Recognize God as creator and sustainer of the universe.
 - C1.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - C1.1.03 Develop accountability as expressed in God's word and laws.
 - C1.1.04 Employ Christian witnessing principles in the work environment.
 - C1.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - C1.1.06 Make biblically-based choices when dealing with work related information.
 - C1.1.07 Apply biblical principles of Christian morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- C1.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
 - C1.2.01 Conflict resolution.
 - C1.2.02 Recognize relevant, ethical issues in the work environment.
 - C1.2.03 Take responsibility for mistakes and/or good work.
 - C1.2.04 Delegate duties.
 - C1.2.05 Interact with others respectfully.
 - C1.2.06 Demonstrate character, leadership, & integrity using creative & critical thinking skills.
- C1.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
 - C1.3.01 Accept supervision willingly.
 - C1.3.02 Ask for help when needed.
 - C1.3.03 Follow directions and procedures.
 - C1.3.04 Work effectively with others in a professional setting.
 - C1.3.05 Respect the property & ideals of others.
 - C1.3.06 Assess implications of cultural and religious diversity for community and work places.
- C1.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
 - C1.4.01 Demonstrate proper telephone etiquette.
 - C1.4.02 Listen effectively.
 - C1.4.03 Organize thoughts & clearly express point of view.
 - C1.4.04 Organize thoughts & write clearly.
 - C1.4.05 Demonstrate clear, effective communications verbally & in writing.
 - C1.4.06 Write & organize records clearly.
- C1.5 Understand the principles of habits for success.
- Develop habits of success.
 - C1.5.01 Demonstrate punctuality.
 - C1.5.02 Exhibit integrity & pride in workmanship.
 - C1.5.03 Demonstrate personal hygiene and cleanliness.
 - C1.5.04 Utilize time effectively & efficiently.
 - C1.5.05 Prioritize a series of tasks.
 - C1.5.06 Work within guidelines.
 - C1.5.07 Demonstrate adaptability to environment/situation.
 - C1.5.08 Practice frugality in the use of material and supplies.

- C1.5.09 Demonstrate diligence & responsibility.
- C1.5.10 Demonstrate industry & perseverance.
- C1.5.11 Demonstrate attitudes conducive to workplace success.
- C1.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

C1.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- C1.6.01 Develop a positive attitude regarding safety practices & issues.
- C1.6.02 Use and inspect personal protective equipment.
- C1.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- C1.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- C1.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- C1.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- C1.6.07 Demonstrate appropriate safety procedures in a given situation.
- C1.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- C1.6.09 Pass with 100% accuracy a performance examination relating to safety.
- C1.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- C1.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.

C1.7 Understand career opportunities and career paths.

- C1.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- C1.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- C1.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- C1.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

C1.8 Interpret, layout, and fabricate in conformance to construction drawings and written specifications.

- C1.8.01 Interpret dimensions and locations of components that are explicitly dimensioned in construction drawings and written specifications.
- C1.8.02 Interpret plan and elevation views shown in construction drawings.
- C1.8.03 Recognize and correctly interpret lines and symbols commonly used in construction drawings.
- C1.8.04 Make layouts of locations and elevations of structural elements with special requirements.
- C1.8.06 Distinguish between and select various types, cuts, and grades of dimensioned lumber.
- C1.8.07 Distinguish between and select various types, cuts, and grades of manufactured and engineered wood products.
- C1.8.08 Distinguish between and select uses for various types and sizes of fastening systems (e.g. nails, bolts, and screws, etc.).

C1.9 Use appropriate hand and power tools to safely achieve industry accepted results.

- C1.9.01 Identify hand tools, portable power tools, and stationary power tools.

- C1.9.02 Explain the safe operation of hand tools, portable power tools, and stationary power tools.
- C1.9.03 Demonstrate proper use of hand tools, portable power tools, and stationary power tools.
- C1.10 Compare and contrast post-and-beam structures, platform structures, load bearing walls, panel walls, and curtain walls.
 - C1.10.01 Distinguish between post-and-beam and platform structures whether executed in wood or steel.
 - C1.10.02 Plan the proper sequence of assembly for a multi-story post-and-beam structure.
 - C1.10.03 Plan the proper sequence of assembly for a multi-story platform structure.
 - C1.10.04 Analyze structural differences between load-bearing, panel, and curtain walls.
- C1.11 Compare and contrast dimensioned lumber, engineered shapes, and trussed structures for load-bearing span applications.
 - C1.11.01 Distinguish between dimensioned lumber, engineered shapes, and fabricated trusses.
 - C1.11.02 Compare and contrast dimensioned lumber, engineered shapes, and fabricated trusses for load-bearing span applications.
- C1.12 Demonstrate the importance of bridging and diagonal bracing of floor and wall structures.
 - C1.12.01 Demonstrate the necessity for bridge bracing between primary structural elements.
 - C1.12.02 Demonstrate the necessity for diagonal bracing in wall structures.
 - C1.12.03 Demonstrate the necessity for fire stop walls between primary structural elements.
- C1.13 Utilize carpentry knowledge and skills to apply in an experienced-based or school project-based learning experience.
 - C1.13.01 Apply principals of carpentry to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

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Vocational Education Standards – Building Arts –Carpentry II

Program Focus [Apply the following to each content standard.]

- C2.1 Identify the principles of SDA Christian values in correlation with framing and finishing.
- C2.1.01 Recognize God as creator and sustainer of the universe.
 - C2.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - C2.1.03 Develop accountability as expressed in God's word and laws.
 - C2.1.04 Employ Christian witnessing principles in the work environment.
 - C2.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - C2.1.06 Make biblically-based choices when dealing with work related information.
 - C2.1.07 Apply biblical principles of Christian morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- C2.2 Understand servant-leadership and ethical principles.
Apply principles of servant-leadership & ethical behavior to selected situations.
- C2.2.01 Conflict resolution.
 - C2.2.02 Recognize relevant, ethical issues in the work environment.
 - C2.2.03 Take responsibility for mistakes and/or good work.
 - C2.2.04 Delegate duties.
 - C2.2.05 Interacts with others respectfully.
 - C2.2.06 Demonstrate character, leadership, & integrity using creative & critical thinking skills.
- C2.3 Understand the concept of cooperation and teamwork.
Demonstrate cooperation and teamwork skills.
- C2.3.01 Accept supervision willingly.
 - C2.3.02 Ask for help when needed.
 - C2.3.03 Follow directions and procedures.
 - C2.3.04 Work effectively with others in a professional setting.
 - C2.3.05 Respect the property & ideals of others.
 - C2.3.06 Assess implications of cultural and religious diversity for community and work places.
- C2.4 Understand the use of communication skills –interpersonal & group; written & oral.
Use appropriate communication skills in a variety of occupational situations.
- C2.4.01 Demonstrate proper telephone etiquette.
 - C2.4.02 Listen effectively.
 - C2.4.03 Organize thoughts & clearly express point of view.
 - C2.4.04 Organize thoughts & write clearly.
 - C2.4.05 Demonstrate clear, effective communications verbally & in writing.
 - C2.4.06 Write & organize records clearly.
- C2.5 Understand the principles of habits for success.
Develop habits of success.
- C2.5.01 Demonstrate punctuality.
 - C2.5.02 Exhibit integrity & pride in workmanship.
 - C2.5.03 Demonstrate personal hygiene and cleanliness.
 - C2.5.04 Utilize time effectively & efficiently.
 - C2.5.05 Prioritize a series of tasks.
 - C2.5.06 Work within guidelines.
 - C2.5.07 Demonstrate adaptability to environment/situation.
 - C2.5.08 Practice frugality in the use of material and supplies.

- C2.5.09 Demonstrate diligence & responsibility.
 - C2.5.10 Demonstrate industry & perseverance.
 - C2.5.11 Demonstrate attitudes conducive to workplace success.
 - C2.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.
- C2.6 Understand the responsibilities and procedures of safety.
- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
 - C2.6.01 Develop a positive attitude regarding safety practices & issues.
 - C2.6.02 Use and inspect personal protective equipment.
 - C2.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
 - C2.6.04 Demonstrate continuous awareness of potential hazards to self and others.
 - C2.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
 - C2.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
 - C2.6.07 Demonstrate appropriate safety procedures in a given situation.
 - C2.6.08 Pass with 100% accuracy a written examination relating to safety issues.
 - C2.6.09 Pass with 100% accuracy a performance examination relating to safety.
 - C2.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
 - C2.6.11 Accurately document inspection, maintenance, & repair of tools & equipment.
- C2.7 Understand career opportunities and career paths.
- C2.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
 - C2.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
 - C2.7.03 Evaluate personal characteristics required for working in (name the applicable area).
 - C2.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

- C2.8 Interpret, layout, and fabricate in conformance to construction drawings and written specifications.
- C2.8.01 Scale dimensions that are not explicitly included in construction drawings.
 - C2.8.02 Interpret plan and evaluate views shown in construction drawings.
 - C2.8.03 Recognize and interpret lines and symbols commonly used in construction drawings.
- C2.9 Install windows and doors in residential and commercial structures.
- C2.9.01 Compare and contrast various types of windows and doors used in residential and commercial structures.
 - C2.9.02 Comprehend and interpret fire rating information on the door schedule included in construction plans.
 - C2.9.03 Install interior and exterior pre-hung doors, with weather-stripping and locksets where applicable.
 - C2.9.04 Install pre-hung windows.

- C2.10 Explore the geometry and methods of fabrication of stairs.
 - C2.10.01 Compare and contrast various types of stair construction used in residential and commercial structures.
 - C2.10.02 Determine unit rise and unit run, and compare to appropriate building code standards.
 - C2.10.03 Interpret construction drawings of stairs.
 - C2.10.04 Construct all or part of a stair, based on construction drawings.
- C2.11 Install, finish, and repair gypsum wallboard.
 - C2.11.01 Compare and contrast the various types and uses of gypsum wallboard.
 - C2.11.02 Install gypsum wallboard using proper fasteners.
 - C2.11.03 Finish a gypsum wallboard installation.
 - C2.11.04 Repair a damaged gypsum wallboard.
- C2.12 Install trim on doors, windows, and other features.
 - C2.12.01 Differentiate between common types of molding and their typical uses.
 - C2.12.02 Install trim on doors, windows, and other features.
- C2.13 Perform site layouts.
 - C2.13.01 Make site plan layouts using dimensions from site plans.
 - C2.13.02 Measure and lay out elevations and grades.
 - C2.13.03 Measure vertical and horizontal angles using transits or theodolites.
- C2.14 Complete exterior finish work on residential and commercial structures.
 - C2.14.01 Use equipment and procedures to mitigate hazards unique to exterior finish work.
 - C2.14.02 Continually assess wind and weather conditions, as they affect the safety of worker, and mitigate risks where possible.
 - C2.14.03 Correctly install flashing and other waterproofing components, as detailed in construction drawings and specifications.
 - C2.14.04 Correctly install selected common cortices.
 - C2.14.05 Correctly install selected common wood sidings.
 - C2.14.06 Correctly install selected manufactured product sidings.
 - C2.14.07 Correctly select types of gutters and downspouts.
- C2.15 Describe the need for and methods of achieving thermal and moisture protection.
 - C2.15.01 Calculate R-values for specified wall designs.
 - C2.15.02 Describe the need for and typical methods for implementing attic ventilation.
 - C2.15.03 Describe the need for and typical methods for providing vapor barriers on floors, walls, ceilings, and roofs.
- C2.16 Utilize carpentry knowledge and skills to apply in an experienced-based or school project-based learning experience.
 - C2.16.01 Apply principals of carpentry to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

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Vocational Education Standard – Building Arts – Concrete

Program Focus [Apply the following to each content standard.]

- CO.1 Identify the principles of SDA Christian values in correlation with building arts.
- CO.1.01 Recognize God as creator and sustainer of the universe.
 - CO.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - CO.1.03 Develop accountability as expressed in God's Word and laws.
 - CO.1.04 Employ Christian witnessing principles in the work environment.
 - CO.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - CO.1.06 Make biblically-based choices when dealing with work related information.
 - CO.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- CO.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
- CO.2.01 Conflict resolution.
 - CO.2.02 Manage time effectively.
 - CO.2.03 Recognize relevant, ethical issues in the work environment.
 - CO.2.04 Take responsibility for mistakes and/or good work.
 - CO.2.05 Delegate duties.
 - CO.2.06 Interact with others respectfully.
 - CO.2.07 Demonstrate character, leadership, & integrity using creative & critical thinking skills.
- CO.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
- CO.3.01 Accept supervision willingly.
 - CO.3.02 Ask for help when needed.
 - CO.3.03 Follow directions and procedures.
 - CO.3.04 Work effectively with others in a professional setting.
 - CO.3.05 Respect the property & ideals of others.
 - CO.3.06 Assess implications of cultural and religious diversity for community and work places.
- CO.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
- CO.4.01 Demonstrate proper telephone etiquette.
 - CO.4.02 Listen effectively.
 - CO.4.03 Organize thoughts & clearly express point of view.
 - CO.4.04 Organize thoughts & write clearly.
 - CO.4.05 Demonstrate clear, effective communications verbally & in writing.
 - CO.4.06 Write & organize records clearly.
- CO.5 Understand the principles of habits for success.
- Develop habits of success.
- CO.5.01 Demonstrate punctuality.
 - CO.5.02 Exhibit integrity & pride in workmanship.
 - CO.5.03 Demonstrate personal hygiene and cleanliness.
 - CO.5.04 Utilize time effectively & efficiently.
 - CO.5.05 Prioritize a series of tasks.
 - CO.5.06 Work within guidelines.
 - CO.5.07 Demonstrate adaptability to environment / situation.

- CO.5.08 Practice frugality in the use of material and supplies.
- CO.5.09 Demonstrate diligence & responsibility.
- CO.5.10 Demonstrate industry & perseverance.
- CO.5.11 Demonstrate attitudes conducive to workplace success.
- CO.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

CO.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- CO.6.01 Develop a positive attitude regarding safety practices & issues.
- CO.6.02 Use and inspect personal protective equipment.
- CO.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- CO.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- CO.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- CO.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- CO.6.07 Demonstrate appropriate safety procedures in a given situation.
- CO.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- CO.6.09 Pass with 100% accuracy a performance examination relating to safety.
- CO.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- CO.6.11 Accurately document inspection, maintenance, & repair of tools & equipment.

CO.7 Understand career opportunities and career paths.

- CO.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- CO.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- CO.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- CO.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

CO.8 Interpret, layout, and fabricate in conformance to construction drawings and written specifications.

- CO.8.01 Interpret dimensions and locations of components that are explicitly dimensioned in construction drawings and written specifications.
- CO.8.02 Interpret plan and elevation views shown in construction drawings.
- CO.8.03 Recognize and correctly interpret lines and symbols commonly used in construction drawings.
- CO.8.04 Scale dimensions that are not explicitly included in construction drawings.
- CO.8.05 Make layouts of locations and elevations of concrete structural elements and reinforcements.

CO.9 Analyze the composition of concrete mixtures and relate the variations in mixtures to the properties of concrete.

- CO.9.01 Analyze the choices of aggregate available to make concrete and their relative costs.
- CO.9.02 Explain the production methods, chemical reactions, and properties of hydraulic (Portland) cement.

- CO.9.03 Examine the various types of aggregate used to make concrete and their applications.
- CO.9.04 Relate variations in the composition of concrete with the compressive strength of concrete.
- CO.10 Analyze and apply the design principles of reinforced concrete structural members.
 - CO.10.01 Compare and contrast compressive and tensile strengths of materials.
 - CO.10.02 Compare and contrast the regions of compression and tension in various beams, columns, and slabs.
 - CO.10.03 Relate the placement of reinforcing steel in concrete to the distribution of compression and tension in structures.
 - CO.10.04 Quantify the maximum reaction forces and moments that could be developed by simple reinforced concrete beams and columns.
- CO.11 Demonstrate foundation layout, form construction, and reinforcement placement.
 - CO.11.01 Perform site layout based on control points and construction drawings.
 - CO.11.02 Construct forms for on-grade slab and beam foundations.
 - CO.11.03 Place and secure reinforcement as detailed by construction drawings and specifications.
- CO.12 Explain and demonstrate techniques for placing concrete.
 - CO.12.01 Compare and contrast techniques for moving concrete to the point of placement.
 - CO.12.02 Explain and demonstrate the requirements of good artisanship in placing concrete in forms.
 - CO.12.03 Explain and demonstrate techniques for consolidating concrete.
 - CO.12.04 Explain and demonstrate common hand and power tools and processes to finish concrete.
- CO.13 Describe and demonstrate techniques for curing concrete.
 - CO.13.01 Explain and demonstrate the effects of curing time on ultimate strength and abrasion resistance.
 - CO.13.02 Explain and demonstrate techniques for optimum curing under all weather conditions.
- CO.14 Perform common tests on concrete and components.
 - CO.14.01 Perform slump tests and apply acceptance criteria on concrete.
 - CO.14.02 Cast, cure, and test concrete samples for compressive strength.
 - CO.14.03 Test aggregates for size distribution and density.
- CO.15 Analyze the loads that act on concrete structures.
 - CO.15.01 Analyze vertical loads on masonry structures.
 - CO.15.02 Analyze lateral loads on masonry structures.
 - CO.15.03 Analyze how masonry structures develop reaction to applied loads.
- CO.16 Describe common surface defects and demonstrate ways to repair them.
 - CO.16.01 Identify common concrete defects found in existing structures.
 - CO.16.02 Describe and demonstrate appropriate methods for repairing defects in concrete structures.
- CO.17 Utilize concrete construction knowledge and skills to apply in an experience –based or school project-based learning experience.
 - CO.17.01 Apply principles of concrete construction to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Set up batter boards, foundation lines, and grade stakes for a residential or small commercial building.
- Demonstrate placing, consolidating, finishing, and curing a small concrete slab.
- Demonstrate the adverse effects of rapid surface drying of concrete slab.
- Design a cost effective 4700-psi concrete for use in your local area.
- Make repeated field trips to a large-scale local construction project to observe concrete construction in progressive stages.
- Inspect existing concrete work around your school for defects and identify root causes for any defects found.

Vocational Education Standard – Building Arts – Electrical I

Program Focus [Apply the following to each content standard.]

- E1.1 Identify the principles of SDA Christian values in correlation with building arts.
- E1.1.01 Recognize God as creator and sustainer of the universe.
 - E1.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - E1.1.03 Develop accountability as expressed in God's Word and laws.
 - E1.1.04 Employ Christian witnessing principles in the work environment.
 - E1.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - E1.1.06 Make biblically-based choices when dealing with work related information.
 - E1.1.07 Apply biblical principles of Christian morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- E1.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
- E1.2.01 Conflict resolution.
 - E1.2.02 Manage time effectively.
 - E1.2.03 Recognize relevant, ethical issues in the work environment.
 - E1.2.04 Take responsibility for mistakes and/or good work.
 - E1.2.05 Delegate duties.
 - E1.2.06 Interact with others respectfully.
 - E1.2.07 Demonstrate character, leadership, & integrity using creative & critical-thinking skills.
- E1.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
- E1.3.01 Accept supervision willingly.
 - E1.3.02 Ask for help when needed.
 - E1.3.03 Follow directions and procedures.
 - E1.3.04 Work effectively with others in a professional setting.
 - E1.3.05 Respect the property & ideals of others.
 - E1.3.06 Assess implications of cultural and religious diversity for community and work places.
- E1.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
- E1.4.01 Demonstrate proper telephone etiquette.
 - E1.4.02 Listen effectively.
 - E1.4.03 Organize thoughts & clearly express point of view.
 - E1.4.04 Organize thoughts & write clearly.
 - E1.4.05 Demonstrate clear, effective communications verbally & in writing.
 - E1.4.06 Write & organize records clearly.
- E1.5 Understand the principles of habits for success.
- Develop habits of success.
- E1.5.01 Demonstrate punctuality.
 - E1.5.02 Exhibit integrity & pride in workmanship.
 - E1.5.03 Demonstrate personal hygiene and cleanliness.
 - E1.5.04 Utilize time effectively & efficiently.
 - E1.5.05 Prioritize a series of tasks.
 - E1.5.06 Work within guidelines.
 - E1.5.07 Demonstrate adaptability to environment / situation.
 - E1.5.08 Practice frugality in the use material and supplies.

- E1.5.09 Demonstrate diligence & responsibility.
- E1.5.10 Demonstrate industry & perseverance.
- E1.5.11 Demonstrate attitudes conducive to workplace success.
- E1.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

- E1.6 Understand the responsibilities and procedures of safety.
- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
 - E1.6.01 Develop a positive attitude regarding safety practices & issues.
 - E1.6.02 Use and inspect personal protective equipment.
 - E1.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
 - E1.6.04 Demonstrate continuous awareness of potential hazards to self and others.
 - E1.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
 - E1.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
 - E1.6.07 Demonstrate appropriate safety procedures in a given situation.
 - E1.6.08 Pass with 100% accuracy a written examination relating to safety issues.
 - E1.6.09 Pass with 100% accuracy a performance examination relating to safety.
 - E1.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
 - E1.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.
- E1.7 Understand career opportunities and career paths.
- E1.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
 - E1.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
 - E1.7.03 Evaluate personal characteristics required for working in (name the applicable area).
 - E1.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

- E1.8 Analyze & relate the risk when working with electrical systems.
- E1.8.01 Evaluate the potential risk of injury from electrical shock, burns, and arc blasts.
 - E1.8.02 Research various types, applications, and care of protective equipment for electrical workers.
 - E1.8.03 Practice safety policies & standards.
 - E1.8.04 Evaluate the potential risk of injury from non-electrical risks.
- E1.9 Identify, select, use, maintain, & store tools, instruments, & equipment used in the electrical industry.
- E1.9.01 Illustrate the function & purpose of electrical hand & power tools.
 - E1.9.02 Select meters & instruments of the electrical industry for a specific job.
 - E1.9.03 Demonstrate the correct use, storage and care of electrical equipment.
 - E1.9.04 Properly maintain & store electrical hand tools.

- E1.10 Relate knowledge & skill pertaining to electrical systems.
 - E1.10.01 Explain the basic characteristics of electricity.
 - E1.10.02 Apply Ohm's law to electrical & systems.
 - E1.10.03 Examine electrical circuits & components.
 - E1.10.04 Apply basic control wiring & wiring processes used in the electrical industry.
 - E1.10.05 Explain the role of electron flow as it relates to electricity.
- E1.11 Analyze & install over-current protective devices, such as fuses & circuit breakers.
 - E1.11.01 Compare the characteristics & uses of fuses & circuit breakers.
 - E1.11.02 Identify physical examples of fuses & breakers.
 - E1.11.03 Demonstrate the installation, wiring, testing, & operation of fuses & breakers in both single & three-phase circuits.
- E1.12 Analyze electrical grounding practice & demonstrate correct grounding in accordance with the National Electrical Code (NEC).
 - E1.12.01 Evaluate the need for electrical grounding, as related to prevention of electrical shock.
 - E1.12.02 Utilize effective grounding practices, as prescribed by the NEC.
 - E1.12.03 Analyze ground elements for services, such as water pipes & grounding electrodes.
- E1.13 Demonstrate splicing, terminating, and insulating of conductors.
 - E1.13.01 Research NEC and local code requirements for splicing, terminating, & insulating of conductors.
 - E1.13.02 Demonstrate splicing, terminating, & insulating of conductors.
- E1.14 Select & install common types of conduit & conductors in accordance with NEC & local codes.
 - E1.14.01 Select type & size of conduit for given electrical installations in accordance with NEC & local codes.
 - E1.14.02 Select type & size of conductors for a given electrical installation in accordance with NEC & local codes.
 - E1.14.03 Physically identify conductors & cables by accepted industry designation & suitability under NEC.
 - E1.14.04 Connect conductors according to NEC & local codes.
 - E1.14.05 Demonstrate electrical installations with electrical metal tubing (EMT) & polyvinyl chloride (PVC) conduit.
 - E1.14.06 Demonstrate electrical installations with intermediate metal conduit (IMC) & rigid conduit.
 - E1.14.07 Plan, set up, & demonstrate a cable pull through assorted conduit and cable trays configurations.
 - E1.14.08 Pull conductors into conduits & raceways.
- E1.15 Identify switches, receptacles, & label disconnect devices as specified by NEC & OSHA.
 - E1.15.01 Determine type & location of electrical receptacles & switches, as appropriate for use & required by NEC.
 - E1.15.02 Analyze requirements for proper labeling of disconnect devices as specified by NEC & OSHA.
 - E1.15.03 Evaluate switch enclosures as to type & intended use & National Electrical Manufacturers Association (NEMA) classification.
 - E1.15.04 Evaluate receptacles & switches based on voltage & current capacities.
 - E1.15.05 Demonstrate proper wiring techniques when terminating conductors & devices.
- E1.16 Utilize electrical knowledge and skills to apply in an experience-based or school project-based learning experience.
 - E1.16.01 Apply principles of residential wiring to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Selects, inspects, & uses personal protective equipment, such as rubber gloves, & head, eye, & face protection.
- Identifies possible risks & completes reports of safety violations.
- Selects the appropriate tool for a given task.
- Demonstrates how to use tools to perform maintenance, fabrication, or installation tasks.
- Selects & demonstrates the correct use & storage of a given electrical meter, instrument and/or equipment.
- Follows proper use, care, & maintenance procedures for electrical hand tools.
- Select & use appropriate instruments & meters to measure watts, volts, Ohms, & amps.
- Demonstrate the proper use of an ammeter, ohmmeter, voltmeter, & wattmeter.
- Construct series & parallel circuits.
- Select proper fuse or breaker for a given size wire.
- Wire & test electrical switches & devices used in a typical system or job.
- Identify the different types of electrical switches & components by rating & appearance.
- Justifies a specific choice of fuse or circuit breaker for over-current protection.
- Installs, connects, and tests fuses and/or circuit breakers.
- Remove, tests for continuity, & reinstall fuses in three-phase disconnect switches.
- Inspects extension cords for proper ground continuity before use with power tools that are not double insulated, taking needed remedial action.
- Distinguishes between ground wires & neutral wires.
- Demonstrate connection of ground wires & installation of bonding straps.
- Chooses appropriate ground wire sizes for making connections in a given situation.
- Explains which crimp-on wire lugs or mechanical compression connectors are acceptable in various situations.
- Evaluates insulation systems applicable to common splices & terminations.
- Completes multiple wire connections using proper size wire nuts.
- Demonstrates wire terminations & splices using proper crimp-on wire lugs & mechanical compression connectors.
- Given termination points & obstacles, map an optimum route, make bends & cuts, install, & secure the conduit with proper clamps.
- Pull multiple conductors through conduit runs in residential & commercial mockups.
- Given a floor plan for a single-family residence, describe type & location of switches & receptacles, as reasonable for use & required by NEC.
- Selects & installs switch enclosures based on type & intended use.
- Selects & installs receptacles based on voltage & current capacities.
- Terminates receptacles, switches, & other devices.
- Appraise the detail of specified routing & structural supports for conduit runs shown in construction drawings.

Vocational Education Standard – Building Arts – Electrical II

Program Focus [Apply the following to each content standard.]

- E2.1 Identify the principles of SDA Christian values in correlation with building arts.
- E2.1.01 Recognize God as creator and sustainer of the universe.
 - E2.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - E2.1.03 Develop accountability as expressed in God's Word and laws.
 - E2.1.04 Employ Christian witnessing principles in the work environment.
 - E2.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - E2.1.06 Make biblically-based choices when dealing with work related information.
 - E2.1.07 Apply biblical principles of Christian morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- E2.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
 - E2.2.01 Conflict resolution.
 - E2.2.02 Manage time effectively.
 - E2.2.03 Recognize relevant, ethical issues in the work environment.
 - E2.2.04 Take responsibility for mistakes and/or good work.
 - E2.2.05 Delegate duties.
 - E2.2.06 Interact with others respectfully.
 - E2.2.07 Demonstrate character, leadership, & integrity using creative & critical-thinking skills.
- E2.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
 - E2.3.01 Accept supervision willingly.
 - E2.3.02 Ask for help when needed.
 - E2.3.03 Follow directions and procedures.
 - E2.3.04 Work effectively with others in a professional setting.
 - E2.3.05 Respect the property & ideals of others.
 - E2.3.06 Assess implications of cultural and religious diversity for community and work places.
- E2.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
 - E2.4.01 Demonstrate proper telephone etiquette.
 - E2.4.02 Listen effectively.
 - E2.4.03 Organize thoughts & clearly express point of view.
 - E2.4.04 Organize thoughts & write clearly.
 - E2.4.05 Demonstrate clear, effective communications verbally & in writing.
 - E2.4.06 Write & organize records clearly.
- E2.5 Understand the principles of habits for success.
- Develop habits of success.
 - E2.5.01 Demonstrate punctuality.
 - E2.5.02 Exhibit integrity & pride in workmanship.
 - E2.5.03 Demonstrate personal hygiene and cleanliness.
 - E2.5.04 Utilize time effectively & efficiently.
 - E2.5.05 Prioritize a series of tasks.
 - E2.5.06 Work within guidelines.
 - E2.5.07 Demonstrate adaptability to environment / situation.
 - E2.5.08 Practice frugality in the use of material and supplies.

- E2.5.09 Demonstrate diligence & responsibility.
 - E2.5.10 Demonstrate industry & perseverance.
 - E2.5.11 Demonstrate attitudes conducive to workplace success.
 - E2.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.
- E2.6 Understand the responsibilities and procedures of safety.
- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
 - E2.6.01 Develop a positive attitude regarding safety practices & issues.
 - E2.6.02 Use and inspect personal protective equipment.
 - E2.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
 - E2.6.04 Demonstrate continuous awareness of potential hazards to self and others.
 - E2.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
 - E2.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
 - E2.6.07 Demonstrate appropriate safety procedures in a given situation.
 - E2.6.08 Pass with 100% accuracy a written examination relating to safety issues.
 - E2.6.09 Pass with 100% accuracy a performance examination relating to safety.
 - E2.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
 - E2.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.
- E2.7 Understand career opportunities and career paths.
- E2.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
 - E2.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
 - E2.7.03 Evaluate personal characteristics required for working in (name the applicable area).
 - E2.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

- E2.8 Interpret, layout, & fabricate in conformance to construction drawings & written specifications.
- E2.8.01 Interpret dimensions & locations of components that are explicitly dimensioned in construction drawings & written specifications.
 - E2.8.02 Interpret plan & elevation views shown in construction drawings.
 - E2.8.03 Recognize & correctly interpret lines & symbols commonly used in construction drawings.
 - E2.8.04 Make layouts of locations & elevations of structural elements, such as forms & electrical & plumbing stub-ups, based on job site control points on construction drawings.
- E2.9 Calculate load & required conductor size & over-current protection for branch circuits.
- E2.9.01 Calculate loads for single-phase & three-phase branch circuits.
 - E2.9.02 Size branch-circuit over-current protection devices & conductors for non-continuous & continuous-duty circuits.
 - E2.9.03 Locate over-current protection devices based on NEC rules.
 - E2.9.04 Calculate resistance of conductors.
 - E2.9.05 Choose the appropriate conductor size to compensate for voltage drop.
 - E2.9.06 Select conductors with properties appropriate to the application.

- E2.10 Analyze and properly employ over-current protection devices.
 - E2.10.01 Distinguish between overload and short-circuit current.
 - E2.10.02 Distinguish between current rating and interrupting capacity of a breaker or fuse.
 - E2.10.03 Choose an over-current protection device or combination of devices adequate to protect circuit components.

- E2.11 Size raceways, boxes, & fittings based on fill & bend requirements.
 - E2.11.01 Size & install raceways, pull boxes, outlet boxes, & junction boxes in accordance with NEC requirements for conductor bend radius & raceway fill limitations.
 - E2.11.02 Size & install raceways, pull boxes, outlet boxes, & junction boxes to facilitate practical conductor installation, splicing, & terminations.

- E2.12 Analyze the requirements of and install residential electrical systems.
 - E2.12.01 Calculate electrical loads based on information in residential blueprints.
 - E2.12.02 Design residential service equipment based on residential blueprints and applicable requirements.
 - E2.12.03 Install all components typical of residential electrical systems.

- E2.13 Analyze, design, & assemble both single & three-phase AC circuits.
 - E2.13.01 Research the effects of parameters unique to AC circuits, such as inductance, capacitance, reactance, impedance, AC power, & power factor.
 - E2.13.02 Determine the power factor of a circuit.
 - E2.13.03 Evaluate the construction & operations of transformers, both single phase & three-phase.

- E2.14 Install commercial electrical services or mockups.
 - E2.14.01 Install a three-phase load center, disconnects, meter equipment, a services entrance, and ground systems.
 - E2.14.02 Install and connect star-and delta-connected three-phase service equipment.
 - E2.14.03 Install and connect current and potential transformers in a commercial mockup.
 - E2.14.04 Correctly wire three-phase 277volt services with combined lighting and motor loads.

- E2.15 Analyze, install, & troubleshoot lighting systems.
 - E2.15.01 Distinguish between incandescent, fluorescent & high-intensity discharge (HID) & describe how each operates.
 - E2.15.02 Compare & contrast the advantages & disadvantages of incandescent, fluorescent, & HID lighting systems.
 - E2.15.03 Install & wire incandescent, fluorescent, HID lighting systems.
 - E2.15.04 Troubleshoot fluorescent & HID lighting systems.

- E2.16 Analyze the theory of electric motors and install motors in accordance with industry requirements.
 - E2.16.01 Select and identify a motor based on its intended use.
 - E2.16.02 Determine the installation requirements to satisfy National Electrical Code (NEC) and Occupational Safety and Health Administration (OSHA) regulations, given a motor and specified application.
 - E2.16.03 Select, install, and wire DC, single-phase, and three phase-electric motors.

- E2.17 Utilize electrical knowledge and skills to apply in an experience-based or school project-based learning experience.
 - E2.17.01 Apply principles of residential wiring to an experience-based or school project-based learning situation.

Sample Performance Tasks

- Given a set of plans & specifications for a residential, identify the locations of electrical elements not explicitly dimensioned.
- Determine locations of plumbing & electrical stub-ups, based on construction drawings & measurements from structure layout.
- Calculate the branch circuit load for a specified residential structure.
- Identify the physical location of over-current protection devices for a proposed feeder circuit.
- Calculates the electrical resistance of a conductor, given material, length, & conductor size.
- Determine the conduit run required to supply a feeder circuit for a proposed 20-ton AC unit for the school. Be expected to determine details such as the route and size of conduit, pull boxes, junction boxes, disconnects, and so forth based on their survey or blueprint analysis of the building. Factors to consider can include practicality, cost, aesthetics, etc.
- Calculates inductance of simple air-core coil configurations.
- Calculates the reactance produced by an inductor or a capacitor.
- Calculates the impedance produced by an inductor or a capacitor.
- Calculates the impedance of a circuit containing inductive reactance, capacitive reactance, & resistance.
- Calculates & measures the voltages & currents in three-phase circuits.
- Select a lighting system for a specified application, using criteria such as initial cost, operating cost, & maintenance cost.
- Install a incandescent, fluorescent light fixtures and/or HID light fixtures.

Vocational Education Standard – Building Arts – Heating, Ventilation, Air Conditioning, and Refrigeration

Program Focus [Apply the following to each content standard.]

- HV.1 Identify the principles of SDA Christian values in correlation with the heating, ventilation, air conditioning, and refrigeration industry.
- HV.1.01 Recognize God as creator and sustainer of the universe.
 - HV.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - HV.1.03 Develop accountability as expressed in God's Word and laws.
 - HV.1.04 Employ Christian witnessing principles in the work environment.
 - HV.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - HV.1.06 Make biblically-based choices when dealing with work related information.
 - HV.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- HV.2 Understand servant-leadership and ethical principles.
Apply principles of servant-leadership & ethical behavior to selected situations.
- HV.2.01 Conflict resolution.
 - HV.2.02 Manage time effectively.
 - HV.2.03 Recognize relevant, ethical issues in the work environment.
 - HV.2.04 Take responsibility for mistakes and/or good work.
 - HV.2.05 Delegate duties.
 - HV.2.06 Interact with others respectfully.
 - HV.2.07 Demonstrate character, leadership, & integrity using creative & critical thinking skills.
- HV.3 Understand the concept of cooperation and teamwork.
Demonstrate cooperation and teamwork skills.
- HV.3.01 Accept supervision willingly.
 - HV.3.02 Ask for help when needed.
 - HV.3.03 Follow directions and procedures.
 - HV.3.04 Work effectively with others in a professional setting.
 - HV.3.05 Respect the property & ideals of others.
 - HV.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)
- HV.4 Understand the use of communication skills –interpersonal & group; written & oral.
Use appropriate communication skills in a variety of occupational situations.
- HV.4.01 Demonstrate proper telephone etiquette.
 - HV.4.02 Listen effectively.
 - HV.4.03 Organize thoughts & clearly express point of view.
 - HV.4.04 Organize thoughts & write clearly.
 - HV.4.05 Demonstrate clear, effective communications verbally & in writing.
 - HV.4.06 Write & organize records clearly.
- HV.5 Understand the principles of habits for success.
Develop habits of success.
- HV.5.01 Demonstrate punctuality.
 - HV.5.02 Exhibit integrity & pride in workmanship.
 - HV.5.03 Demonstrate personal hygiene and cleanliness.
 - HV.5.04 Utilize time effectively & efficiently.
 - HV.5.05 Prioritize a series of tasks.
 - HV.5.06 Work within guidelines.

- HV.5.07 Demonstrate adaptability to environment / situation.
- HV.5.08 Practice frugality in the use of material and supplies.
- HV.5.09 Demonstrate diligence & responsibility.
- HV.5.10 Demonstrate industry & perseverance.
- HV.5.11 Demonstrate attitudes conducive to workplace success.
- HV.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

HV.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- HV.6.01 Develop a positive attitude regarding safety practices & issues.
- HV.6.02 Use and inspect personal protective equipment.
- HV.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- HV.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- HV.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- HV.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- HV.6.07 Demonstrate appropriate safety procedures in a given situation.
- HV.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- HV.6.09 Pass with 100% accuracy a performance examination relating to safety.
- HV.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- HV.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.

HV.7 Understand career opportunities and career paths.

- HV.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- HV.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- HV.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- HV.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

HV.8 Identify, select, use, maintain, and store tools, instruments, and equipment used in the heating, ventilation, air conditioning, and refrigeration industry.

- HV.8.01 Illustrate the function and purpose of heating, ventilation, air conditioning, and refrigeration hand and power tools.
- HV.8.02 Select meters and instruments of the heating, ventilation, air conditioning, and refrigeration industry for a specific job.
- HV.8.03 Demonstrate the correct use, storage and care of heating, ventilation, air conditioning, and refrigeration equipment.
- HV.8.04 Properly maintain and store heating, ventilation, air conditioning, and refrigeration hand tools.

HV.9 Analyze and implement procedures to mitigate hazards associated with heating, ventilation, air conditioning, and refrigeration work.

- HV.9.01 Evaluate and mitigate the potential risk of injury from electrical shock, burns, frostbite, and moving parts for a given task.

- HV.9.02 Use and care for protective equipment for heating, ventilation, air conditioning, and refrigeration workers.
 - HV.9.03 Follow procedures for maintaining a breathable atmosphere when working on heating, ventilation, air conditioning, and refrigeration systems where appropriate.
 - HV.9.04 Handle oxygen, fuel, and inert gas cylinders according to industry practice and regulations.
- HV.10 Demonstrate proper refrigerant handling and usage as mandated by Environmental Protection Agency (EPA) Section 608 of the Clean Air Act.
- HV.10.01 Interpret standards as mandated by EPA Section 608 of the Clean Air Act.
 - HV.10.02 Interpret the Clean Air Act and EPA requirements.
 - HV.10.03 Prepare for Core, Type I and Type II technician certification of the EPA Proper Refrigerant Usage and Handling Examination.
 - HV.10.04 Interpret Department of Transportation (DOT) regulations concerning transportation of refrigerants and cylinders.
 - HV.10.05 Recover and recycle refrigerants.
- HV.11 Relate the principles of physics to the operation of heating, ventilation, air conditioning, and refrigeration systems.
- HV.11.01 Comprehend the concept of temperature and its measurement.
 - HV.11.02 Analyze the concept of specific heat and heat content.
 - HV.11.03 Examine the concept of latent heat associated with change of phase.
 - HV.11.04 Examine the effect of pressure on the boiling point of liquids.
- HV.12 Comprehend and explain the processes involved in the basic mechanical refrigeration cycle.
- HV.12.01 Analyze the process associated with heat absorption in the evaporator.
 - HV.12.02 Analyze the process associated with heat transfer by the condenser.
 - HV.12.03 Analyze the process that occurs at the metering device.
 - HV.12.04 Analyze the process that occurs at the compressor.
 - HV.12.05 Compare and contrast the properties of common refrigerants.
- HV.13 Relate knowledge and skill pertaining to electricity to heating, ventilation, air conditioning and refrigeration systems.
- HV.13.01 Analyze the basic characteristics of electricity.
 - HV.13.02 Apply Ohm's law to heating, ventilation, air conditioning and refrigeration systems.
 - HV.13.03 Examine electrical circuits and components of heating, ventilation, air conditioning, and refrigeration systems.
 - HV.13.04 Apply basic control wiring and wiring processes used in the heating, ventilation, air conditioning, and refrigeration industry.
 - HV.13.05 Determine the role of electromagnetism as related to motors.
- HV.14 Demonstrate proper soldering, brazing, and piping assembly practices associated with the heating, ventilation, air conditioning, and refrigeration industry.
- HV.14.01 Safely and properly assemble and setup oxy-fuel and/or fuel air torch systems.
 - HV.14.02 Identify the purpose, types, and uses of different filler alloys used in the heating, ventilation, air conditioning, and refrigeration industry.
 - HV.14.03 Identify the purpose, types, and uses of different fluxes used in the heating, ventilation, air conditioning, and refrigeration industry.
 - HV.14.04 Cut, assemble, and braze/solder, and pressure test piping and joint configurations used in the heating, ventilation, air conditioning, and refrigeration industry.

- HV.15 Demonstrate problem solving, analysis, and decision-making in the heating, ventilation, air conditioning, and refrigeration industry.
- HV.15.01 Communicate and comprehend oral and written information typically occurring in the heating, ventilation, air conditioning, and refrigeration industry and workplace.
 - HV.15.02 Interpret data from gauges and instruments to evaluate problems and recommend a corrective course of action.
- HV.16 Understand the principles of planning.
- HV.16.01 Develop preventative maintenance plans and repair schedules.
 - HV.16.02 Identify basic inventory procedures and techniques.
- HV.17 Understand the technologies that influence the knowledge and practices in the heating, ventilation, air conditioning, and refrigeration industry.
- HV.17.01 Explain the role of mechanical and electrical technology.
 - HV.17.02 Explain the role of chemical technology.
 - HV.17.03 Explain the role of computer technology.
- HV.18 Utilize heating, ventilation, air conditioning, and refrigeration knowledge and skills to apply in an experience –based or school project-based learning experience.
- HV 18.01 Apply principles of heating, ventilation, air conditioning, and refrigeration to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Conduct a safety and health inspection and identify any potential hazards.
- Use hand and power tools without damage to tools or fasteners.
- Set up, adjust, and operate fuel-air and/or oxy-fuel torch.
- Cut, clean, swage, flare, bend and fit tubing according to instructions.
- Given a service task on an existing heating, ventilation, air conditioning, and refrigeration system, use approved lockout/tagout procedure.
- Demonstrate proper refrigerant recovery and recycling procedures.
- On an operating commercial refrigeration system, measure the temperature of piping entering and exiting the evaporator and the condenser, and the “high side” and “low side” pressures. Compare to the temperature/pressure charts for the specific refrigerant.
- Demonstrate the proper use of an ammeter, ohmmeter, voltmeter, and wattmeter.
- Wire and test mechanical thermostats used on refrigeration systems.
- Test a potentially defective heating unit, air conditioning unit, and ventilation unit using a created procedure or flow chart.

Vocational Education Standard – Building Arts – Masonry

Program Focus [Apply the following to each content standard.]

- MA.1 Identify the principles of SDA Christian values in correlation with masonry.
- MA.1.01 Recognize God as creator and sustainer of the universe.
 - MA.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - MA.1.03 Develop accountability as expressed in God's Word and laws.
 - MA.1.04 Employ Christian witnessing principles in the work environment.
 - MA.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - MA.1.06 Make biblically-based choices when dealing with work related information.
 - MA.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- MA.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
- MA.2.01 Conflict resolution.
 - MA.2.02 Manage time effectively.
 - MA.2.03 Recognize relevant, ethical issues in the work environment.
 - MA.2.04 Take responsibility for mistakes and/or good work.
 - MA.2.05 Delegate duties.
 - MA.2.06 Interact with others respectfully.
 - MA.2.07 Demonstrate character, leadership, & integrity using creative & critical thinking skills.
- MA.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
- MA.3.01 Accept supervision willingly.
 - MA.3.02 Ask for help when needed.
 - MA.3.03 Follow directions and procedures.
 - MA.3.04 Work effectively with others in a professional setting.
 - MA.3.05 Respect the property & ideals of others.
 - MA.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)
- MA.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
- MA.4.01 Demonstrate proper telephone etiquette.
 - MA.4.02 Listen effectively.
 - MA.4.03 Organize thoughts & clearly express point of view.
 - MA.4.04 Organize thoughts & write clearly.
 - MA.4.05 Demonstrate clear, effective communications verbally & in writing.
 - MA.4.06 Write & organize records clearly.
- MA.5 Understand the principles of habits for success.
- Develop habits of success.
- MA.5.01 Demonstrate punctuality.
 - MA.5.02 Exhibit integrity & pride in workmanship.
 - MA.5.03 Demonstrate personal hygiene and cleanliness.
 - MA.5.04 Utilize time effectively & efficiently.
 - MA.5.05 Prioritize a series of tasks.
 - MA.5.06 Work within guidelines.
 - MA.5.07 Demonstrate adaptability to environment / situation.
 - MA.5.08 Practice frugality in the use of material and supplies.

- MA.5.09 Demonstrate diligence & responsibility.
- MA.5.10 Demonstrate industry & perseverance.
- MA.5.11 Demonstrate attitudes conducive to workplace success.
- MA.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

MA.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- MA.6.01 Develop a positive attitude regarding safety practices & issues.
- MA.6.02 Use and inspect personal protective equipment.
- MA.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- MA.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- MA.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- MA.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- MA.6.07 Demonstrate appropriate safety procedures in a given situation.
- MA.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- MA.6.09 Pass with 100% accuracy a performance examination relating to safety.
- MA.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- MA.6.11 Accurately documents inspection, and maintenance of tools & equipment.

MA.7 Understand career opportunities and career paths.

- MA.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- MA.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- MA.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- MA.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

MA.8 Interpret, layout, and fabricate in conformance to construction drawings and written specifications.

- MA.8.01 Interpret dimensions and locations of components that are explicitly dimensioned in construction drawings and written specifications.
- MA.8.02 Interpret plan and elevation views shown in construction drawings.
- MA.8.03 Recognize and correctly interpret lines and symbols commonly used in construction drawings.
- MA.8.04 Make layouts of locations and elevations of masonry structural elements and enforcements.

MA.9 Lay new masonry units around openings and in replacement situations.

- MA.9.01 Saw and cut masonry units.
- MA.9.02 Lay-up jambs, lintels, and sills.
- MA.9.03 Demonstrate the techniques used in tothing and patching various types of masonry.

- MA.10 Analyze the loads that act on reinforced masonry structures.
- MA.10.01 Analyze vertical loads on masonry structures.
 - MA.10.02 Analyze lateral loads on masonry structures.
 - MA.10.03 Analyze how masonry structures develop reaction to applied loads.
- MA.11 Modify masonry processes based on weather conditions.
- MA.11.01 Identify the weather conditions that affect masonry processes.
 - MA.11.02 Demonstrate changes to masonry processes to accommodate weather conditions.
- MA.12 Demonstrate bonding and reinforcement in masonry structural members.
- MA.12.01 Demonstrate methods of providing bonding in wall structures.
 - MA.12.02 Demonstrate methods of providing tension and compression reinforcement in walls and columns.
 - MA.12.03 Demonstrate methods of providing shear reinforcement.
- MA.13 Utilize masonry knowledge and skills to apply in an experience –based or project-based learning experience.
- MA.13.01 Apply principles of masonry to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Given a set of plans and specifications for a residential or commercial structure, make a complete material take-off for the masonry structures.
- Determine the coordination required to allow rough-in with other trades such as electrical and plumbing during a construction project.
- Examine an existing masonry structure for plumb and straight.
- Layout and construct a masonry project, accurately cutting and placing masonry units around openings, as specified in construction drawings.
- Patch an existing masonry structure, replacing brick, stone, or tile as necessary.
- Research and report on admixtures commercially available in your area.

Vocational Education Standard – Building Arts – Plumbing I

Program Focus [Apply the following to each content standard.]

- P1.1 Identify the principles of SDA Christian values in correlation with building arts.
- P1.1.01 Recognize God as creator and sustainer of the universe.
 - P1.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - P1.1.03 Develop accountability as expressed in God's Word and laws.
 - P1.1.04 Employ Christian witnessing principles in the work environment.
 - P1.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - P1.1.06 Make biblically-based choices when dealing with work related information.
 - P1.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- P1.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
 - P1.2.01 Conflict resolution.
 - P1.2.02 Manage time effectively.
 - P1.2.03 Recognize relevant, ethical issues in the work environment.
 - P1.2.04 Take responsibility for mistakes and/or good work.
 - P1.2.05 Delegate duties.
 - P1.2.06 Interact with others respectfully.
 - P1.2.07 Demonstrate character, leadership, & integrity using creative & critical thinking skills.
- P1.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
 - P1.3.01 Accept supervision willingly.
 - P1.3.02 Ask for help when needed.
 - P1.3.03 Follow directions and procedures.
 - P1.3.04 Work effectively with others in a professional setting.
 - P1.3.05 Respect the property & ideals of others.
 - P1.3.06 Assess implications of cultural and religious diversity for community and work places.
- P1.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
 - P1.4.01 Demonstrate proper telephone etiquette.
 - P1.4.02 Listen effectively.
 - P1.4.03 Organize thoughts & clearly express point of view.
 - P1.4.04 Organize thoughts & write clearly.
 - P1.4.05 Demonstrate clear, effective communications verbally & in writing.
 - P1.4.06 Write & organize records clearly.
- P1.5 Understand the principles of habits for success.
- Develop habits of success.
 - P1.5.01 Demonstrate punctuality.
 - P1.5.02 Exhibit integrity & pride in workmanship.
 - P1.5.03 Demonstrate personal hygiene and cleanliness.
 - P1.5.04 Utilize time effectively & efficiently.
 - P1.5.05 Prioritize a series of tasks.
 - P1.5.06 Work within guidelines.
 - P1.5.07 Demonstrate adaptability to environment / situation.

- P1.5.08 Practice frugality in the use material and supplies.
- P1.5.09 Demonstrate diligence & responsibility.
- P1.5.10 Demonstrate industry & perseverance.
- P1.5.11 Demonstrate attitudes conducive to workplace success.
- P1.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

P1.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- P1.6.01 Develop a positive attitude regarding safety practices & issues.
- P1.6.02 Use and inspect personal protective equipment.
- P1.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- P1.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- P1.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- P1.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- P1.6.07 Demonstrate appropriate safety procedures in a given situation.
- P1.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- P1.6.09 Pass with 100% accuracy a performance examination relating to safety.
- P1.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- P1.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.

P1.7 Understand career opportunities and career paths.

- P1.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- P1.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- P1.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- P1.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

P1.8 Interpret, layout, and fabricate in conformance to construction drawings and written specifications.

- P1.8.01 Interpret dimensions and locations of components that are explicitly dimensioned in construction drawings and written specifications.
- P1.8.02 Interpret plan and elevation views shown in construction drawings.
- P1.8.03 Recognize and correctly interpret lines and symbols commonly used in construction drawings.
- P1.8.04 Make layouts of locations and elevations of structural elements and plumbing components.

P1.9 Demonstrate proper soldering, brazing, and piping assembly practices associated with the plumbing industry.

- P1.9.01 Safely and properly assemble and setup oxy-fuel and/or fuel air torch systems.
- P1.9.02 Identify the purpose, types, and uses of different filler alloys used in the plumbing industry.

- P1.9.03 Identify the purpose, types, and uses of different fluxes used in the plumbing industry.
- P1.9.04 Cut, assemble, and braze/solder, and pressure test piping and joint configurations used in the plumbing industry.
- P1.10 Size and install cold water systems in residential and/or commercial structures.
 - P1.10.01 Determine the size of feeder pipe based on allowable pressure drop, flow requirements, and friction loss.
 - P1.10.02 Mitigate the effects of water hammer in commercial and/or residential water systems.
 - P1.10.03 Verify the pressure integrity of water systems.
 - P1.10.04 Prepare water systems for initial use.
 - P1.10.05 Diminish the possibility of backflow in commercial and/or residential water systems.
- P1.11 Install and explain the operation of hot water systems in residential and/or commercial structures.
 - P1.11.01 Install gas and electric water heaters in residential and/or commercial water systems.
 - P1.11.02 Comprehend the operation of and equipment required for hot water recirculation systems.
 - P1.11.03 Explain the types and applications for solar-heated water systems.
- P1.12 Explain and install drain, waste, and vent (DWV) system components.
 - P1.12.01 Explain the operation of a simple DWV system.
 - P1.12.02 Comprehend the components of a DWV system and their functional relationships.
 - P1.12.03 Install DWV piping to appropriate or specified grade.
- P1.13 Cut, fit, and install plastic, copper, steel pipe.
 - P1.13.01 Identify specified pipe by material, schedule, and compatible fittings.
 - P1.13.02 Measure and cut pipe with corrections for pipe makeup and fitting allowances.
 - P1.13.03 Plan the order of assembly of pipes and fittings.
 - P1.13.04 Complete installations of piping systems in accordance with construction drawings, industry standards, manufacturer's instructions, and code requirements.
- P1.14 Make joints and install fittings in plastic, copper, cast iron, and carbon still pipe as specified in construction drawings, standards, manufacturer's instructions, and code requirements.
 - P1.14.01 Clean and prepare pipe ends, fittings, and valves for joining.
 - P1.14.02 Join pipe ends to fittings and valves.
 - P1.14.02 Inspect completed joints.
- P1.15 Install hangers and supports to plastic, copper, cast iron, and carbon steel pipe as specified in construction drawings, standards, manufacturer's instructions and code requirements.
 - P1.15.01 Select hangers and supports compatible with the type of pipe, supporting structure, application, construction drawings, and code requirements.
 - P1.15.02 Install hangers and supports onto various supporting structures of different materials.
- P1.16 Utilize [plumbing](#) knowledge and skills to apply in an experience –based or school project-based learning experience.
 - P1.16.01 Apply principles of [plumbing](#) to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Read and record daily water usage for several days from a residential or commercial water meter. Extrapolate average daily usage to estimate annual usage.
- Determine optimum routing and sizes for piping, given a residential floor plan that includes location of all fixtures.
- Demonstrate proper setup for oxy-fuel and/or air fuel torch systems.
- Disassemble and demonstrate repair of common faucets.

Vocational Education Standard – Building Arts – Plumbing II

Program Focus [Apply the following to each content standard.]

- P2.1 Identify the principles of SDA Christian values in correlation with building arts.
- P2.1.01 Recognize God as creator and sustainer of the universe.
 - P2.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - P2.1.03 Develop accountability as expressed in God's Word and laws.
 - P2.1.04 Employ Christian witnessing principles in the work environment.
 - P2.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - P2.1.06 Make biblically-based choices when dealing with work related information.
 - P2.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- P2.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
 - P1.2.01 Conflict resolution.
 - P1.2.02 Manage time effectively.
 - P1.2.03 Recognize relevant, ethical issues in the work environment.
 - P1.2.04 Take responsibility for mistakes and/or good work.
 - P1.2.05 Delegate duties.
 - P1.2.06 Interacts with others respectfully.
 - P1.2.07 Demonstrates character, leadership, & integrity using creative & critical thinking skills.
- P2.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
 - P1.3.01 Accept supervision willingly.
 - P1.3.02 Ask for help when needed.
 - P1.3.03 Follows directions and procedures.
 - P1.3.04 Work effectively with others in a professional setting.
 - P1.3.05 Respect the property & ideals of others.
 - P1.3.06 Assess implications of cultural and religious diversity for community and work places.
- P2.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
 - P1.4.01 Demonstrate proper telephone etiquette.
 - P1.4.02 Listen effectively.
 - P1.4.03 Organize thoughts & clearly express point of view.
 - P1.4.04 Organize thoughts & write clearly.
 - P1.4.05 Demonstrate clear, effective communications verbally & in writing.
 - P1.4.06 Write & organize records clearly.
- P2.5 Understand the principles of habits for success.
- Develop habits of success.
 - P1.5.01 Demonstrate punctuality.
 - P1.5.02 Exhibit integrity & pride in workmanship.
 - P1.5.03 Demonstrate personal hygiene and cleanliness.
 - P1.5.04 Utilize time effectively & efficiently.
 - P1.5.05 Prioritize a series of tasks.
 - P1.5.06 Work within guidelines.
 - P1.5.07 Demonstrate adaptability to environment / situation.

- P2.5.08 Practice frugality in the use of material and supplies.
 P2.5.09 Demonstrate diligence & responsibility.
 P2.5.10 Demonstrate industry & perseverance.
 P2.5.11 Demonstrate attitudes conducive to workplace success.
 P2.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.
- P2.6 Understand the responsibilities and procedures of safety.
 Assume responsibility for the safety of themselves, their coworkers, & bystanders.
 P2.6.01 Develop a positive attitude regarding safety practices & issues.
 P2.6.02 Use and inspect personal protective equipment.
 P2.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
 P2.6.04 Demonstrate continuous awareness of potential hazards to self and others.
 P2.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
 P2.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
 P2.6.07 Demonstrate appropriate safety procedures in a given situation.
 P2.6.08 Pass with 100% accuracy a written examination relating to safety issues.
 P2.6.09 Pass with 100% accuracy a performance examination relating to safety.
 P2.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
 P2.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.
- P2.7 Understand career opportunities and career paths.
 P2.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
 P2.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
 P2.7.03 Evaluate personal characteristics required for working in (name the applicable area).
 P2.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

- P2.8 Interpret, layout, and fabricate in conformance to construction drawings and written specifications.
 P2.8.01 Scale dimensions that are not explicitly included in construction drawings.
 P2.8.02 Interpret plan and elevation views shown in construction drawings.
 P2.8.03 Recognize and interpret lines and symbols commonly used in construction drawings.
- P2.9 Relate principles of physics to the operation of plumbing systems.
 P2.9.01 Relate pressure difference in a system to the flow rate through the system.
 P2.9.02 Discuss the role of viscosity and flow rate on pressure drop in a plumbing system.
 P2.9.03 Analyze the role of hydrostatic pressure in water delivery systems.
 P2.9.04 Relate Boyle's Law to the changes in gas pressure in plumbing systems.
 P2.9.05 Relate Archimedes Principle to buoyant forces experienced by plumbing systems.

- P2.9.06 Relate the concepts of momentum and impulse to the control of water flow in plumbing systems.
- P2.10 Install and maintain pressure-reducers and backflow prevention devices.
- P2.10.01 Use pressure-reducing valves to reduce pressure in water supply systems.
- P2.10.02 Use various backflow prevention devices in water supply systems.
- P2.11 Troubleshoot and repair fixtures, valves, and faucets.
- P2.11.01 Troubleshoot common failures in fixtures, valves, and faucets.
- P2.11.02 Repair and maintain fixtures, valves, and faucets.
- P2.12 Install and test DWV piping.
- P2.12.01 Locate all rough-in components in residential or commercial DWV systems.
- P2.12.02 Install carriers common to residential or commercial construction.
- P2.12.03 Install sewer pipe at a specified grade.
- P2.12.04 Install vents.
- P2.12.05 Test and inspect DWV piping.
- P2.13 Size and construct vents and drains for a DWV system.
- P2.13.01 Comprehend the need for vents in a DWV system.
- P2.13.02 Construct DWV vents and drains according to construction drawings and local code requirements.
- P2.13.03 Select appropriate type of vent for a given fixture.
- P2.13.04 Select proper sized vent and drain for a given group of fixtures.
- P2.14 Determine the size of storm drain system needed to serve a structure.
- P2.14.01 Determine maximum volume flow rate that must be handled by a storm drain system.
- P2.14.02 Determine the required size of vertical leaders and storm drains.
- P2.15 Utilize plumbing knowledge and skills to apply in an experience –based or school project-based learning experience.
- P2.15.01 Apply principles of plumbing to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Install and test specified backflow prevention devices in real or mockup water systems.
- Make a material take-off for rough-in, given construction drawings and specifications for a residential or small commercial structure.

Vocational Education Standard – Mechanical Arts – Basic Welding

Program Focus [Apply the following to each content standard.]

- WL.1 Identify the principles of SDA Christian values in correlation with welding.
- WL.1.01 Recognize God as creator and sustainer of the universe.
 - WL.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - WL.1.03 Develop accountability as expressed in God's Word and laws.
 - WL.1.04 Employ Christian witnessing principles in the work environment.
 - WL.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - WL.1.06 Make biblically-based choices when dealing with work related information.
 - WL.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- WL.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
- WL.2.01 Conflict resolution.
 - WL.2.02 Manage time effectively.
 - WL.2.03 Recognize relevant, ethical issues in the work environment.
 - WL.2.04 Take responsibility for mistakes and/or good work.
 - WL.2.05 Delegate duties.
 - WL.2.06 Interacts with others respectfully.
 - WL.2.07 Demonstrates character, leadership, & integrity using creative & critical thinking skills.
- WL.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
- WL.3.01 Accept supervision willingly.
 - WL.3.02 Ask for help when needed.
 - WL.3.03 Follows directions and procedures.
 - WL.3.04 Work effectively with others in a professional setting.
 - WL.3.05 Respect the property & ideals of others.
 - WL.3.06 Assess implications of cultural and religious diversity for community and work places.
- WL.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
- WL.4.01 Demonstrate proper telephone etiquette.
 - WL.4.02 Listen effectively.
 - WL.4.03 Organize thoughts & clearly express point of view.
 - WL.4.04 Organize thoughts & write clearly.
 - WL.4.05 Demonstrate clear, effective communications verbally & in writing.
 - WL.4.06 Write & organize records clearly.
- WL.5 Understand the principles of habits for success.
- Develop habits of success.
- WL.5.01 Demonstrate punctuality.
 - WL.5.02 Exhibit integrity & pride in workmanship.
 - WL.5.03 Demonstrate personal hygiene and cleanliness.
 - WL.5.04 Utilize time effectively & efficiently.
 - WL.5.05 Prioritize a series of tasks.
 - WL.5.06 Work within guidelines.
 - WL.5.07 Demonstrate adaptability to environment / situation.
 - WL.5.08 Practice frugality in the use of material and supplies.

- WL.5.09 Demonstrate diligence & responsibility.
- WL.5.10 Demonstrate industry & perseverance.
- WL.5.11 Demonstrate attitudes conducive to workplace success.
- WL.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

WL.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- WL.6.01 Develop a positive attitude regarding safety practices & issues.
- WL.6.02 Use and inspect personal protective equipment.
- WL.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- WL.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- WL.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- WL.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- WL.6.07 Demonstrate appropriate safety procedures in a given situation.
- WL.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- WL.6.09 Pass with 100% accuracy a performance examination relating to safety.
- WL.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- WL.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.

WL.7 Understand career opportunities and career paths.

- WL.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- WL.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- WL.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- WL.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

WL.8 Relate the properties of metals to weldments and the welding processes.

- WL8.01 Evaluate the mechanical properties of metals and their importance in welding processes.
- WL.8.02 Analyze the thermal properties of metals and their effects on welding processes.

WL.9 Interpret drawings and welding symbol information.

- WL.9.01 Read and sketch drawings.
- WL.9.02 Identify basic weld symbols.
- WL.9.03 Identify lines and joints.
- WL.9.04 Differentiate between drawings and blueprints.

WL.10 Safely store, operate, and maintain welding equipment and accessories.

- WL.10.01 Implement and comply with ANSI Z49.1, Safety and Welding, Cutting, and Allied Processes and Occupational Safety and Health Administration (OSHA) requirements for operating each piece of equipment.

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| WL.10.02 | Demonstrate required safety practices while operating all equipment and tools. |
| WL.10.03 | Exhibit acceptable dress and personal grooming as identified by the welding industry. |
| WL.10.04 | Demonstrate the use of basic metal working and welding equipment. |
| WL.10.05 | Evaluate the importance and use of ventilation. |
| WL.10.06 | Properly handle welding gas cylinders. |
- WL.11 Perform oxyfuel-cutting operations.
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| WL.11.01 | Prepare layouts for cutting individual parts. |
| WL.11.02 | Perform cuts using oxyfuel gas-cutting process. |
| WL.11.03 | Use weld-washing techniques. |
- WL.12 Make single-and multiple-pass fillet and groove welds using a shielded, metal arc welding (SMAW) process.
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| WL.12.01 | Make single-and multiple-pass fillet and groove welds in the flat position. |
| WL.12.02 | Make single-and multiple-pass fillet and groove welds in the horizontal position. |
| WL.12.03 | Make single-and multiple-pass fillet and groove in the vertical position. |
| WL.12.04 | Make single-and multiple-pass fillet and groove welds in the overhead position. |
- WL.13 Utilize welding knowledge and skills to apply in an experience –based or project-based learning experience.
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| WL.13.01 | Apply principles of welding to an experience-based or school project-based learning situation. |
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SAMPLE PERFORMANCE TASKS

- Develop a presentation or demonstration showing the mechanical and thermal properties of metals. Show results of comparisons of metals for tensile strength, hardness, elasticity, ductility, toughness, and brittleness. Explain the best use of each metal for various projects.
- Examine and explain parts to determine application of symbols from drawings, sketches, and blueprints.
- Examine projects to distinguish various types of lines and joints.
- Demonstrate the proper handling and transportation of compressed gas cylinders.
- Cut, saw, and drill holes in metal.
- Complete projects to enhance the learning activity. Integrate related academic skills and knowledge to design, layout, and fabricate a welding project.

Vocational Education Standard – Food Service – Baking

Program Focus [Apply the following to each area content standard.]

- BK.1 Identify the principles of SDA Christian values in correlation with food service arts.
- BK.1.01 Recognize God as creator and sustainer of the universe.
 - BK.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - BK.1.03 Develop accountability as expressed in God's Word and laws.
 - BK.1.04 Employ Christian witnessing principles in the work environment.
 - BK.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - BK.1.06 Make biblically-based choices when dealing with work related information.
 - BK.1.07 Apply biblical principles of Christian morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- BK.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
 - BK.2.01 Conflict resolution.
 - BK.2.02 Manage time effectively.
 - BK.2.03 Recognize relevant, ethical issues in the work environment.
 - BK.2.04 Take responsibility for mistakes and/or good work.
 - BK.2.05 Delegate duties.
 - BK.2.06 Interact with others respectfully.
 - BK.2.07 Demonstrate character, leadership, & integrity using creative & critical-thinking skills.
- BK.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
 - BK.3.01 Accept supervision willingly.
 - BK.3.02 Ask for help when needed.
 - BK.3.03 Follow directions and procedures.
 - BK.3.04 Work effectively with others in a professional setting.
 - BK.3.05 Respect the property & ideals of others.
 - BK.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)
- BK.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
 - BK.4.01 Demonstrate proper telephone etiquette.
 - BK.4.02 Listen effectively.
 - BK.4.03 Organize thoughts & clearly express point of view.
 - BK.4.04 Organize thoughts & write clearly.
 - BK.4.05 Demonstrate clear, effective communications verbally & in writing.
 - BK.4.06 Write & organize records clearly.
- BK.5 Understand the principles of habits for success.
- Develop habits of success.
 - BK.5.01 Demonstrate punctuality.
 - BK.5.02 Exhibit integrity & pride in workmanship.
 - BK.5.03 Demonstrate personal hygiene and cleanliness.
 - BK.5.04 Utilize time effectively & efficiently.
 - BK.5.05 Prioritize a series of tasks.
 - BK.5.06 Work within guidelines.
 - BK.5.07 Demonstrate adaptability to environment / situation.
 - BK.5.08 Practice frugality in the use of material and supplies.

- BK.5.09 Demonstrate diligence & responsibility.
- BK.5.10 Demonstrate industry & perseverance.
- BK.5.11 Demonstrate attitudes conducive to workplace success.
- BK.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

BK.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- BK.6.01 Develop a positive attitude regarding safety practices & issues.
- BK.6.02 Use and inspect personal protective equipment.
- BK.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- BK.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- BK.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- BK.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- BK.6.07 Demonstrate appropriate safety procedures in a given situation.
- BK.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- BK.6.09 Pass with 100% accuracy a performance examination relating to safety.
- BK.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- BK.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.

BK.7 Understand career opportunities and career paths.

- BK.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- BK.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- BK.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- BK.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

BK.8 Identify, safely use, maintain, & store baking equipment.

- BK.8.01 Name each piece of equipment used in baking.
- BK.8.02 Demonstrate the correct equipment to use for a given task.
- BK.8.03 Show evidence of proper safety procedures when operating each piece of equipment.
- BK.8.04 Clean and sanitize equipment properly.
- BK.8.05 Store equipment correctly.

BK.9 Identify, select, use safely, & care for commercial tools in the bakery.

- BK.9.01 Identify institutional food service tools & related terminology.
- BK.9.02 List abbreviations used in the food service industry.
- BK.9.03 Show evidence of proper safety procedures when using each tool.

BK.10 Demonstrate preparation skills to produce a variety of bakery products.

- BK10.01 Accurately identify various bakery products.
- BK.10.02 Develop preparation skills for producing a variety of breads.
- BK.10.03 Develop preparation skills to produce a variety pastries, pies, & cakes.
- BK.10.04 Develop preparation skills to produce a variety of plate desserts.
- BK.10.05 Develop preparation skills to produce a variety of confectionary products.

- BK.11 Apply math skills to baking operations.
- BK.11.01 Measure ingredients using U.S. & metric systems.
 - BK.11.02 Demonstrate adjusting recipe ingredients based on a variety of serving quantities.
 - BK.11.03 Accurately measuring to maintain the integrity of ingredient proportions in relation to the package label.
- BK.12 Demonstrate packaging skills for a variety of bakery products.
- BK.12.01 Develop skills in packaging a variety of bakery products.
 - BK.12.02 Demonstrate appropriate package labeling techniques.
- BK.13 Evaluate the importance of inventory & its relation to quality bakery production.
- BK.13.01 Analyze the overall concept of purchasing, receiving, & storing ingredient items according to specifications for maintaining quality.
 - BK.13.02 Evaluate the critical control points managed by the purchasing, receiving, & storage functions.
 - BK.13.03 Set up inventory procedures including first in/first out concept, date marking, & specific record keeping using current technology.
 - BK.13.04 Compose a plan to prevent food safety hazards during the performance of purchasing & receiving functions.
- BK.14 Utilize baking knowledge and skills to apply in an experience-based or school project-based learning experience.
- BK.14.01 Apply principles of baking to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Demonstrates safe use of each piece of equipment.
- Given a recipe, properly select, operate, & clean each needed piece of equipment.
- Prepare a flow chart detailing the appropriate steps for cleaning, sanitizing, & storing specific pieces of equipment.
- Given a bakery product request, properly select, operate, & clean each needed piece of equipment.
- Decipher a recipe written using abbreviations.
- Selects & uses tools & equipment to produce a variety of breads including yeast breads and quick breads.
- Selects & uses tools & equipment to produce a variety of pastries, pies, cakes, confectionary products & cookies and a variety of fillings & toppings for pastries & baked goods.
- Selects & uses tools & equipment to produce a variety of plate desserts.
- Selects & uses tools & equipment to produce a variety of specialty breads.
- Decorate desserts using pastry art.
- Demonstrates proper measuring skills.
- Calculate adjustments in recipe ingredients based on serving quantities.
- Use measuring equipment to practice measuring in U.S. & metric systems.
- Demonstrates proper packaging techniques.
- Demonstrates appropriate labeling techniques.
- Receives a shipment of items, checks it for quality & accuracy, & stores each item in the appropriate place.
- Calculates the financial impact of good versus poor purchasing & receiving practices.
- Manages the critical control points relevant to purchasing, receiving, & storage.
- Assess a storage room & cooler & identify any improperly stored items.
- Organize a storeroom using the first in/first out method.
- Accurately records items removed from or added to inventory.
- Monitor the critical control points & limits within purchasing & receiving so that food costs are contained & the potential for food borne illness is minimized.

Vocational Education Standard – Food Service – Culinary Arts

Program Focus [Apply the following to each content standard.]

- CU.1 Identify the principles of SDA Christian values in correlation with building arts.
- CU.1.01 Recognize God as creator and sustainer of the universe.
 - CU.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - CU.1.03 Develop accountability as expressed in God's Word and laws.
 - CU.1.04 Employ Christian witnessing principles in the work environment.
 - CU.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - CU.1.06 Make biblically-based choices when dealing with work related information.
 - CU.1.07 Apply biblical principles of Christian morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- CU.2 Understand servant-leadership and ethical principles.
Apply principles of servant-leadership & ethical behavior to selected situations.
- CU.2.01 Conflict resolution.
 - CU.2.02 Manage time effectively.
 - CU.2.03 Recognize relevant, ethical issues in the work environment.
 - CU.2.04 Take responsibility for mistakes and/or good work.
 - CU.2.05 Delegate duties.
 - CU.2.06 Interact with others respectfully.
 - CU.2.07 Demonstrate character, leadership, & integrity using creative & critical-thinking skills.
- CU.3 Understand the concept of cooperation and teamwork.
Demonstrate cooperation and teamwork skills.
- CU.3.01 Accept supervision willingly.
 - CU.3.02 Ask for help when needed.
 - CU.3.03 Follow directions and procedures.
 - CU.3.04 Work effectively with others in a professional setting.
 - CU.3.05 Respect the property & ideals of others.
 - CU.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)
- CU.4 Understand the use of communication skills –interpersonal & group; written & oral.
Use appropriate communication skills in a variety of occupational situations.
- CU.4.01 Demonstrate proper telephone etiquette.
 - CU.4.02 Listen effectively.
 - CU.4.03 Organize thoughts & clearly express point of view.
 - CU.4.04 Organize thoughts & write clearly.
 - CU.4.05 Demonstrate clear, effective communications verbally & in writing.
 - CU.4.06 Write & organize records clearly.
- CU.5 Understand the principles of habits for success.
Develop habits of success.
- CU.5.01 Demonstrate punctuality.
 - CU.5.02 Exhibit integrity & pride in workmanship.
 - CU.5.03 Demonstrate personal hygiene and cleanliness.
 - CU.5.04 Utilize time effectively & efficiently.
 - CU.5.05 Prioritize a series of tasks.
 - CU.5.06 Work within guidelines.
 - CU.5.07 Demonstrate adaptability to environment / situation.
 - CU.5.08 Practice frugality in the use of material and supplies.

- CU.5.09 Demonstrate diligence & responsibility.
 - CU.5.10 Demonstrate industry & perseverance.
 - CU.5.11 Demonstrate attitudes conducive to workplace success.
 - CU.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.
- CU.6 Understand the responsibilities and procedures of safety.
- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
 - CU.6.01 Develop a positive attitude regarding safety practices & issues.
 - CU.6.02 Use and inspect personal protective equipment.
 - CU.6.03 Inspect, maintain, and employ safe operating procedures with tools equipment in accordance with manufacturer's specifications.
 - CU.6.04 Demonstrate continuous awareness of potential hazards to self and others.
 - CU.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
 - CU.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
 - CU.6.07 Demonstrate appropriate safety procedures in a given situation.
 - CU.6.08 Pass with 100% accuracy a written examination relating to safety issues.
 - CU.6.09 Pass with 100% accuracy a performance examination relating to safety.
 - CU.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
 - CU.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.
- CU.7 Understand career opportunities and career paths.
- CU.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
 - CU.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
 - CU.7.03 Evaluate personal characteristics required for working in (name the applicable area).
 - CU.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content (understand, apply, experience)

- CU.8 Identify, safely use, maintain, & store food service production equipment.
- CU.8.01 Name each piece of equipment used in the food production.
 - CU.8.02 Demonstrate the correct equipment to use for a given task.
 - CU.8.03 Show evidence of proper safety procedures when operating each piece of equipment.
 - CU.8.04 Clean and sanitize equipment properly.
 - CU.8.05 Store equipment correctly.
- CU.9 Identify, select, use safely, & care for commercial tools in the institutional kitchen.
- CU.9.01 Identify institutional food service tools & related terminology.
 - CU.9.02 List abbreviations used in the food service industry.
 - CU.9.03 Show evidence of proper safety procedures when using each tool.
- CU.10 Demonstrate institutional preparation skills for all menu categories to produce a variety of food products.
- CU.10.01 Accurately identify various foods.
 - CU.10.02 Develop preparation skills for producing a variety of cold food products.

- CU.10.03 Develop preparation skills to produce a variety of hot food products.
- CU.10.04 Apply the fundamentals of baking science to the preparation of a variety of products.
- CU.11 Apply math skills to food production & service operations.
 - CU.11.01 Measure ingredients using U.S. & metric systems.
 - CU.11.02 Demonstrate adjusting recipe ingredients based on a variety of serving quantities.
 - CU.11.03 Demonstrate proper money counting skills.
- CU.12 Demonstrate special dietary food preparation skills for all menu categories to produce a variety of food products.
 - CU.12.01 Develop skills in producing a variety of cold food products.
 - CU.12.02 Demonstrate appropriate & creative styles in plating, including decorative pieces.
 - CU.12.03 Apply the principle & nutrient retention practices to ensure the fulfillment of nutrient requirements, including those related to life cycle & special dietary needs.
- CU.13 Operate & manage a school based environment that is courteous & friendly, while providing quality service.
 - CU.13.01 Perform dining room service functions using a variety of types of service.
 - CU.13.02 Illustrate interrelationships & workflow between dining room and kitchen operations.
 - CU.13.03 Demonstrate an understanding of worker relations, guest services, & customer relations, including the handling of difficult situations & conflict resolution.
- CU.14 Evaluate the importance of inventory & its relation to quality food production & service.
 - CU.14.01 Analyze the overall concept of purchasing, receiving, & storing food & non-food items according to specifications for maintaining quality.
 - CU.14.02 Evaluate the critical control points managed by the purchasing, receiving, & storage functions.
- CU.15 Evaluate the importance of inventory & its relation to quality food production & service.
 - CU.15.01 Set up inventory procedures including first in/first out concept, date marking, & specific record keeping using current technology.
 - CU.15.02 Compose a plan to prevent food safety hazards during the performance of purchasing & receiving functions.
- CU.16 Demonstrate implementation of food production & service management functions. (Advanced Student).
 - CU.16.01 Evaluate the personnel functions performed by a supervisor.
 - CU.16.02 Appraise the manager's role with regard to financial management.
 - CU.16.03 Evaluate liability issues within food production & service establishments & formulate a plan for preventing and/or addressing these.
 - CU.16.04 Assess the role of customer service as a strategic operating component.
 - CU.16.05 Plan menu items based on standardized recipes to meet customer needs.
- CU.17 Utilize food preparations knowledge and skills to apply in an experience-based or school project-based learning experience.
 - CU.17.01 Apply principles of food preparations to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Demonstrates safe use of each piece of equipment.
- Given a recipe, properly select, operate, & clean each needed piece of equipment.
- Prepare a flow chart detailing the appropriate steps for cleaning, sanitizing, & storing specific pieces of equipment.
- Given a menu, properly select, operate, & clean each needed piece of equipment.
- Decipher a recipe written using abbreviations.
- Research the different types of cutlery & prepare a presentation using the information.
- Selects & uses tools & equipment to prepare cold items including soups, sandwiches, salads, sauces, dressings, marinades, relishes, canapés, & hor d'oeuvres.
- Selects & uses tools & equipment to demonstrate a variety of cooking methods including roasting & baking, broiling, grilling, griddling, sautéing, frying, deep frying, braising & stewing, steaming, convection, micro waving, & other emerging technologies.
- Selects & uses tools & equipment to prepare various stocks, soups, & sauces.
- Demonstrate the culinary process to achieve a finished product within a timeline.
- Prepare various main protein dishes.
- Demonstrates proper measuring skills.
- Calculate adjustments in recipe ingredients based on serving quantities.
- Use measuring equipment to practice measuring in U.S. & metric systems.
- Selects & uses tools & equipment to produce decorative pieces to include fruit, vegetable carvings, displays, & accouterments.
- Demonstrates cooking techniques & storage principles for maximum retention of nutrients.
- Assess nutritional concerns for vegetarianism, food allergies, medical problems, & religious dietary laws & determine appropriate substitutions.
- Given a menu, create, arrange, & calculate the cost of appropriate garnishes.
- Plan Menus & adapt recipes for special dietary needs.
- Prepare vegetables using cooking techniques to retain nutrients.
- Demonstrates different methods of table set-up, cloth layout, & napkin folding.
- Demonstrates the general rules of table service.
- Simulates roles & responsibilities in the scope of dining service.
- Plan & utilize props & decorations to create a memorable milestone event.
- Form a dining service team to coordinate, plan, organize, & serve a culinary event.
- Receives a shipment of items, checks it for quality & accuracy, & stores each item in the appropriate place.
- Calculates the financial impact of good versus poor purchasing & receiving practices.
- Manages the critical control points relevant to purchasing, receiving, & storage.
- Assess a storage room & cooler & identify any improperly stored items.
- Organize a storeroom using the first in/first out method.
- Discuss means of promoting high standards in the food production department.
- Correctly identifies the appropriate stock item to be used next.
- Accurately records items removed from or added to inventory.
- Monitor the critical control points & limits within purchasing & receiving so that food costs are contained & the potential for food borne illness is minimized.
- Applies menu-planning principles to design & modify menus using available technology.
- Forecast the quantity of food to be prepared for a holiday event.
- Create a flow chart depicting steps to be taken in fire emergency situations.
- Develop, conduct & evaluate a food satisfaction and preference survey.
- Utilizing the above survey, construct a cycle menu utilizing principles of food nutrition and cost.

Vocational Education Standard – Food Service – Food Preservation

Program Focus [Apply the following to each area content standard.]

- FP.1 Identify the principles of SDA Christian values in correlation with building arts.
- FP.1.01 Recognize God as creator and sustainer of the universe.
 - FP.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - FP.1.03 Develop accountability as expressed in God's Word and laws.
 - FP.1.04 Employ Christian witnessing principles in the work environment.
 - FP.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - FP.1.06 Make biblically-based choices when dealing with work related information.
 - FP.1.07 Apply biblical principles of Christian morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- FP.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
 - FP.2.01 Conflict resolution.
 - FP.2.02 Manage time effectively.
 - FP.2.03 Recognize relevant, ethical issues in the work environment.
 - FP.2.04 Take responsibility for mistakes and/or good work.
 - FP.2.05 Delegate duties.
 - FP.2.06 Interacts with others respectfully.
 - FP.2.07 Demonstrates character, leadership, & integrity using creative & critical-thinking skills.
- FP.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
 - FP.3.01 Accept supervision willingly.
 - FP.3.02 Ask for help when needed.
 - FP.3.03 Follow directions and procedures.
 - FP.3.04 Work effectively with others in a professional setting.
 - FP.3.05 Respect the property & ideals of others.
 - FP.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)
- FP.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
 - FP.4.01 Demonstrate proper telephone etiquette.
 - FP.4.02 Listen effectively.
 - FP.4.03 Organize thoughts & clearly express point of view.
 - FP.4.04 Organize thoughts & write clearly.
 - FP.4.05 Demonstrate clear, effective communications verbally & in writing.
 - FP.4.06 Write & organize records clearly.
- FP.5 Understand the principles of habits for success.
- Develop habits of success.
 - FP.5.01 Demonstrate punctuality.
 - FP.5.02 Exhibit integrity & pride in workmanship.
 - FP.5.03 Demonstrate personal hygiene and cleanliness.
 - FP.5.04 Utilize time effectively & efficiently.
 - FP.5.05 Prioritize a series of tasks.
 - FP.5.06 Work within guidelines.
 - FP.5.07 Demonstrate adaptability to environment / situation.
 - FP.5.08 Practice frugality in the use material and supplies.

- FP.5.09 Demonstrates diligence & responsibility.
- FP.5.10 Demonstrates industry & perseverance.
- FP.5.11 Demonstrate attitudes conducive to workplace success.
- FP.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

FP.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- FP.6.01 Develop a positive attitude regarding safety practices & issues.
- FP.6.02 Use and inspect personal protective equipment.
- FP.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- FP.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- FP.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- FP.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- FP.6.07 Demonstrate appropriate safety procedures in a given situation.
- FP.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- FP.6.09 Pass with 100% accuracy a performance examination relating to safety.
- FP.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- FP.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.

FP.7 Understand career opportunities and career paths.

- FP.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- FP.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- FP.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- FP.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

FP.8 Apply safe canning principles to canning acid foods.

- FP.8.01 Identify which foods are acid foods.
- FP.8.02 Distinguish between under-mature, mature, & over-mature fruits & berries.
- FP.8.03 Employ proper techniques in the preparation of fruits & berries for canning.
- FP.8.04 Explain the differences between canning acid foods with/without sugar.
- FP.8.05 Evaluate the methods of packing jars - raw pack & hot pack.
- FP.8.06 Cool & store canned acid foods correctly.

FP.9 Apply safe canning principles to canning vegetables.

- FP.9.01 Develop skills in selecting quality vegetables for canning.
- FP.9.02 Estimate the amount of vegetables needed for a designated number of jars.
- FP.9.03 Employ proper techniques in the preparation of vegetables for canning.
- FP.9.04 Evaluate the methods of packing jars - raw & hot pack.
- FP.9.05 Demonstrate proper techniques for preparing & closing the glass jars.
- FP.9.06 Process, cool, & store canned vegetables correctly.

- FP.10 Demonstrate understanding of canning vocabulary.
FP.10.01 Accurately use canning vocabulary.
- FP.11 Apply safe canning principles to canning low or no sugar jams, jellies, & preserves.
FP.11.01 Analyze the role of sugar in food preservation.
FP.11.02 Evaluate the use of sugar, artificial sugar, low sugar, or no sugar in preserving jams, jellies, & preserves.
FP.11.03 Evaluate a variety of gelling agents.
FP.11.04 Process, cool, & store canned vegetables correctly.
- FP.12 Identify and safely use a variety of canning methods.
FP.12.01 Distinguish between recommended & non-recommended methods of canning.
FP.12.02 Apply the appropriate canning methods to the canning of a variety of foods.
FP.12.03 Identify equipment not recommended for canning.
FP.12.04 Explore methods for maintaining color and flavor in canned food.
FP.12.05 Demonstrate appropriate headspacing techniques for a variety of foods.
- FP.13 Identify and apply canning principles that ensure food safety & quality.
FP.13.01 Identify common types & causes of food poisoning.
FP.13.02 Apply precautions for ensuring food safety & quality in the canning of foods.
FP.13.03
- FP.14 Apply safe freezing principles to freezing foods.
FP.14.01 Distinguish between foods that do & do not freeze well.
FP.14.02 Identify the characteristics of proper packaging material for freezing foods.
FP.14.03 Classify frozen foods according to how long they can safely & tastefully be stored.
FP.14.04 Demonstrate proper packaging and labeling techniques.
FP.14.05 Select & apply the appropriate blanching technique to freezing foods.
FP.14.06 Process, cool, & freeze a variety of foods correctly.
- FP.15 Apply safe dehydrating principles to drying foods.
FP.15.01 Evaluate a variety of drying methods.
FP.15.02 Examine the use of pre- & post-drying treatment of foods.
FP.15.03 Describe how to test food for adequate dryness.
FP.15.04 Dry, package, label, and store a variety of foods correctly.
- FP.16 Apply safe pickling principles to pickling foods.
FP.16.01 Identify the characteristics of foods selected for pickling.
FP.16.02 Evaluate the different methods for pickling.
FP.16.03 Investigate the causes & possible solutions for problems with pickled foods.
FP.16.04 Discuss causes & preventions for spoilage in pickled foods.
FP.16.05 Select, prepare, pickle, cool & store a variety of foods correctly.
- FP.17 Utilize food preservation knowledge and skills to apply in an experience-based or school project-based learning experience.
FP.17.01 Apply principles of food preservation to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Select, prepare, and can a variety of acid foods.
- Select, prepare, and can a variety of vegetables.
- Accurately use canning vocabulary.
- Select, prepare, and can a variety of jams, jellies, and preserves.
- Research the potential health risks in the various artificial sweeteners & give a presentation.
- Demonstrate the boiling water bath and steam pressure canner methods of canning accurately.
- Research methods for maintaining color and flavor in canned food & make a presentation.
- Demonstrate the use of proper precautions for ensuring food safety & quality in the canning of foods.
- Select, prepare, and freeze a variety of foods.
- Select, prepare, dry, package, label, and store a variety of foods correctly.
- Select, prepare, pickle, and store a variety of foods correctly.

Vocational Education Standard – Mechanical Arts – Auto Mechanics

Program Focus [Apply the following to each content standard.]

AM.1 Identify the principles of SDA Christian values in correlation with the Auto Mechanics Industry.

- AM.1.01 Recognize God as creator and sustainer of the universe.
- AM.1.02 Value God's inspired writings as a basis for useful labor and growth.
- AM.1.03 Develop accountability as expressed in God's Word and laws.
- AM.1.04 Employ Christian witnessing principles in the work environment.
- AM.1.05 Broaden intellectual abilities through the study and application of vocational education.
- AM.1.06 Make biblically-based choices when dealing with work related information.
- AM.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

AM.2 Understand servant-leadership and ethical principles.

Apply principles of servant-leadership & ethical behavior to selected situations.

- AM.2.01 Conflict resolution.
- AM.2.02 Manage time effectively.
- AM.2.03 Recognize relevant, ethical issues in the work environment.
- AM.2.04 Take responsibility for mistakes and/or good work.
- AM.2.05 Delegate duties.
- AM.2.06 Interact with others respectfully.
- AM.2.07 Demonstrates character, leadership, & integrity using creative & critical thinking skills.

AM.3 Understand the concept of cooperation and teamwork.

Demonstrate cooperation and teamwork skills.

- AM.3.01 Accept supervision willingly.
- AM.3.02 Ask for help when needed.
- AM.3.03 Follow directions and procedures.
- AM.3.04 Work effectively with others in a professional setting.
- AM.3.05 Respect the property & ideals of others.
- AM.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)

AM.4 Understand the use of communication skills –interpersonal & group; written & oral.

Use appropriate communication skills in a variety of occupational situations.

- AM.4.01 Demonstrate proper telephone etiquette.
- AM.4.02 Listen effectively.
- AM.4.03 Organize thoughts & clearly express point of view.
- AM.4.04 Organize thoughts & write clearly.
- AM.4.05 Demonstrate clear, effective communications verbally & in writing.
- AM.4.06 Write & organize records clearly.

AM.5 Understand the principles of habits for success.

Develop habits of success.

- AM.5.01 Demonstrate punctuality.
- AM.5.02 Exhibit integrity & pride in workmanship.
- AM.5.03 Demonstrate personal hygiene and cleanliness.
- AM.5.04 Utilize time effectively & efficiently.
- AM.5.05 Prioritize a series of tasks.
- AM.5.06 Work within guidelines.
- AM.5.07 Demonstrate adaptability to environment / situation.

- AM.5.08 Practice frugality in the use of material and supplies.
- AM.5.09 Demonstrate diligence & responsibility.
- AM.5.10 Demonstrates industry & perseverance.
- AM.5.11 Demonstrate attitudes conducive to workplace success.
- AM.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

AM.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- AM.6.01 Develop a positive attitude regarding safety practices & issues.
- AM.6.02 Use and inspect personal protective equipment.
- AM.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- AM.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- AM.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- AM.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- AM.6.07 Demonstrate appropriate safety procedures in a given situation.
- AM.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- AM.6.09 Pass with 100% accuracy a performance examination relating to safety.
- AM.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- AM.6.11 Accurately document inspection, maintenance, & repair of tools & equipment.

AM.7 Understand career opportunities and career paths.

- AM.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- AM.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- AM.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- AM.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

AM.8 Properly test, diagnose, and service general engine.

- AM.8.01 Complete work to include vehicle identifying information, concern, related service history, cause, and correction.
- AM.8.02 Identify and interpret engine performance concern; determine necessary action.
- AM.8.03 Research applicable vehicle and service information, such as engine management system operation, vehicle service history, service precautions, and technical service bulletins.
- AM.8.04 Locate and interpret vehicle and major component identification numbers (VIN, vehicle certification labels, and calibration decals).
- AM.8.05 Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action.
- AM.8.06 Diagnose abnormal engine noise or vibration concerns; determine necessary action.
- AM.8.07 Diagnose abnormal exhaust color, odor, and sound; determine necessary action.

- AM.8.08 Perform cylinder cranking compression tests; determine necessary action.
 - AM.8.09 Verify engine operating temperature; determine necessary action.
 - AM.8.10 Perform cooling system pressure tests; check coolant condition; inspect and test radiator, pressure cap, coolant recovery tank, and hoses; perform necessary action.
 - AM.8.11 Verify correct camshaft timing.
- AM.9 Properly test, diagnose, and service ignition system.
- AM.9.01 Diagnose ignition system related problems such as no-starting, hard starting, engine misfire, poor drivability, spark knock, power loss, and poor mileage on vehicles with electronic ignition (distributor-less) systems; determine necessary action.
 - AM.9.02 Diagnose ignition system related problems such as no-starting, hard starting, engine misfire, poor drivability, spark knock, power loss, and poor mileage on vehicles with distributor ignition (DI) systems; determine necessary action.
 - AM.9.03 Inspect and test ignition primary circuit wiring and solid state components; perform necessary action.
 - AM.9.04 Inspect, test and service distributor.
 - AM.9.05 Inspect and test ignition system secondary circuit wiring and components; perform necessary action.
 - AM.9.06 Inspect and test ignition coil(s); perform necessary action.
 - AM.9.07 Check and adjust ignition system timing and timing advance/retard (where applicable).
 - AM.9.08 Inspect and test ignition system pick-up sensor or triggering devices; perform necessary action.
- AM.10 Properly test, diagnose, and service fuel, air induction, and exhaust systems.
- AM.10.01 Diagnose hot or cold no-starting, hard starting, poor drivability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling, poor mileage, dieseling, and emissions problems on vehicles with injection-type fuel systems; determine necessary action.
 - AM.10.02 Check fuel for contaminants and quality; determine necessary action.
 - AM.10.03 Inspect and test fuel pumps and pump control systems for pressure, regulation and volume; perform necessary action.
 - AM.10.04 Replace fuel filters.
 - AM.10.05 Inspect and test fuel injectors.
 - AM.10.06 Check idle speed.
 - AM.10.07 Inspect the integrity of the exhaust manifold, exhaust pipes, muffler(s), catalytic converter(s), resonator(s), tail pipe(s), and heat shield(s); perform necessary action.
- AM.11 Properly test, diagnose, and service engine related.
- AM.11.01 Adjust valves on engines with mechanical or hydraulic lifters.
 - AM.11.02 Remove and replace timing belt; verify correct camshaft timing.
 - AM.11.03 Remove and replace thermostat and gasket.
 - AM.11.04 Inspect and test mechanical/electrical fans, fan clutch, fan shroud/ducting, air dams, and fan control devices; perform necessary action.
 - AM.11.05 Perform oil and filter change.
- AM.12 Properly test, diagnose, service, and repair general suspension and steering systems.
- AM.12.01 Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.
 - AM.12.02 Identify and interpret suspension and steering concern; determine necessary action.

- AM.12.03 Research applicable vehicle and service information, such as suspension and steering system operation, vehicle service history, service precautions, and technical service bulletins.
- AM.12.04 Locate and interpret vehicle and major component identification numbers (VIN, vehicle certification labels, calibration decals).
- AM.13 Properly test, diagnose, service, and repair steering systems.
 - AM.13.01 Remove and replace manual or power rack and pinion steering gear; inspect mounting bushings and brackets.
 - AM.13.02 Inspect and replace manual or power rack and pinion steering gear inner tie rod ends (sockets) and bellows boots.
 - AM.13.03 Determine proper power steering fluid type; inspect fluid level and condition.
 - AM.13.04 Flush, fill, and bleed power steering system.
 - AM.13.05 Diagnose power steering fluid leakage; determine necessary action.
 - AM.13.06 Remove, inspect, replace, and adjust power steering pump belt.
 - AM.13.07 Remove and reinstall power steering pump.
 - AM.13.08 Remove and reinstall power steering pump pulley; check pulley and belt alignment.
 - AM.13.09 Inspect and replace power steering hoses and fittings.
 - AM.13.10 Inspect and replace pitman arm, relay (centerlink/intermediate) rod, idler arm and mountings, and steering linkage damper.
 - AM.13.11 Inspect, replace, and adjust tie rod ends (sockets), tie rod sleeves, and clamps.
- AM.14 Properly test, diagnose, service, and repair suspension systems: front suspension/rear suspension.
 - AM.14.01 Diagnose short and long arm suspension system noises, body sway, and uneven riding height concerns; determine necessary action.
 - AM.14.02 Diagnose strut suspension system noises, body sway, and uneven riding height concerns; determine necessary action.
 - AM.14.03 Remove, inspect, and install upper and/or lower ball joints.
 - AM.14.04 Remove, inspect, and install steering knuckle assemblies.
 - AM.14.05 Remove, inspect, and install strut cartridge or assembly, strut coil spring, and insulators (silencers), and upper strut bearing mount.
 - AM.14.06 Lubricate suspension and steering systems.
- AM.15 Properly test, diagnose, service, and repair suspension systems: miscellaneous service.
 - AM.15.01 Inspect, remove, and replace shock absorbers.
 - AM.15.02 Remove, inspect, and service or replace front and rear wheel bearings.
- AM.16 Properly test, diagnose, service, and repair wheel and tire.
 - AM.16.01 Diagnose tire wear patterns; determine necessary action.
 - AM.16.02 Inspect tires; check and adjust air pressure.
 - AM.16.03 Diagnose wheel/tire vibration, shimmy, and noise; determine necessary action.
 - AM.16.04 Rotate tires according to manufacturer's recommendations.
 - AM.16.05 Diagnose tire pull (lead) problem; determine necessary action.
 - AM.16.06 Balance wheel and tire assembly (static and dynamic).
 - AM.16.07 Dismount, inspect, repair, and remount tire on wheel.
 - AM.16.08 Reinstall wheel; torque lug nuts.
 - AM.16.09 Inspect tire and wheel assembly for air loss; perform necessary action.
 - AM.16.10 Repair tire using internal patch.
- AM.17 Properly test, diagnose, service, and repair general brake systems.
 - AM.17.01 Complete work order to include vehicle identifying information, concern, related service history, cause, and correction.
 - AM.17.02 Identify and interpret brake system concern; determine necessary action.

- AM.17.03 Research applicable vehicle and service information, such as brake system operation, vehicle service history, service precautions, and technical service bulletins.
- AM.17.04 Locate and interpret vehicle and major component identification numbers (VIN, vehicle certification labels, calibration decals).
- AM.18 Properly test, diagnose, service, and repair hydraulic system.
- AM.18.01 Diagnose pressure concerns in the brake system using hydraulic principles (Pascal's Law).
- AM.18.02 Measure brake pedal height; determine necessary action.
- AM.18.03 Check master cylinder for internal and external leaks and proper operation; determine necessary action.
- AM.18.04 Remove, bench bleed, and reinstall master cylinder.
- AM.18.05 Diagnose poor stopping, pulling, or dragging concerns caused by malfunctions in the hydraulic system; determine necessary action.
- AM.18.06 Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging or wear; tighten loose fittings and supports; determine necessary action.
- AM.18.07 Select, handle, store, and fill brake fluids to proper level.
- AM.18.08 Bleed (manual, pressure, vacuum or surge) brake system.
- AM.18.09 Flush hydraulic system.
- AM.19 Properly test, diagnose, service, and repair drum brake.
- AM.19.01 Diagnose poor stopping, noise, pulling, grabbing, dragging or pedal pulsation concerns; determine necessary action.
- AM.19.02 Remove, clean (using proper safety procedures), inspect, and measure brake drums; determine necessary action.
- AM.19.03 Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble.
- AM.19.04 Remove, inspect, and install wheel cylinders.
- AM.19.05 Pre-adjust brake shoes and parking brake before installing brake drums or drum/hub assemblies and wheel bearings.
- AM.19.06 Installs wheel and torques lug nuts and makes final checks and adjustments.
- AM.20 Properly test, diagnose, service, and repair disc brake.
- AM.20.01 Diagnose poor stopping, noise, pulling, grabbing, dragging or pedal pulsation concerns; determine necessary action.
- AM.20.02 Remove caliper assembly from mountings; clean and inspect for leaks and damage to caliper housing; determine necessary action.
- AM.20.03 Clean and inspect caliper mounting and slides for wear and damage; determine necessary action.
- AM.20.04 Remove, clean, and inspect pads and retaining hardware; determine necessary action.
- AM.20.05 Reassemble, lubricate, and reinstall caliper, pads, and related hardware; seat pads, and inspect for leaks.
- AM.20.06 Clean, inspect, and measure rotor with a dial indicator and a micrometer; follow manufacturer's recommendations in determining need to machine or replace.
- AM.20.07 Remove and reinstall rotor.
- AM.20.08 Install wheel, torque lug nuts, and make final checks and adjustments.
- AM.21 Properly test, diagnose, service, and repair miscellaneous (wheel bearings, parking brakes, electrical, etc.).
- AM.21.01 Diagnose wheel bearing noises, wheel shimmy, and vibration concerns; determine necessary action.

- AM.21.02 Remove, clean, inspect, repack, and install wheel bearings and replace seals; install hub and adjust wheel bearings.
- AM.21.03 Check parking brake cables and components for wear, rusting, binding, and corrosion; clean, lubricate, or replace as needed.
- AM.21.04 Check parking brake operation; determine necessary action.
- AM.21.05 Check operation of brake stop light system; determine necessary action.
- AM.21.06 Replace wheel bearing and race.
- AM.21.07 Inspect and replace wheel studs.
- AM.21.08 Remove and reinstall sealed wheel bearing assembly.

AM.22 Properly test, diagnose, service, and repair general electrical system.

- AM.22.01 Use wiring diagrams during diagnosis of electrical circuit problems.
- AM.22.02 Demonstrate the proper use of a digital multimeter (DMM) during diagnosis of electrical circuit problems.
- AM.22.03 Check electrical circuits with a test light; determine necessary action.
- AM.22.04 Measure source voltage and perform voltage drop tests in electrical/electronic circuits using a voltmeter; determine necessary action.
- AM.22.05 Check continuity and measure resistance in electrical/electronic circuits and components using an ohmmeter; determine necessary action.
- AM.22.06 Check electrical circuits using fused jumper wires; determine necessary action.
- AM.22.07 Locate shorts, grounds, opens, and resistance problems in electrical/electronic circuits; determine necessary action.
- AM.22.08 Measure and diagnose the cause(s) of excessive key-off battery drain (parasitic draw); determine necessary action.
- AM.22.09 Inspect and test fusible links, circuit breakers, and fuses; determine necessary action.
- AM.22.10 Inspect and test switches, connectors, relays, solid state devices, and wires of electrical/electronic circuits; perform necessary action.
- AM.22.11 Remove and replace terminal end from connector.
- AM.22.12 Repair connectors and terminal ends.
- AM.22.13 Perform solder repair of electrical wiring.

AM.23 Properly test, diagnose, service, and repair a battery system.

- AM.23.01 Perform battery state-of-charge test; determine necessary action.
- AM.23.02 Perform battery capacity test; confirm proper battery capacity for vehicle application; determine necessary action.
- AM.23.03 Inspect, clean, fill, and replace battery.
- AM.23.04 Perform slow/fast battery charge.
- AM.23.05 Inspect and clean battery cables, connectors, clamps, and hold-downs; repair or replace as needed.
- AM.23.06 Start a vehicle using jumper cables and a battery or auxiliary power supply.

AM.24 Properly test, diagnose, service, and repair starting system.

- AM.24.01 Perform starter current draw tests; determine necessary action.
- AM.24.02 Perform starter circuit voltage drop tests; determine necessary action.
- AM.24.03 Inspect and test starter relays and solenoids; determine necessary action.
- AM.24.04 Remove and install starter in a vehicle.
- AM.24.05 Inspect and test switches, connectors, and wires of starter control circuits; perform necessary action.
- AM.24.06 Differentiate between electrical and engine mechanical problems that cause a slow-crank or no-crank condition.

- AM.25 Properly test, diagnose, service, and repair charging system.
- AM.25.01 Perform charging system output test; determine necessary action.
 - AM.25.02 Diagnose charging system for the cause of undercharge, no-charge, and overcharge conditions.
 - AM.25.03 Remove, inspect, and install generator (alternator).
 - AM.25.04 Perform charging circuit voltage drop tests; determine necessary action.
 - AM.25.05 Inspect, adjust, or replace generator (alternator) drive belts, pulleys, and tensioners; check pulley and belt alignment.
- AM.26 Properly test, diagnose, service, and repair lighting systems.
- AM.26.01 Diagnose the cause of brighter than normal, intermittent, dim, or no light operation; determine necessary action.
 - AM.26.02 Inspect, replace, and aim headlights and bulbs.
 - AM.26.03 Inspect and diagnose incorrect turn signal or hazard light operation; perform necessary action.
- AM.27 Properly test, diagnose, service, and repair horn and wiper/washer systems.
- AM.27.01 Diagnose incorrect horn operation; perform necessary action.
 - AM.27.02 Diagnose incorrect wiper operation; diagnose wiper speed control and park problems; perform necessary action.
 - AM.27.03 Diagnose incorrect washer operation; perform necessary action.
- AM.28 Utilize auto mechanics knowledge and skills to apply in an experience –based or project-based learning experience.
- AM.28.01 Apply principles of auto mechanics to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Remove and replace tie rod ends.
- Using case scenarios follow strategy-based diagnostic procedure to verify the complaint, define the problem, isolate the problem, validate the problem, make the repair, and test the repair.
- Remove and replace rear shock absorbers.
- Replace rear wheel bearings.
- Repair damaged distributor.
- Replace fuel injectors.
- Jump-start a vehicle.
- Remove and replace a starter motor.
- Pressure-bleed brake system.

Vocational Education Standard – Mechanical Arts – Small Engine Repair and Maintenance

Program Focus [Apply the following to each content standard.]

- SE.1 Identify the principles of SDA Christian values in correlation with the small engine repair and maintenance Industry.
- SE.1.01 Recognize God as creator and sustainer of the universe.
 - SE.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - SE.1.03 Develop accountability as expressed in God's Word and laws.
 - SE.1.04 Employ Christian witnessing principles in the work environment.
 - SE.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - SE.1.06 Make biblically-based choices when dealing with work related information.
 - SE.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- SE.2 Understand servant-leadership and ethical principles.
Apply principles of servant-leadership & ethical behavior to selected situations.
- SE.2.01 Conflict resolution.
 - SE.2.02 Manage time effectively.
 - SE.2.03 Recognize relevant, ethical issues in the work environment.
 - SE.2.04 Take responsibility for mistakes and/or good work.
 - SE.2.05 Delegate duties.
 - SE.2.06 Interacts with others respectfully.
 - SE.2.07 Demonstrate character, leadership, & integrity using creative & critical thinking skills.
- SE.3 Understand the concept of cooperation and teamwork.
Demonstrate cooperation and teamwork skills.
- SE.3.01 Accept supervision willingly.
 - SE.3.02 Ask for help when needed.
 - SE.3.03 Follow directions and procedures.
 - SE.3.04 Work effectively with others in a professional setting.
 - SE.3.05 Respect the property & ideals of others.
 - SE.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)
- SE.4 Understand the use of communication skills –interpersonal & group; written & oral.
Use appropriate communication skills in a variety of occupational situations.
- SE.4.01 Demonstrate proper telephone etiquette.
 - SE.4.02 Listen effectively.
 - SE.4.03 Organize thoughts & clearly express point of view.
 - SE.4.04 Organize thoughts & write clearly.
 - SE.4.05 Demonstrate clear, effective communications verbally & in writing.
 - SE.4.06 Write & organize records clearly.
- SE.5 Understand the principles of habits for success.
Develop habits of success.
- SE.5.01 Demonstrate punctuality.
 - SE.5.02 Exhibit integrity & pride in workmanship.
 - SE.5.03 Demonstrate personal hygiene and cleanliness.
 - SE.5.04 Utilize time effectively & efficiently.
 - SE.5.05 Prioritize a series of tasks.
 - SE.5.06 Work within guidelines.

- SE.5.07 Demonstrate adaptability to environment / situation.
- SE.5.08 Practice frugality in the use material and supplies.
- SE.5.09 Demonstrate diligence & responsibility.
- SE.5.10 Demonstrate industry & perseverance.
- SE.5.11 Demonstrate attitudes conducive to workplace success.
- SE.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

SE.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- SE.6.01 Develop a positive attitude regarding safety practices & issues.
- SE.6.02 Use and inspect personal protective equipment.
- SE.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- SE.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- SE.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- SE.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- SE.6.07 Demonstrate appropriate safety procedures in a given situation.
- SE.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- SE.6.09 Pass with 100% accuracy a performance examination relating to safety.
- SE.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- SE.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.

SE.7 Understand career opportunities and career paths.

- SE.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- SE.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- SE.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- SE.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

SE.8 Apply fundamental science concepts to small engine performance technology.

- SE.8.01 Examine how physics concepts and laws apply to small engine performance.
- SE.8.02 Analyze the functions and operation of small engines and fuel systems.
- SE.8.03 Analyze the functions and operation of small engine ignition systems and emission systems.

SE.9 Test, diagnosis, service, and repair charging and electrical systems as related to small engines.

- SE.9.01 Illustrate the application of Ohm's law to charging and electrical systems related to small engines.
- SE.9.02 Interpret schematics, diagrams, and reference information used in small engine electrical systems.
- SE.9.03 Use strategy based diagnostics for determining the cause of a fault in an electrical circuit.
- SE.9.04 Test, diagnose, and service batteries.
- SE.9.05 Test, diagnose, and service light systems.

- SE.10 Test, diagnose, service, and repair ignition systems as related to small engines.
- SE.10.01 Analyze the function and operation of an ignition system related to small engine technology.
 - SE.10.02 Diagnose ignition system problems.
 - SE.10.03 Perform ignition system service.
- SE.11 Test, diagnose, service, and repair fuel delivery systems as related to small engines.
- SE.11.01 Analyze the function and operation of fuel systems related to small engine technology.
 - SE.11.02 Diagnose fuel system problems.
 - SE.11.03 Perform fuel system service.
- SE.12 Test, diagnose, service, and repair emission systems as related to small engines.
- SE.12.01 Analyze the function and operation of emission systems as related to small engines.
 - SE.12.02 Diagnose emission systems relating to small engines.
 - SE.12.03 Perform emission system service on small engines.
- SE.13 Research, test, diagnose, service, and repair electrical mechanical systems as related to small engines.
- SE.13.01 Analyze the function and operation of computer chips used in small engines.
 - SE.13.02 Demonstrate the use of diagnostic equipment.
 - SE.13.03 Analyze the operation of gauges, sending units, warning lights, speedometers, tachometers, electronic instrument panels and accessories.
 - SE.13.04 Diagnose problems with gauges, sending units, warning lights, speedometers, tachometers, electronic instrument panels and accessories.
 - SE.13.05 Perform repairs on gauges, sending units, warning lights, speedometers, tachometers, electronic instrument panels and accessories.
- SE.14 Properly test, diagnose, and repair small engine general electrical systems.
- SE.14.01 Interpret schematics, diagrams, and reference information used in small engine electrical diagnosis.
 - SE.14.02 Use strategy-based diagnostics for determining the cause of a fault in an electrical circuit.
 - SE.14.03 Demonstrate the use of equipment and tools for electrical testing and diagnosis.
- SE.15 Utilize small engine repair and maintenance knowledge and skills to apply in an experience – based or project-based learning experience.
- SE.15.01 Apply principles of small engine repair and maintenance to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Assess the work area for safety hazards.
- Using case scenarios follow strategy based diagnostic procedure to verify the complaint, define the problem, isolate the problem, validate the problem, make the repair, and test the repair. Complete a repair order using technical writing skills and calculate salary earnings based on the repair order description and manufacturer allowances for each item on the work order. Inspect headlights, brake lights, turn signals, and bulbs.
- Clean battery clamps, cables, connectors, and hold-downs; repairs or replaces as needed.
- Test the ignition electrical circuit.
- Replace starter components as needed or replace starter.
- Repair a carburetor.
- Diagnose and repair electrical systems such as ignition, charging, starting, fuel injections, power door locks, and horn operations.

Vocational Education Standard – Administrative Assistant

Program Focus [Apply the following to each content standard.]

- OA.1 Identify the principles of SDA Christian values in correlation with office assistant.
- OA.1.01 Recognize God as creator and sustainer of the universe.
 - OA.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - OA.1.03 Develop accountability as expressed in God's Word and laws.
 - OA.1.04 Employ Christian witnessing principles in the work environment.
 - OA.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - OA.1.06 Make biblically-based choices when dealing with work related information.
 - OA.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- OA.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
- OA.2.01 Conflict resolution.
 - OA.2.02 Manage time effectively.
 - OA.2.03 Recognize relevant, ethical issues in the work environment.
 - OA.2.04 Take responsibility for mistakes and/or good work.
 - OA.2.05 Delegate duties.
 - OA.2.06 Interacts with others respectfully.
 - OA.2.07 Demonstrates character, leadership, & integrity using creative & critical thinking skills.
- OA.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
- OA.3.01 Accept supervision willingly.
 - OA.3.02 Ask for help when needed.
 - OA.3.03 Follows directions and procedures.
 - OA.3.04 Work effectively with others in a professional setting.
 - OA.3.05 Respect the property & ideals of others.
 - OA.3.06 Assess implications of cultural and religious diversity for community and work places.
- OA.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
- OA.4.01 Demonstrate proper telephone etiquette.
 - OA.4.02 Listen effectively.
 - OA.4.03 Organize thoughts & clearly express point of view.
 - OA.4.04 Organize thoughts & write clearly.
 - OA.4.05 Demonstrate clear, effective communications verbally & in writing.
 - OA.4.06 Write & organize records clearly.
- OA.5 Understand the principles of habits for success.
- Develop habits of success.
- OA.5.01 Demonstrate punctuality.
 - OA.5.02 Exhibit integrity & pride in workmanship.
 - OA.5.03 Demonstrate personal hygiene and cleanliness.
 - OA.5.04 Utilize time effectively & efficiently.
 - OA.5.05 Prioritize a series of tasks.
 - OA.5.06 Work within guidelines.
 - OA.5.07 Demonstrate adaptability to environment/situation.
 - OA.5.08 Practice frugality in the use of material and supplies.

- OA.5.09 Demonstrate diligence & responsibility.
 - OA.5.10 Demonstrate industry & perseverance.
 - OA.5.11 Demonstrate attitudes conducive to workplace success.
 - OA.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.
- OA.6 Understand the responsibilities and procedures of safety.
- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
 - OA.6.01 Develop a positive attitude regarding safety practices & issues.
 - OA.6.02 Use and inspect personal protective equipment.
 - OA.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
 - OA.6.04 Demonstrate continuous awareness of potential hazards to self and others.
 - OA.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
 - OA.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
 - OA.6.07 Demonstrate appropriate safety procedures in a given situation.
 - OA.6.08 Pass with 100% accuracy a written examination relating to safety issues.
 - OA.6.09 Pass with 100% accuracy a performance examination relating to safety.
 - OA.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
 - OA.6.11 Accurately documents inspection, and maintenance of tools & equipment.
- OA.7 Understand career opportunities and career paths.
- OA.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
 - OA.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
 - OA.7.03 Evaluate personal characteristics required for working in (name the applicable area).
 - OA.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.
- Area Content [understand, apply, experience.]**
- OA.8 Examine a variety of opportunities in business.
- OA.8.01 Examine personal strategies for meeting workplace standards.
 - OA.8.02 Illustrate the interrelationships of business operations and the impact of one component on another.
 - OA.8.03 Compare and contrast various forms of business ownership.
 - OA.8.04 Explain workplace competencies and future prospects for employment.
 - OA.8.05 Distinguish between a domestic and an international company.
- OA.9 The student will apply typography, layout, design and composition concepts and guidelines for preparation of multi-page, multi-feature projects.
- OA.9.01 Apply composition processes.
 - OA.9.02 Analyze principles of typography.
 - OA.9.03 Set formatting styles and apply typographical commands to text.
 - OA.9.04 Analyze layout principles.
 - OA.9.05 Analyze principles of design.
 - OA.9.06 Illustrate methods of importing and exporting text and graphics.

- OA.11 Enhance productivity through effective information processing using a variety of input technologies.
- OA.11.01 Demonstrate the functions, applications and common features of word processing software.
 - OA.11.02 Apply the different stages of the document cycle.
 - OA.11.03 Prepare a variety of documents through the use of a variety of input technologies according to mail standards such as keying, scanning, voice and handwriting. Utilize a variety of business forms and documents.
 - OA.11.04 Apply information processing systems hardware and software appropriately to accomplish tasks across the curriculum.
 - OA.11.05 Demonstrate the ability to access reference materials in a variety of locations.
 - OA.11.06 Proofread and edit documents for accuracy and content, grammar, spelling and punctuation.
- OA.12 Apply various communication strategies and techniques of input technologies, and to send, receive, and transmit information in the global world of business.
- OA.12.01 Apply effective procedures for composing business communications through the use of a variety of input.
 - OA.12.02 Practice procedures for improving listening, reading and speaking skills.
 - OA.12.03 Demonstrate techniques for handling interoffice, incoming and outgoing mail.
 - OA.12.04 Inspect methods of transmitting information using telephone technology.
 - OA.12.05 Identify the equipment, techniques and procedures used for telecommunication.
 - OA.12.06 Apply interpersonal techniques appropriate in relating and working with diverse populations (cultural, ethnic, national...) in clients and employees in the workplace.
 - OA.12.07 Apply appropriate interpersonal techniques necessary in working with employees and visitors to the workplace.
 - OA.12.08 Prepare and manage incoming and outgoing correspondence.
- OA.13 Maintain various records management systems.
- OA.13.01 Manage paper and magnetic records and media.
 - OA.13.02 Examine alphabetic, numeric, chronological, geographic and subject filing systems.
 - OA.13.03 Relate the reprographic processes to records management.
 - OA.13.04 Use computer-assisted retrieval systems to manage media.
 - OA.13.05 Use imaging systems to convert and store data in a digitized format.
 - OA.13.06 Examine procedures and methods for disposal of records.
- OA.14 Effectively use resources that support work activities, time management, workstation components and safety in the work environment.
- OA.14.01 Analyze the importance of time management for personal and professional applications.
 - OA.14.02 Evaluate personal and professional time management procedures to increase productivity.
 - OA.14.03 Examine factors related to ergonomics and its importance to the office worker.
 - OA.14.04 Observe safety and security measures necessary in the work environment.
- OA.15 Examine concepts and procedures used in managing financial activities.
- OA.15.01 Analyze procedures for effective personal and professional money management.
 - OA.15.02 Use financial records essential to daily operations of a business.
 - OA.15.03 Calculate mathematical computations related to financial management.

- OA.16 The student will examine the importance of and apply decision making, critical thinking, and teamwork skills.
- OA.16.01 Examine potential problems facing business and offer alternative solutions.
 - OA.16.02 Propose contingency plans for solving identified problems.
 - OA.16.03 Demonstrate the uses of social and business etiquette in group relationships in the workplace.
 - OA.16.04 Apply teamwork skills in group assigned activities.
- OA.17 The student will research and apply knowledge of ethical and legal issues within the industry.
- OA.17.01 Demonstrate work ethics that include integrity, honesty, loyalty, and perseverance that meet industry standards.
 - OA.17.02 Research benefits and consequences resulting from the practice of business ethics.
 - OA.17.03 Comprehend copyright laws and their applications to text, visual art, design, music, and photography.
 - OA.17.04 Research legal responsibilities associated with the use of the Internet as required by federal and state government agencies.
- OA.18 Develop and demonstrate human relations, organizational and professional leadership skills.
- OA.18.01 Research and compose a typed written paper on the attributes of a leader.
 - OA.18.02 Apply effective image-building and public relations techniques.
 - OA.18.03 Organize and manage a team presentation on leadership.
 - OA.18.04 Demonstrate parliamentary procedure skills through team activities.
- OA.19 Develop a comprehensive portfolio.
- OA.19.01 Design a policy manual based on research findings for a small merged department, business or organization that includes use of copyright resources, safety and health issues.
 - OA.19.02 Analyze steps used in conducting a feasibility study.
 - Distinguish the uses of a feasibility study.
 - Determine who does the study.
 - Determine what should be measured and /or studied.
 - Determine how the information is gathered.
 - Determine criteria for analyzing the study.
 - OA.19.03 Write specifications for equipment (networking, furniture, reprographics, record management, computers/peripherals/software) necessary to run a full-scale small department, business or organization.
- OA.20 Utilize administrative management knowledge and skills to apply in an experience –based or project-based learning experience.
- OA.20.01 Apply principles of office assistant to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Photocopying and preparing materials for distribution as requested.
- Answering the telephone, passing calls to the appropriate staff member, taking messages if necessary or dealing with queries.
- Receive, sort and distribute mail.
- Maintain records and files.
- Assisting with reports.
- Input, store and output data.

Vocational Education Standard – Child Growth and Development

Program Focus [Apply the following to each content standard.]

- CG.1 Identify the principles of SDA Christian values in correlation with child growth and development.
- CG.1.01 Recognize God as creator and sustainer of the universe.
 - CG.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - CG.1.03 Develop accountability as expressed in God's Word and laws.
 - CG.1.04 Employ Christian witnessing principles in the work environment.
 - CG.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - CG.1.06 Make biblically-based choices when dealing with work related information.
 - CG.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- CG.2 Understand servant-leadership and ethical principles.
Apply principles of servant-leadership & ethical behavior to selected situations.
- CG.2.01 Conflict resolution.
 - CG.2.02 Manage time effectively.
 - CG.2.03 Recognize relevant, ethical issues in the work environment.
 - CG.2.04 Take responsibility for mistakes and/or good work.
 - CG.2.05 Delegate duties.
 - CG.2.06 Interact with others respectfully.
 - CG.2.07 Demonstrate character, leadership, & integrity using creative & critical thinking skills.
- CG.3 Understand the concept of cooperation and teamwork.
Demonstrate cooperation and teamwork skills.
- CG.3.01 Accept supervision willingly.
 - CG.3.02 Ask for help when needed.
 - CG.3.03 Follow directions and procedures.
 - CG.3.04 Work effectively with others in a professional setting.
 - CG.3.05 Respect the property & ideals of others.
 - CG.3.06 Assess implications of cultural and religious diversity for community and work places.
- CG.4 Understand the use of communication skills –interpersonal & group; written & oral.
Use appropriate communication skills in a variety of occupational situations.
- CG.4.01 Demonstrate proper telephone etiquette.
 - CG.4.02 Listen effectively.
 - CG.4.03 Organize thoughts & clearly express point of view.
 - CG.4.04 Organize thoughts & write clearly.
 - CG.4.05 Demonstrate clear, effective communications verbally & in writing.
 - CG.4.06 Write & organize records clearly.
- CG.5 Understand the principles of habits for success.
Develop habits of success.
- CG.5.01 Demonstrate punctuality.
 - CG.5.02 Exhibit integrity & pride in workmanship.
 - CG.5.03 Demonstrate personal hygiene and cleanliness.
 - CG.5.04 Utilize time effectively & efficiently.
 - CG.5.05 Prioritize a series of tasks.
 - CG.5.06 Work within guidelines.
 - CG.5.07 Demonstrate adaptability to environment/situation.
 - CG.5.08 Practice frugality in the use of material and supplies.

- CG.5.09 Demonstrate diligence & responsibility.
- CG.5.10 Demonstrate industry & perseverance.
- CG.5.11 Demonstrate attitudes conducive to workplace success.
- CG.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

- CG.6 Understand the responsibilities and procedures of safety.
- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
 - CG.6.01 Develop a positive attitude regarding safety practices & issues.
 - CG.6.02 Use and inspect personal protective equipment.
 - CG.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
 - CG.6.04 Demonstrate continuous awareness of potential hazards to self and others.
 - CG.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
 - CG.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
 - CG.6.07 Demonstrate appropriate safety procedures in a given situation.
 - CG.6.08 Pass with 100% accuracy a written examination relating to safety issues.
 - CG.6.09 Pass with 100% accuracy a performance examination relating to safety.
 - CG.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
 - CG.6.11 Accurately document inspection, and maintenance of tools & equipment.
- CG.7 Understand career opportunities and career paths.
- CG.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
 - CG.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
 - CG.7.03 Evaluate personal characteristics required for working in (name the applicable area).
 - CG.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

- CG.8 Examine the components of prenatal care and development
- CG.8.01 Analyze hereditary and environmental factors affecting prenatal development beginning with conception.
 - CG.8.02 Examine stages of prenatal development beginning with conception.
 - CG.8.03 Examine care needed during prenatal development.
- CG.9 Analyze the growth, development, and care of the infant and toddler.
- CG.9.01 Analyze the physical, emotional, social, and intellectual development of the infant and toddler.
 - CG.9.02 Summarize strategies for optimizing the development of infants and toddlers.
 - CG.9.03 Describe the influences of the family and society on infants and toddlers.
 - CG.9.04 Analyze various theories of psychosocial and intellectual development.
- CG.10 Investigate the developmental areas of the pre-school and school-age child.
- CG.10.01 Identify environmental and hereditary influences that affect development and growth.

- CG.10.02 Analyze the physical, social, emotional, and intellectual development of the pre-school child.
- CG.10.03 Summarize activities and strategies for optimizing the development of the pre-school child.
- CG.10.04 Analyze the physical, social, emotional, and intellectual development of the school-age child.
- CG.10.05 Summarize activities and strategies for optimizing the development of the school-age child.
- CG.11 Assess basic needs of children that are important for optimum growth and development.
- CG.11.01 Assess developmentally appropriate guidance techniques for children at various ages and stages.
- CG.11.02 Analyze the role of nurturer in the growth and development of children.
- CG.11.03 Analyze the role of play in a child's development.
- CG.11.04 Describe dietary practices that promote optimum development of children.
- CG.11.05 Evaluate play activities and equipment for age appropriateness and safety.
- CG.11.06 Describe how to help meet the special needs of children with developmental differences.
- CG.12 Analyze factors relating to the care and protection of children.
- CG.12.01 Analyze practices that promote the health and wellness of children.
- CG.12.02 Evaluate child care agencies and services available to families.
- CG.12.03 Describe the impact of child abuse on children and families.
- CG.13 Utilize child growth and development knowledge and skills to apply in an experience –based or project-based learning experience.
- CG.13.01 Apply principles of child growth and development to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

- Demonstrate the proper techniques of handling an infant. Discuss how using proper handling techniques meet an infant's needs.
- Working in groups, students discuss the following topics: bathing, dressing, diapering, and feeding. Students research and demonstrate the proper procedures for each of the topics.
- Participate in infant observations.
- Observe the motor skills of children ages three, four, and five. Create a chart to record the advancing skills.
- Select and read age appropriate books to preschoolers.
- Using the Food Guide Pyramid, students plan a daily menu for a child.
- Brainstorm to determine habits that promote personal health.
- Develop pamphlets outlining desirable health habits for children.

Vocational Education Standard – Environmental Services

Program Focus [Apply the following to each area content standard.]

- WS.1 Identify the principles of SDA Christian Values in correlation with Environmental Services.
- WS.1.01 Recognize God as creator and sustainer of the universe.
 - WS.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - WS.1.03 Develop accountability as expressed in God's Word and laws.
 - WS.1.04 Employ Christian witnessing principles in the work environment.
 - WS.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - WS.1.06 Make biblically-based choices when dealing with work related information.
 - WS.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- WS.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
 - WS.2.01 Conflict resolution.
 - WS.2.02 Manage time effectively.
 - WS.2.03 Recognize relevant, ethical issues in the work environment.
 - WS.2.04 Take responsibility for mistakes and/or good work.
 - WS.2.05 Delegate duties.
 - WS.2.06 Interact with others respectfully.
 - WS.2.07 Demonstrate character, leadership, & integrity using creative & critical-thinking skills.
- WS.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
 - WS.3.01 Accept supervision willingly.
 - WS.3.02 Ask for help when needed.
 - WS.3.03 Follow directions and procedures.
 - WS.3.04 Work effectively with others in a professional setting.
 - WS.3.05 Respect the property & ideals of others.
 - WS.3.06 Assess implications of cultural and religious diversity for community and work places.
- WS.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
 - WS.4.01 Demonstrate proper telephone etiquette.
 - WS.4.02 Listen effectively.
 - WS.4.03 Organize thoughts & clearly express point of view.
 - WS.4.04 Organize thoughts & write clearly.
 - WS.4.05 Demonstrate clear, effective communications verbally & in writing.
 - WS.4.06 Write & organize records clearly.
- WS.5 Understand the principles of habits for success.
- Develop habits of success.
 - WS.5.01 Demonstrate punctuality.
 - WS.5.02 Exhibit integrity & pride in workmanship.
 - WS.5.03 Demonstrate personal hygiene and cleanliness.
 - WS.5.04 Utilize time effectively & efficiently.
 - WS.5.05 Prioritize a series of tasks.
 - WS.5.06 Work within guidelines.
 - WS.5.07 Demonstrate adaptability to environment/situation.
 - WS.5.08 Practice frugality in the use material and supplies.

- WS.5.09 Demonstrates diligence & responsibility.
- WS.5.10 Demonstrates industry & perseverance.
- WS.5.11 Demonstrate attitudes conducive to workplace success.
- WS.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

WS.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- WS.6.01 Develop a positive attitude regarding safety practice & issues.
- WS.6.02 Use and inspect personal protective equipment.
- WS.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- WS.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- WS.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- WS.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- WS.6.07 Demonstrate appropriate safety procedures in a given situation.
- WS.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- WS.6.09 Pass with 100% accuracy a performance examination relating to safety.
- WS.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- WS.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.

WS.7 Understand career opportunities and career paths.

- WS.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- WS.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- WS.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- WS.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

ES.8 Understand the principles of Sanitation and Disinfection.

- ES.8.01 Identify infectious bacteria and viruses.
- ES.8.02 Practice personal hygiene and handwashing.
- ES.8.03 Identify basic types of disinfection.
- ES.8.03 Evaluate classes of disinfection.

ES.9 Understand Body Movement.

- ES.10.01 Apply the principles of body mechanics.
- ES.10.02 Evaluate problems resulting from poor body mechanics.

ES.11 Understand basic cleaning procedures.

- ES.11.01 Identify types of equipment and supplies needed to set up the housekeeping cart.
- ES.11.02 Identify variety of Cleaning solutions for basic cleaning.
- ES.11.03 Explain the procedures for Dusting, Washing and Vacuuming.
- ES.11.04 Prepare surface area of floor for proper cleaning.
- ES.11.05 Identify equipment for mopping and buffing.
- ES.11.06 Evaluate procedures for Mopping, scrubbing and buffing.

- ES.12 Understand the principles of maintaining floors and other Surfaces.
- ES.12.01 Identify different types of floors.
 - ES.12.02 Identify different types of floor areas.
 - ES.12.03 Evaluate the basic rules of floor care.
 - ES.12.04 Apply methods of floor maintenance to a variety of floor types.
 - ES.12.05 Identify other types of surface areas for basic cleaning.
 - ES.12.06 Identify a variety of cleaning agents necessary for cleaning other surfaces.
 - ES.12.07 Evaluate the equipment needed to clean other than floor surfaces.
- ES.13 Understand special cleaning needs and stain removal.
- ES.13.01 Specify the different types of stain removal agents.
 - ES.13.02 Evaluate the principles of stain removal.
 - ES.13.03 Identify different type of furniture for special cleaning needs.
 - ES.13.04 Evaluate special needs in cleaning light fixtures, lamps and shades.
 - ES.13.05 Evaluate procedures for special cleaning of radiators and air conditioners.
 - ES.13.06 Identify various types of window coverings.
 - ES.13.07 Evaluate methods of cleaning various window coverings.
- ES.14 Understand Pest Control.
- ES.14.01 Identify different types of pests that affect the cleaning environment.
 - ES.14.02 Evaluate methods of eradication of insects and rodents.
- ES.15 Understand cleaning the patient unit.
- ES.15.01 Identify patients units in the cleaning environment.
 - ES.15.02 Relate the patient unit environment to a homelike setting.
 - ES.15.03 Evaluate the procedures for servicing the occupied unit.
 - ES.15.04 Evaluate the procedures for servicing the unoccupied unit.
 - ES.15.05 Evaluate the procedures for servicing the discharge and isolation unit.
- ES.16 Understanding general patient area cleaning needs.
- ES.16.01 Evaluate the considerations in area cleaning.
 - ES.16.02 Identify the general areas in the cleaning environment.
 - ES.16.03 Consider traffic patterns in general patient areas.
 - ES.16.04 Evaluate methods for cleaning Stairs, screens, Corridors, etc.
- ES.17 Understand the care and upkeep of Housekeeping equipment.
- ES.17.01 Evaluate storage facilities.
 - ES.17.02 Identify the points to remember for upkeep of equipment.
 - ES.17.03 Evaluate the methods for care of Manually and power operated equipment.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Report defective parts or performance to supervisor.
- Apply a floor finish according to directions.
- Successfully complete an experience-based or school-project based learning experience.

Vocational Education Standard – Nursing Assistant

Program Focus [Apply the following to each area content standard.]

- NA.1 Identify the principles of SDA Christian Values in correlation with The Nursing Assistant Program.
- NA.1.01 Recognize God as creator and sustainer of the universe.
 - NA.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - NA.1.03 Develop accountability as expressed in God's Word and IaNA.
 - NA.1.04 Employ Christian witnessing principles in the work environment.
 - NA.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - NA.1.06 Make biblically-based choices when dealing with work related information.
 - NA.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- NA.2 Understand servant-leadership and ethical principles.
Apply principles of servant-leadership & ethical behavior to selected situations.
- NA.2.01 Conflict resolution.
 - NA.2.02 Manage time effectively.
 - NA.2.03 Recognize relevant, ethical issues in the work environment.
 - NA.2.04 Take responsibility for mistakes and/or good work.
 - NA.2.05 Delegate duties.
 - NA.2.06 Interacts with others respectfully.
 - NA.2.07 Demonstrates character, leadership, & integrity using creative & critical-thinking skills.
- NA.3 Understand the concept of cooperation and teamwork.
Demonstrate cooperation and teamwork skills.
- NA.3.01 Accept supervision willingly.
 - NA.3.02 Ask for help when needed.
 - NA.3.03 Follows directions and procedures.
 - NA.3.04 Work effectively with others in a professional setting.
 - NA.3.05 Respect the property & ideals of others.
 - NA.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)
- NA.4 Understand the use of communication skills –interpersonal & group; written & oral.
Use appropriate communication skills in a variety of occupational situations.
- NA.4.01 Demonstrate proper telephone etiquette.
 - NA.4.02 Listen effectively.
 - NA.4.03 Organize thoughts & clearly express point of view.
 - NA.4.04 Organize thoughts & write clearly.
 - NA.4.05 Demonstrate clear, effective communications verbally & in writing.
 - NA.4.06 Write & organize records clearly.
- NA.5 Understand the principles of habits for success.
Develop habits of success.
- NA.5.01 Demonstrate punctuality.
 - NA.5.02 Exhibit integrity & pride in workmanship.
 - NA.5.03 Demonstrate personal hygiene and cleanliness.
 - NA.5.04 Utilize time effectively & efficiently.
 - NA.5.05 Prioritize a series of tasks.
 - NA.5.06 Work within guidelines.
 - NA.5.07 Demonstrate adaptability to environment/situation.

- NA.5.08 Practice frugality in the use of material and supplies.
- NA.5.09 Demonstrate diligence & responsibility.
- NA.5.10 Demonstrate industry & perseverance.
- NA.5.11 Demonstrate attitudes conducive to workplace success.
- NA.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

NA.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
- NA.6.01 Develop a positive attitude regarding safety practice & issues.
- NA.6.02 Use and inspect personal protective equipment.
- NA.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
- NA.6.04 Demonstrate continuous awareness of potential hazards to self and others.
- NA.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- NA.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
- NA.6.07 Demonstrate appropriate safety procedures in a given situation.
- NA.6.08 Pass with 100% accuracy a written examination relating to safety issues.
- NA.6.09 Pass with 100% accuracy a performance examination relating to safety.
- NA.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- NA.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.

NA.7 Understand career opportunities and career paths.

- NA.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- NA.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- NA.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- NA.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

NA.8 Understand the Practical Training core of the Nursing Assistant Program.

- NA.8.01 Identify the purpose of team approach to caring for residents.
- NA.8.02 Identify the nurse assistant's role on the health care team.
- NA.8.03 Name the actions that you will perform as a team member.
- NA.8.04 Name the areas in which collecting information as a team is important.
- NA.8.05 State the responsibilities that the nurse assistant would have at a team meeting.
- NA.8.06 State the importance of coordinating activities and what the nurse assistant can do to coordinate care.
- NA.8.07 State the general responsibilities of a nurse assistant.
- NA.8.08 Describe body language and how body language can communicate.
- NA.8.09 Identify the nurse assistant's role in Standards NA.3 and NA.4.
- NA.8.10 Promote resident's independence.
- NA.8.11 Respect resident's rights.

NA.9 Understand the Prevention and Control of Infection.

- NA.9.01 Define "germs" or microorganisms.

- NA.9.02 Describe briefly how microorganisms cause infections.
- NA.9.03 State reasons why patients are susceptible to infections.
- NA.9.04 Identify the three groups of microorganisms that cause infections in the elderly, frail patients in a nursing home.
- NA.9.05 List the three (3) most common types of infection occurring in elderly patients in a nursing home.
- NA.9.06 Identify the most important measure in prevention and control of infection.
- NA.9.07 List instances when hand-washing is very important.
- NA.9.08 Demonstrate proper hand-washing technique.
- NA.9.09 Identify the second most important measure in the prevention and control of infection.
- NA.9.10 Describe briefly the purpose of isolation for some patients who have infection.
- NA.9.11 Demonstrate the proper use of gloves, gown, and mask.
- NA.9.12 Understand the concept in breaking the chain of infection.

NA.10 Understand Resident Safety.

- NA.10.01 Name common environmental hazards and ways to correct them.
- NA.10.02 Identify ways to prevent a patient from falling out of a chair or bed.
- NA.10.03 Identify the consideration in the use of a restraint.
- NA.10.04 State the rule regarding how often restraints must be checked and removed.
- NA.10.05 Identify different types of restraints and how to put them on.
- NA.10.06 Identify ways to prevent fire.
- NA.10.07 Describe what you will do in the event of a fire-related emergency.
- NA.10.08 Demonstrate the use of the Heimlich Maneuver.

NA.11 Understand Basic Nursing Skills.

- NA.11.01 Take and Record Vital Signs.
- NA.11.02 Measure and Record Height and Weight.
- NA.11.03 Care for the Patient's Environment.
- NA.11.04 Recognize abnormal changes in body functioning and the importance of reporting such changes to a supervisor.
- NA.11.05 Care for Patients When Death Is Imminent.
- NA.11.06 Demonstrate proper hand washing technique.
- NA.11.07 Measure and record input/output.
- NA.11.08 Understand the difference in care of residents on Hospice or Respite Care.

NA.12 Understand Personal Care Skills.

- NA.12.01 Identify areas of care included in personal grooming.
- NA.12.02 Assist with eating and hydration.
- NA.12.03 Use proper feeding techniques.
- NA.12.04 Maintain proper skin integrity.
- NA.12.05 Assist in transfers, positioning and turning.
- NA.12.06 Demonstrate proper bed making techniques.
- NA.12.07 Demonstrate ambulation with walker, cane, and gait belt.
- NA.12.08 Identify how the use of a back rub is beneficial to a resident.
- NA.12.09 Assist with bedpan and output.
- NA.12.10 Identify when and how to provide proper oral/dental care.
- NA.12.11 Assist dressing a dependent/partial dependent resident.
- NA.12.12 Identify those residents who can have nail care by nursing assistant.
- NA.12.13 Demonstrate partial bath, bed bath, whirlpool use, and showering of resident.
- NA.12.14 Use proper technique in giving perineal care of male/female residents.

- NA.13 Understand Mental Health and Social Service Needs.
- NA.13.01 Modify Nursing Assistant's Behavior in Response to a Patient's Behavior.
 - NA.13.02 Be aware of Developmental tasks associated with the aging process.
 - NA.13.03 Respond to patient behavior.
 - NA.13.04 Allow the patient to make personal choices; provide and reinforce other behavior consistent with the patient's dignity.
 - NA.13.05 Recognize the patient's family as a source of emotional support.
- NA.14 Understand the Care of Cognitively Impaired Patients.
- NA.14.01 Address techniques for the unique needs and behaviors of individuals with Dementia (Alzheimer's and others).
 - NA.14.02 Communicate with cognitively impaired patients.
 - NA.14.03 Respond appropriately to the behavior of cognitively impaired patients.
- NA.15 Understand Basic Restorative Services in the Nursing Assistant Program.
- NA.15.01 Train the Patient in self care according to the patient's ability.
 - NA.15.02 Identify assistive devices in Transfer, Ambulation, eating and dressing.
 - NA.15.03 Establish the maintenance of range of motion.
 - NA.15.04 Move patients using proper turning and positioning techniques both in bed and chair.
 - NA.15.05 Describe the aging process and Disease management as it relates to Bowel and Bladder Training.
 - NA.15.06 Describe the restorative care process as it relates to the care and use of Prosthetic and Orthotic devices.
- NA.16 Understand Resident's Rights.
- NA.16.01 Provide Privacy and maintenance of confidentiality.
 - NA.16.02 Promote the patient's right to make personal choices to accommodate their needs.
 - NA.16.03 Assist in resolving grievances and disputes.
 - NA.16.04 Provide needed assistance in getting to and participating in patient and family groups and other activities.
 - NA.16.05 Describe maintenance care and security of patient's personal possessions.
 - NA.16.06 Provide care in view of the patient's right to be free from abuse, mistreatment, and neglect.
 - NA.16.07 Report abuse neglect or mistreatment of patient's to appropriate facility staff.
 - NA.16.08 Avoid the need for restraints in accordance with current professional standards.
- NA.17 Understand the general responsibilities of a nurses assistant.
- NA.17.01 State the general responsibilities of a nurse assistant.
 - NA.17.01 Complete an introduction to long-term care.
 - NA.17.02 Assist in creating a home for the patients.
 - NA.17.03 Identify the special needs of the patient.
- NA.18 Utilize Nursing Assistant Knowledge and Skills to apply in a experience-based or a School Project-based learning experience.
- NA.18.01 Apply principles of Nursing Assistant training to a experience-based or a school project based learning experience.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one of more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Describe how a nursing assistant should answer the phone.
- Name the records that relate to the care of the patient.
- State the purposes of the care plan.
- Name ways to cope with stress.

Vocational Education Standard – Plant Services

Program Focus [Apply the following to each content standard.]

- PS.1 Identify the principles of SDA Christian values in correlation with Plant Services.
- PS.1.01 Recognize God as creator and sustainer of the universe.
 - PS.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - PS.1.03 Develop accountability as expressed in God's Word and laws.
 - PS.1.04 Employ Christian witnessing principles in the work environment.
 - PS.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - PS.1.06 Make biblically-based choices when dealing with work related information.
 - PS.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- PS.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
- PS.2.01 Conflict resolution.
 - PS.2.02 Manage time effectively.
 - PS.2.03 Recognize relevant, ethical issues in the work environment.
 - PS.2.04 Take responsibility for mistakes and/or good work.
 - PS.2.05 Delegate duties.
 - PS.2.06 Interacts with others respectfully.
 - PS.2.07 Demonstrates character, leadership, & integrity using creative & critical thinking skills.
- PS.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
- PS.3.01 Accept supervision willingly.
 - PS.3.02 Ask for help when needed.
 - PS.3.03 Follows directions and procedures.
 - PS.3.04 Work effectively with others in a professional setting.
 - PS.3.05 Respect the property & ideals of others.
 - PS.3.06 [Assess implications of cultural and religious diversity for community and work places.](#)
- PS.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
- PS.4.01 Demonstrate proper telephone etiquette.
 - PS.4.02 Listen effectively.
 - PS.4.03 Organize thoughts & clearly express point of view.
 - PS.4.04 Organize thoughts & write clearly.
 - PS.4.05 Demonstrate clear, effective communications verbally & in writing.
 - PS.4.06 Write & organize records clearly.
- PS.5 Understand the principles of habits for success.
- Develop habits of success.
- PS.5.01 Demonstrate punctuality.
 - PS.5.02 Exhibit integrity & pride in workmanship.
 - PS.5.03 Demonstrate personal hygiene and cleanliness.
 - PS.5.04 Utilize time effectively & efficiently.
 - PS.5.05 Prioritize a series of tasks.
 - PS.5.06 Work within guidelines.
 - PS.5.07 Demonstrate adaptability to environment / situation.

- PS.5.08 Practice frugality in the use material and supplies.
- PS.5.09 Demonstrates diligence & responsibility.
- PS.5.10 Demonstrates industry & perseverance.
- PS.5.11 Demonstrate attitudes conducive to workplace success.
- PS.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

- PS.6 Understand the responsibilities and procedures of safety.
- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
 - PS.6.01 Develop a positive attitude regarding safety practices & issues.
 - PS.6.02 Use and inspect personal protective equipment.
 - PS.6.03 Inspect, maintain, and employ safe operating procedures with tools & equipment in accordance with manufacturer's specifications.
 - PS.6.04 Demonstrate continuous awareness of potential hazards to self and others.
 - PS.6.05 Comprehend personal responsibilities, regulations and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
 - PS.6.06 Comprehend personal responsibilities, regulations, and OSHA policies regarding reporting of accidents and observed hazards.
 - PS.6.07 Demonstrate appropriate safety procedures in a given situation.
 - PS.6.08 Pass with 100% accuracy a written examination relating to safety issues.
 - PS.6.09 Pass with 100% accuracy a performance examination relating to safety.
 - PS.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
 - PS.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.
- PS.7 Understand career opportunities and career paths.
- PS.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
 - PS.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
 - PS.7.03 Evaluate personal characteristics required for working in (name the applicable area).
 - PS.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

- PS.7 Identify, select, use, maintain and store tools, instruments, and equipment used in plant services.
- PS.7.01 Illustrate the function and purpose of appropriate hand and power tools.
 - PS.7.02 Select meters and instruments for the specific job.
 - PS.7.03 Demonstrate the correct use, storage and care of equipment.
 - PS.7.04 Properly maintain and store hand tools.
- PS.8 Analyze and implement procedures to mitigate hazards associated with plant inspection and preventative and corrective maintenance.
- PS.8.01 Evaluate and mitigate the potential risk of injury from electrical shock, burns, and moving parts for a given task.
 - PS.8.02 Use and care for protective equipment used in plant services.
 - PS.8.03 Demonstrate the ability to provide a safe environment for others while performing maintenance tasks.
- PS.9 Understand how to perform maintenance inspections on building safety systems.
- PS.9.01 Demonstrate the ability to perform operational test of fire alarm systems.
 - PS.9.02 Demonstrate the ability to perform the inspection of fire extinguishers.

- PS.9.03 Demonstrate the ability to perform tests on various smoke detection systems.
- PS.9.04 Demonstrate the ability to perform a test to ensure emergency lights will function properly during power outage.
- PS.9.05 Demonstrate the ability to perform water temperature test.
- PS.9.06 Demonstrate the ability to perform tests on kitchen range hoods.
- PS.9.07 Demonstrate the ability to perform test inspection on security systems.
- PS.9.08 Demonstrate the ability to test a generator to determine that it will start and carry electrical load for a given period of time.
- PS.10 Understand how to perform general preventative maintenance on facilities related equipment.
- PS.10.01 Demonstrate an ability to recognize, report and repair unsafe or damaged equipment and other environmental hazards in a given facility.
- PS.10.02 Demonstrate the ability to perform routine maintenance of filters on various types of HVAC packages.
- PS.10.03 Demonstrate the ability to perform routine maintenance of plenum filters.
- PS.10.04 Demonstrate the ability to perform routine lubrication of equipment and hardware, e.g. pumps, motors, hinges.
- PS.11 Understand how to perform basic corrective maintenance on facilities related equipment.
- PS.11.01 Demonstrate the ability to troubleshoot and repair common failures in plumbing fixtures, valves, and faucets.
- PS.11.02 Demonstrate the ability to troubleshoot and repair common failures in electrical fixtures and receptacles.
- PS.11.03 Demonstrate the ability to troubleshoot and repair common construction damages, e.g. floors, doors, windows, cabinets.
- PS.11.04 Demonstrate the ability to troubleshoot and repair common failures in equipment and appliances used in residential and commercial buildings.
- PS.11.05 Understand the limits of the maintenance department and when to refer a request or repair to administration or to another department.
- PS.16 Utilize concrete construction knowledge and skills to apply in an experience –based or school project-based learning experience.
- PS.16.01 Apply principles of concrete construction to an experience-based or school project-based learning situation.

SAMPLE PERFORMANCE TASKS

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Vocational Education Standard – Water Treatment

Program Focus [Apply the following to each area content standard.]

- WS.1 Identify the principles of SDA Christian Values in correlation with Water Services.
- WS.1.01 Recognize God as creator and sustainer of the universe.
 - WS.1.02 Value God's inspired writings as a basis for useful labor and growth.
 - WS.1.03 Develop accountability as expressed in God's Word and laws.
 - WS.1.04 Employ Christian witnessing principles in the work environment.
 - WS.1.05 Broaden intellectual abilities through the study and application of vocational education.
 - WS.1.06 Make biblically-based choices when dealing with work related information.
 - WS.1.07 Apply biblical principles of Christian Morality, integrity, and ethical behavior to the work environment.

Program Abilities [Apply the following to each area content standard.]

- WS.2 Understand servant-leadership and ethical principles.
- Apply principles of servant-leadership & ethical behavior to selected situations.
 - WS.2.01 Conflict resolution.
 - WS.2.02 Manage time effectively.
 - WS.2.03 Recognize relevant, ethical issues in the work environment.
 - WS.2.04 Take responsibility for mistakes and/or good work.
 - WS.2.05 Delegate duties.
 - WS.2.06 Interact with others respectfully.
 - WS.2.07 Demonstrate character, leadership, & integrity using creative & critical-thinking skills.
- WS.3 Understand the concept of cooperation and teamwork.
- Demonstrate cooperation and teamwork skills.
 - WS.3.01 Accept supervision willingly.
 - WS.3.02 Ask for help when needed.
 - WS.3.03 Follow directions and procedures.
 - WS.3.04 Work effectively with others in a professional setting.
 - WS.3.05 Respect the property & ideals of others.
 - WS.3.06 Assess implications of cultural and religious diversity for community and work places.
- WS.4 Understand the use of communication skills –interpersonal & group; written & oral.
- Use appropriate communication skills in a variety of occupational situations.
 - WS.4.01 Demonstrate proper telephone etiquette.
 - WS.4.02 Listen effectively.
 - WS.4.03 Organize thoughts & clearly express point of view.
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- Develop habits of success.
 - WS.5.01 Demonstrate punctuality.
 - WS.5.02 Exhibit integrity & pride in workmanship.
 - WS.5.03 Demonstrate personal hygiene and cleanliness.
 - WS.5.04 Utilize time effectively & efficiently.
 - WS.5.05 Prioritize a series of tasks.
 - WS.5.06 Work within guidelines.
 - WS.5.07 Demonstrate adaptability to environment/situation.
 - WS.5.08 Practice frugality in the use material and supplies.

- WS.5.09 Demonstrates diligence & responsibility.
- WS.5.10 Demonstrates industry & perseverance.
- WS.5.11 Demonstrate attitudes conducive to workplace success.
- WS.5.12 Assess situations and apply problem-solving and decision-making skills within the school, community, and workplace.

WS.6 Understand the responsibilities and procedures of safety.

- Assume responsibility for the safety of themselves, their coworkers, & bystanders.
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- WS.6.10 Maintain a portfolio record of written safety examinations & equipment examinations for which the student has passed an operational checkout by the instructor.
- WS.6.11 Accurately documents inspection, maintenance, & repair of tools & equipment.

WS.7 Understand career opportunities and career paths.

- WS.7.01 Explain the titles, roles, and functions of individuals engaged in (name the applicable area).
- WS.7.02 Investigate employment and entrepreneurial opportunities in (name the applicable area).
- WS.7.03 Evaluate personal characteristics required for working in (name the applicable area).
- WS.7.04 Investigate postsecondary education, professional organizations, and trade publications appropriate for continuing education.

Area Content [understand, apply, experience.]

WS.8 Understand basic technical skills knowledge and global considerations in the occupational area of Water Services.

- Consider types, design and source for water service application.
- WS.8.01 Identify the different types of water systems and their classification.
- WS.8.02 Evaluate the difference between Biological/natural and chemical/physical treatments.
- WS.8.03 Identify water sources for water and wastewater systems.
- WS.8.04 Complete design flow diagnostics.
- WS.8.05 Explore careers in the field of water treatment.

WS.9 Understand the basic treatment process for small water and Grade1 wastewater systems.

- Apply the principles of treatment to water system applications.
- WS.9.01 Evaluate the variety of treatment systems available in the industry.
- WS.9.02 Compare different methods of Aeration.
- WS.9.03 Evaluate a variety of filtration methods.
- WS.9.04 Associate proper chemicals with various testing procedures.
- WS.9.05 Learn lab testing requirements for both bacteriological and chemical/physical tests.

- WS.9.06 Explore the different options for effluent discharge.
- WS.9.07 Evaluate various methods of disinfection of water sources and effluent.

WS.10 Understand the mechanical aspects and requirements of Water systems.

Apply the appropriate regulations and maintenance principles to operations.

WS.10.01 Identify multiple feed systems associated with water and wastewater plants.

WS.10.02 Evaluate preventive maintenance plans.

WS.10.03 Review pipeline, valve, hydrant and tap design.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Scheduling for lab test requirements.
- Create effluent control flowsheet.
- Successfully complete an experience-based or school-project based learning experience.